Tier 2

Environmental Assessment

Kankakee River Bridge and Track Improvements (MP 51.88 to MP 53.19)

Will County, Illinois

August 2015

Illinois Department of Transportation

Kankakee River Bridge and Track Improvements (MP 51.88 to MP 53.19) for the Chicago to St. Louis High-Speed Rail Project
Tier 2 Environmental Assessment

Submitted Pursuant to 64 Federal Register (FR) 28545
by the
US DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
and
ILLINOIS DEPARTMENT OF TRANSPORTATION

8/7/2015
Date of Approval

for Federal Railroad Administration

8/7/2015
Date of Approval

for Illinois DOT

ABSTRACT: This Environmental Assessment (EA) evaluates the construction of a second track along the mainline service of the Union Pacific Railroad (UPRR) from north of East Kankakee River Drive (milepost [MP] 51.88) to south of North 1st Street (MP 53.19) in the City of Wilmington, Will County, Illinois. It is a Tier 2 document for a portion of the Chicago to St. Louis High-Speed Rail Program (HSR Program) that was assessed in a 2012 Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD). The Build Alternative includes: 1) the shifting of existing mainline tracks; 2) construction of new tracks and access roads; 3) railroad bridge crossing replacement; 4) improvements to at-grade rail/roadway crossings; and 5) associated signal upgrades, culvert work, and fencing. The Build Alternative is the Illinois Department of Transportation's (IDOT) and Federal Railroad Administration's (FRA) Preferred Alternative.

The Build Alternative would support the purpose of the HSR Program of improving high speed passenger rail service, resulting in a more balanced use of Chicago to St. Louis corridor travel options by diverting trips made by automobile and air to rail; allow for planned growth in passenger rail trains; improve grade crossing protection devices; and replace existing deteriorated structures.

No significant impacts to community, cultural, or natural resources would occur. Potential impacts include: acquisition of approximately 4.08 acres of additional ROW and 1.82 acres of temporary easements with no displacement, a visual impact resulting from vegetation loss, permanent impacts to 0.41 acre of wetland, and temporary impact to 0.18 acres of wetland, construction-related impact at the Kankakee River and Forked Creek, and impacts to the habitat of federally and state protected species.

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Abbreviations and Acronyms

ACM – Asbestos-Containing Materials

ADA - Americans with Disabilities Act

APE – Area of Potential Effects

ASTs – Aboveground Storage Tanks

AWQMN – Ambient Water Quality Monitoring Network

BDE – Bureau of Design and Environment

BMP – Best Management Practice

BOL – Bureau of Land

BSC – Biological Stream Characterization

CAA – Clean Air Act

CAAA – Clean Air Act Amendment

CE – Categorical Exclusion

CEQ – Council on Environmental Quality

CFR - Code of Federal Regulations

CSP – Corrugated Steel Pipe

CWA – Clean Water Act

dB(A) – Weighed decibel

EA – Environmental Assessment

EDR – Environmental Data Resources

EIS - Environmental Impact Statement

EMS – Emergency Medical Services

ESA – Endangered Species Act

FEIS – Final Environmental Impact Statement

FEMA – Federal Emergency Management Agency

FR – Federal Register

FHWA – Federal Highway Administration

FIRM – Flood Insurance Rate Maps

FONSI – Finding of No Significant Impact

FQI – Floristic Quality Index

FRA – Federal Railroad Administration

GHG – Greenhouse Gas

HAARGIS –Historic, Architectural and Archaeological Resources Geographic Information System

HQAR – High Quality Aquatic Resources

HSR – High Speed Rail

HUC – Hydrologic Unit Code

IAC – Illinois Administrative Code

IBI – Index of Biotic Integrity

IDNR – Illinois Department of Natural Resources

IDOA – Illinois Department of Agriculture

IDOT – Illinois Department of Transportation

IEPA – Illinois Environmental Protection Agency

ILCS – Illinois Combined Statues

INAI – Illinois Natural Area Inventory

INHS – Illinois Natural History Survey

INPC – Illinois Nature Preserves Commission

ISAS – Illinois State Archaeological Survey

ITA – Incidental Take Authorization

IWPA – Interagency Wetlands Policy Act

LAWCON – Land and Water Conservation

LBP – Lead-Based Paint

LESA – Land Evaluation and Site Assessment

LUST – Leaking Underground Storage Tank

mIBI – Macroinvertebrate Biotic Index

MSAT – Mobile Source Air Toxics

MOU – Memorandum of Understanding

MP – Milepost

Mph – miles per hour

NAAQS - National Ambient Air Quality Standards

NEPA – National Environmental Policy Act

NHPA – National Historic Preservation Act

NPDES – National Pollutant Discharge Elimination System

NRCS – Natural Resource Conservation Service

NRHP – National Register of Historic Places

NRI – Nationwide Rivers Inventory

OSLAD – Open Space Lands Acquisition and Development Act

OWR – Office of Water Resources

PEMC – Palustrine, emergent, temporary flooded

PFO – Palustrine, forested/palustrine, emergent, seasonally flooded

PESA – Preliminary Environmental Site Assessment

PM10, PM2.5 – Particulate Matter

PTC – Positive Train Control

RCRA-SQG – Resource Conservation and Recovery Act – Small Quantity Generator

REC – Recognized Environmental Conditions

ROD – Record of Decision

ROW – Right-of-Way

SSM – Supplemental Safety Measures

SFR – Single-family Residences

SHPO – State Historic Preservation Office

SIP – State Implementation Plan

SWPPP – Stormwater Pollution Prevention Plan

UPRR – Union Pacific Railroad

USACE – U.S. Army Corps of Engineers

USDA – U.S. Department of Agriculture

USDOT - U.S. Department of Transportation

USEPA – U.S. Environmental Protection Agency

USFWS – U.S. Fish and Wildlife Service

USGS – U.S. Geological Survey

USC – U.S. Code

USTs – Underground Storage Tanks

Vdb – Velocity decibels

WOUS – Waters of the U.S.

1.0 Purpose and Need

The Illinois Department of Transportation (IDOT), in coordination with the Federal Railroad Administration (FRA), proposes to construct a second track adjacent to the existing mainline of the Union Pacific Railroad (UPRR) from north of East Kankakee River Drive to south of North 1st Street in the City of Wilmington, Will County, Illinois. The Kankakee River Bridge and Track Improvements Project (the "Project") is 1.31 miles long from milepost (MP) 51.88 to MP 53.19 and includes:

- Kankakee River Bridge – A new double track bridge at MP 52.70.
- North Water Street Bridge – Superstructure replacement, including the addition of a second track at MP 52.66.
- Forked Creek Bridge – Complete bridge replacement, including the addition of a second track MP 52.47.
- A new second mainline track and existing track shifts.
- Access roads (10-feet-wide paralleling the track within the railroad right-of-way (ROW) intermittently for a total of 1.02 miles).
- At-grade crossing improvements at East Kankakee River Drive, a private crossing, North Kankakee Street, and North 1st Street.
- Culvert improvements.
- Positive Train Control (PTC) signaling.

No stationhouses are in the Project study area and no new stationhouses are planned. The location of the proposed Project is shown in Exhibit 1-1.

As proponents of an action supported by federal funds, IDOT and FRA must comply with the National Environmental Policy Act (NEPA). NEPA requires federal agencies to consider the impacts of their actions on the natural, social, economic, and cultural environment and to disclose considerations in a public document. The NEPA process is intended to help public officials make decisions based on an understanding of the environmental consequences and to take actions that protect, restore, and enhance the environment (40 Code of Federal Regulations (CFR) § 1500.1).

From the standpoint of NEPA documentation, the proposed Project is one component of the Chicago to St. Louis High-Speed Rail Program (HSR Program) assessed in a Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) approved in 2012. This Environmental Assessment (EA) presents the Tier 2 environmental impact assessment for the MP 51.88 to MP 53.19 section of the HSR Program.

Date: 12/23/2014

PROJECT LOCATION MAP

Exhibit
1 - 1

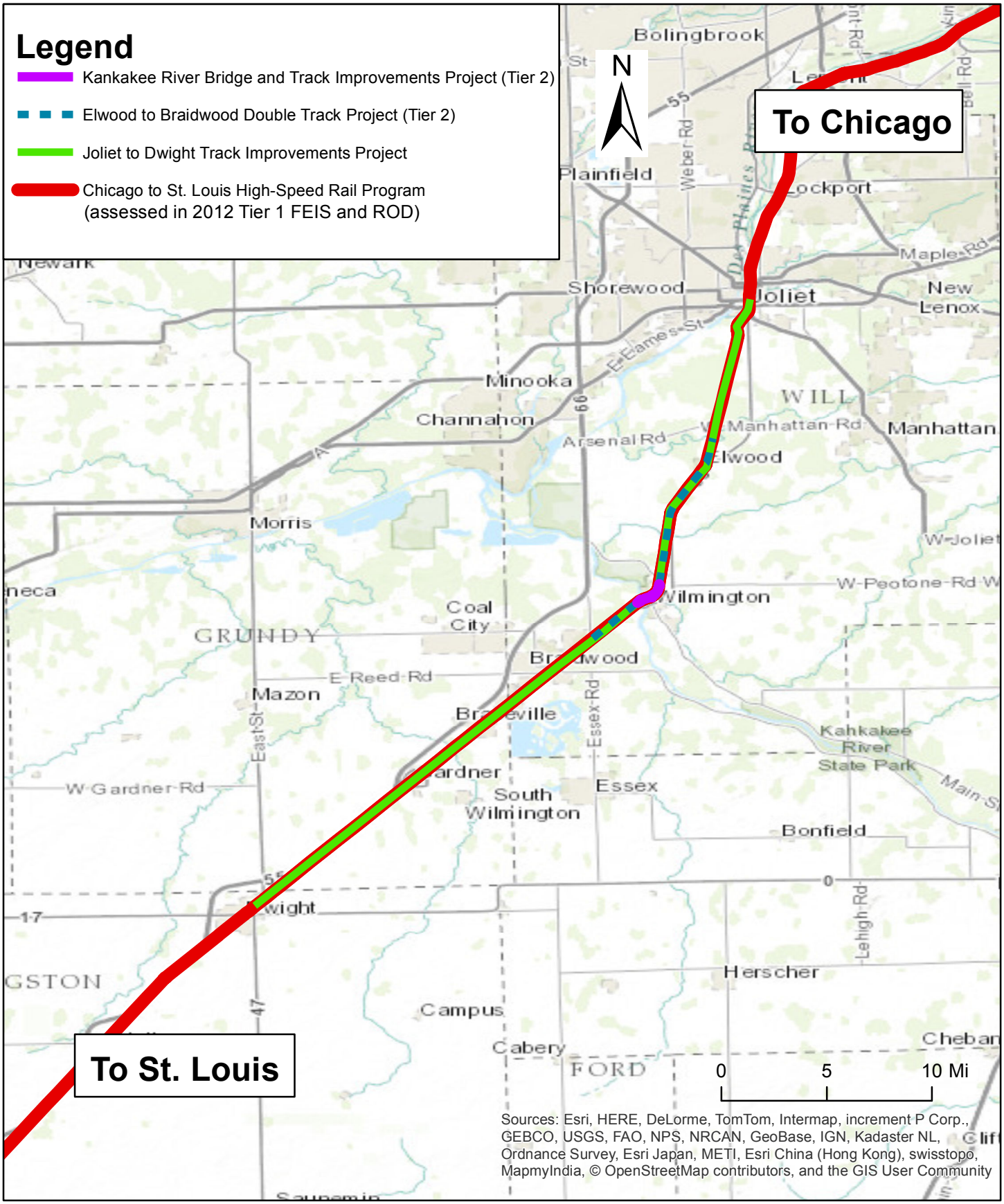
The purpose of this EA is to provide FRA and the public with an accounting of the environmental impacts of the alternatives for the proposed Project and to determine if significant environmental impacts would occur. This EA serves as the primary document to facilitate review of the proposed Project by federal, state, and local agencies, and the public.

1.1 Illinois High Speed Rail Project History

In January 2003, IDOT, FRA, and Federal Highway Administration (FHWA) completed an FEIS for the Chicago to St. Louis corridor. The Preferred Alternative from the FEIS included the provision of high-speed rail service, operating at 110 miles per hour (mph), along the existing Chicago to St. Louis Amtrak route south of Dwight, Illinois. Selected improvements 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. FRA and FHWA issued a ROD in January 2004, allowing improvements in the Dwight to St. Louis portion of the corridor to be advanced. Since the ROD, IDOT has made major progress with improvements to the corridor in cooperation with the UPRR, which owns the ROW south of Joliet and operates rail freight services in the corridor. Extensive rehabilitation and upgrading of corridor track and signal systems have been undertaken, and four-quadrant gates have been installed at many at-grade crossings.

In 2011, an EA was completed and FRA issued a Finding of No Significant Impact (FONSI) dated November 2011 for track improvements from Joliet to Dwight. These improvements included upgrading approximately 36 miles of existing track and associated grade crossings to accommodate 110 mph high-speed rail passenger trains, the addition of 6 miles of double track, approximately 2 miles of new side track, and associated new turnouts. Additional improvements between Dwight and Joliet were assessed and cleared for implementation in a Categorical Exclusion (CE) titled "High-Speed Rail Corridor - Joliet to Dwight Track Improvement Project" dated November 24, 2014.

In December 2012, a Tier 1 FEIS was completed and FRA issued a ROD for the Chicago to St. Louis HSR Program to change the existing rail corridor from one track to two tracks. Preferred corridors were selected for Chicago to Joliet and Granite City to St. Louis. It is important to note that these proposed improvements were considered in addition to those improvements associated with the 2004 Record of Decision for the Chicago-St. Louis High-Speed Rail Project and the 2011 EA/FONSI for the UPRR's Track Improvement Project from Joliet to Dwight, IL; those improvements are currently in the process of being constructed. In addition, in December 2012, a Tier 2 FEIS was completed and FRA issued a ROD for improvements in Springfield, Illinois.



Date: 12/23/2014

OTHER RELATED HIGH-SPEED RAIL PROGRAM PROJECTS

Exhibit
1 - 2

This EA is one of several Tier 2 documents regarding portions of the Chicago to St. Louis corridor addressed in the 2012 Tier 1 FEIS and ROD (see Exhibit 1-2.). The other Tier 2 documents include:

1. Double track from Chicago to Joliet (EIS in progress)
2. Joliet to Dwight Track Improvement Project (CE approved November 2014)—double track components
3. Double track from Elwood to Wilmington (EA in progress)
4. A flyover grade separating two railroads in Springfield, Illinois (EA in progress)
5. Double track from Granite City, Illinois to St, Louis, Missouri (EIS in progress)

1.2 Project Study Area

The Project study area consists of a 1.31 mile portion of the Chicago to St. Louis HSR Program corridor in Will County along the UPRR mainline alignment between East Kankakee River Drive (MP 51.88) to south of North 1st Street (MP 53.19), in the City of Wilmington, Will County, Illinois. The City of Wilmington is in the Kankakee River Valley, 52 miles south of Chicago and 15 miles south of Joliet. The Kankakee River is the most notable feature in the City of Wilmington with an island in the Kankakee River, occupied as a city park (See Exhibit 1-1.)

1.3 Purpose and Need

Under NEPA, the purpose is a statement of goals and objectives that an agency intends to fulfill by taking a proposed action. It is typically based on a problem to be fixed or solved, or a decision that needs to be made. The need statement explains why an agency is proposing a particular action at a specified time. The need statement describes underlying conditions that need to be corrected or improved. It should present evidence of the problem to be addressed.

1.3.1 2003 EIS Project Purpose and Need

The Chicago to St. Louis corridor is part of the Midwest Regional Rail System plan to develop and implement a 21st Century regional passenger rail system. The midwest, state-wide, and regional planning context of the HSR is described in Section 2.1.2 of the 2012 Tier 1 FEIS. The purpose of the HSR Program between Chicago to St. Louis is to enhance the passenger transportation network in the 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 within the Chicago to St. Louis corridor are by automobile. According to ridership estimates prepared in 2011, Chicago to St. Louis and Revenue Forecast Report, the mode split for annual person trips in the

corridor is 97.5 percent for automobile, 1.1 percent for air, 1.3 percent for rail (Amtrak), and 0.2 percent for bus. This modal imbalance contributes to high congestion, reduced overall traveler safety, increased air pollutant emissions and energy consumption, travel delays, and increased travel unreliability. To achieve a more balanced transportation system in the corridor, either a new transportation mode must be introduced or improvements to an existing, less frequently used transportation mode, such as passenger rail, must be made. The conditions that would attract travelers from automobile and air travel to a new or improved mode of transportation are reduced travel time, service reliability, increased frequency of trips, and safety.

Passenger rail needs to demonstrate reduced travel times, improved service reliability, increased frequency of trips, and increased track capacity in order to improve the modal balance in the corridor.

1.3.2 2012 Tier 1 Chicago to St. Louis High-Speed Rail Corridor Program – Double Track

Consistent with the 2003 EIS purpose and need, the double tracking HSR Program for the Chicago to St. Louis corridor assessed in the 2012 Tier 1 FEIS/ROD has the purpose of enhancing the passenger transportation network by providing a more balanced use of travel modes by diverting trips made by automobile and air to rail.

From 2007 to 2010, rail passenger ridership between Chicago to St. Louis increased 34 percent (Steer Davies Gleave, 2011). Amtrak, the current passenger rail service provider, operates exclusively on track owned by private freight carriers in the Chicago to St. Louis corridor. The single track between Joliet and St. Louis greatly reduces operational flexibility along the line, often relegating Amtrak trains to wait on passing sidings while freight trains pass. This affects the reliability of Amtrak service, delaying rail passengers and hindering on-time performance.

In addition, the single track configuration constrains train frequency and travel speeds, limiting the ability to add additional daily trips to the corridor at conventional speeds, and the capacity to implement high-speed passenger service. With expected increases in freight traffic in the future, retaining a single track likely would exacerbate the issues with passenger rail performance in the corridor and hinder the ability to increase high-speed passenger rail service between Chicago and St. Louis.

The condition of existing track, switches, and signals, as well as the characteristics of at-grade crossing protection systems, limits train speeds, which in turn affects travel times.

With the proper infrastructure in place to support it, rail is inherently more reliable than other land and air-based travel modes. Automobile travel, which represents 97.5 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 more reliable and safer alternative modes of transportation along the corridor.

1.3.3 Kankakee River Bridge and Track Improvement Project

Other than meeting the 2003 EIS and the 2012 Tier 1 FEIS/ROD double track purpose and need, the purpose of the proposed Kankakee River Bridge and Track Improvement Project is to improve or replace deteriorating or functionally obsolete components. Specific needs to the proposed Project are:

- Kankakee River Bridge MP 52.70 – The existing bridge has an open deck superstructure with deck plate girder spans on stone masonry piers dating back to the 1880s. Current railroad bridge practices require ballasted deck. The additional loading of the ballast deck will require complete replacement of the masonry substructure and superstructure in lieu of complicated modifications needed to maintain existing bridge conditions.

- Water Street Bridge MP 52.66 – Similar to Kankakee River Bridge, the Water Street bridge has an open deck on 1880s stone masonry substructure. Similar reasons apply as to the need for complete replacement of Water Street bridge. In addition, vehicle collision damage to the bridge is evident.

- Forked Creek Bridge MP 52.47 – The existing bridge is a ballasted deck on 1880s stone masonry piers. Constructability issues exist with modifying the stone masonry, hence the need is to replace the bridge with one with new reinforced concrete piers.

- Access roads along the east side of the existing tracks – New 10-foot-wide access roads along the tracks are needed to provide maintenance access and improve maintenance operational efficiency.

- At-grade crossing improvements – Currently, the private crossing (MP 52.42) has stop signs as crossing protection. The East Kankakee River Drive crossing (MP 51.94) and North 1st Street (MP 52.99) use flashers with no gates. The North Kankakee Street grade crossing is protected by two quadrant gates and flashers. In the case of the private crossing, drivers must identify the presence of an on-coming train from either direction by looking and listening and then judge on their own whether enough time remains to cross the tracks before an on-coming train enters the crossing. The flashers at the two public crossings indicate to the driver that a train is on-coming and the crossing should not be used until the train passes. However, without gates, drivers easily have the option to cross the tracks despite the warning provided by the flashers that crossing the track is not safe. While two quadrant gates at North Kankakee Street act as a good deterrent to crossing, drivers in a hurry can still move into the opposing travel lane and go around the gates. In all cases and to different extents, the opportunity exists for mis-judgment or poor judgment on the part of the driver that could result in a fatal motor vehicle/train collision. This risk will rise as population and employment growth in Wilmington increases crossing use and as the number of freight trains increase.

- Culvert improvements at MP 52.92 would involve installation of a 48-inch corrugated steel pipe (CSP) and at MP 51.56 replacement of a 36-inch CSP. Replacement of the existing culverts rather than their extension to accommodate the second track is required because of deterioration of the existing culverts.

1.4 Applicable Regulations

The following statutes and orders apply to the proposed action and were considered during the preparation of this EA:

- Endangered Species Act, 50 CFR Part 17
- Public Law 91-190, National Environmental Policy Act of 1969, 42 U.S. Code (USC) § 4321 et seq., signed January 1, 1970
- Public Law 95-217, Clean Water Act (CWA) of 1977, 33 USC § 1251-1376
- Sections 9 and 10 of the Rivers and Harbors Act of 1899, 33 USC § 401
- Section 106 of the National Historic Preservation Act of 1966, as amended, 16 USC § 470
- Section 4(f) of the U.S. Department of Transportation Act of 1966, 49 USC § 303
- Section 404 of the Federal Water Pollution Control Act, 33 USC § 1344
- Section 6(f) of the Land and Water Conversation Act of 1965, 16 USC § 460
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 USC Chapter 61, 49 CFR part 24
- Executive Order 11988, Floodplain Management, 42 FR 26951, signed May 24, 1977
- Executive Order 11990, Protection of Wetlands, 42 FR 26961, signed May 24, 1977
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, signed February 11, 1994
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, 65 FR 50121, signed August 11, 2000
- Federal Railroad Administration, Procedures for Considering Environmental Impacts, 64 FR 28545 (May 26, 1999)
- Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR Parts 1500-1508, November 29, 1978

- Federal Register, Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule, 49 CFR Parts 222 and 229, April 27, 2005
- Illinois Environmental Protection Act of 1970 (415 Illinois Combined Statutes (ILCS) 5)
- Illinois Interagency Wetland Policy Act of 1989 (20 ILCS 830)
- "Implementation Procedures for the Interagency Wetland Policy Act of 1989" (17 Illinois Administrative Code (IAC) 1090)
- Illinois Department of Transportation Wetlands Action Plan
- Illinois Department of Natural Resources Water Resources, Construction in Floodways of Rivers, Lakes and Streams (17 IAC Ch. I, Part 3700)
- Compliance 70 ILCS 405 Soil and Water Conservation Districts Act.

2.0 Alternatives

There are two alternatives considered for this proposed Project: the No–Build Alternative and a Build Alternative, which would provide a double track operation from north of East Kankakee River Drive to south of North 1st Street, including the Kankakee River Bridge Replacement in Wilmington, Illinois. The following describes each of the alternatives. The Build Alternative is IDOT's and FRA's Preferred Alternative.

2.1 No-Build Alternative

The No-Build Alternative is included in this EA as a baseline against which the impacts of the Build Alternative can be compared. No additional rail improvements are included in the No-Build Alternative beyond those associated with past improvement projects. As such, it would not satisfy the proposed Project's purpose and need.

The existing single mainline track between MP 51.88 and MP 53.19 would remain unchanged and would receive routine maintenance with no additional track construction or track upgrades. Existing at-grade roadway crossings, culverts, bridge structures, and track signal equipment would remain unimproved. The rail line in this area would remain single track.

The No-Build Alternative would not meet the purpose and need of the 2012 Tier 1 FEIS/ROD. The No-Build Alternative would not reduce travel times, improve service reliability, increase the frequency of trips, and increase track capacity, and thus would not contribute to meeting the purpose and need of the Chicago to St Louis HSR Program described in Sections 1.3.2 and 1.3.3.

Existing and anticipated future rail service is shown in Table 2-1. The existing number of passenger trains along the rail line is 10 trains daily with a maximum speed of 65 mph and the existing number of freight train is 5 daily with a maximum speed of 60 mph. The No-Build Alternative would not increase the number of passenger trains and assumes the maximum speed allowed by track improvements presented in the 2004 ROD and the 2014 Joliet to Dwight CE of 75 mph for passenger trains. Maximum Passenger speeds of 110 mph allowed by 2004 ROD and 2014 CE improvements could not occur. Freight traffic is more dependent on markets and demand than capacity, and is expected to grow. Future freight train operation assumptions for the No-Build and Build Alternatives are estimated to be seven morning trains (7am-10pm) and four night trains (10pm to 7am) with train speeds of 60 mph by 2040.

There are no crossing gates at three of the four existing at-grade crossings in the Project study area (East Kankakee River Drive, North 1st Street, and one private crossing). There are two (2) quadrant gates at the North Kankakee Street crossing. Improvements to crossing protection would not be made with the No-Build Alternative.

Table 2-1. Rail Service

Train Traffic Information	Texas Eagle/Tradition Lincoln Service Passenger Train Traffic			High-Speed Rail Lincoln Service Passenger Train Traffic			Freight Trains		
	Existing	Future (2040) No-Build	Future (2040) Build	Existing	Future (2040) No-Build	Future (2040) Build	Existing	Future (2040) No-Build	Future (2040) Build
Daytime train volumes (7am to 10pm)	9	2	2	0	7	14	3	7	7
Nighttime train volumes (10pm to 7am)	1	0	0	0	1	2	2	4	4
Number of locomotives per train	1	1	1	NA	2	2	2	2	2
Number of Cars per train	5	5	5	NA	5	5	50	50	50
Train Speed (mph)[1]	65	75	75	NA	75	75	60	60	60

[1] For much of the Chicago to St. Louis HSR Program Corridor. HSR trains would achieve 110 mph and are currently as high as 79 mph. Curves in the Wilmington area will limit maximum speeds in this part of the HSR Program to those indicated.

2.2 Build Alternative

2.2.1 Physical Features

The Build Alternative extends from north of East Kankakee River Drive (MP 51.88) to south of North 1st Street (MP 53.19) in Will County, Illinois. The Build Alternative generally includes upgrading existing tracks, existing track shift, adding a second mainline track, constructing turnouts, adding PTC signaling, bridge replacement, access roads, culvert replacements, and improving existing grade crossings.

Much of the Build Alternative would be confined to the existing railroad ROW; however, in some locations, constructing the second mainline track and the access roadway would extend the fill and cut sections beyond the existing ROW and additional ROW and construction easements would be needed for grading and re-establishing ditch flow lines. The planned improvements will require approximately 4.08 acres of additional ROW and 1.82 acres of temporary construction easement.

Exhibit 2-1 illustrates the scope of the Build Alternative. Specific elements of the Build Alternative include:

- Kankakee River Bridge – Replace the existing single track Kankakee River bridge and the single bridge approach tracks with a new double track bridge at MP 52.70 with proposed track centers at 20 feet. The existing track would be shifted and replaced to accommodate a new second track on the west side. The existing north and south abutments would be retained while new piers and superstructure would be constructed. The existing Kankakee River bridge is a five-span single track deck plate girder bridge. The new bridge would have two superstructures: an eight-span steel beam bridge structure for the west track and a nine-span steel beam structure for the east track. Portions of the existing abutments at both ends would be removed and reconstructed. The four existing piers would be replaced with eight new piers. As with the existing bridge, stormwater runoff from the new bridge would drain directly into the Kankakee River.

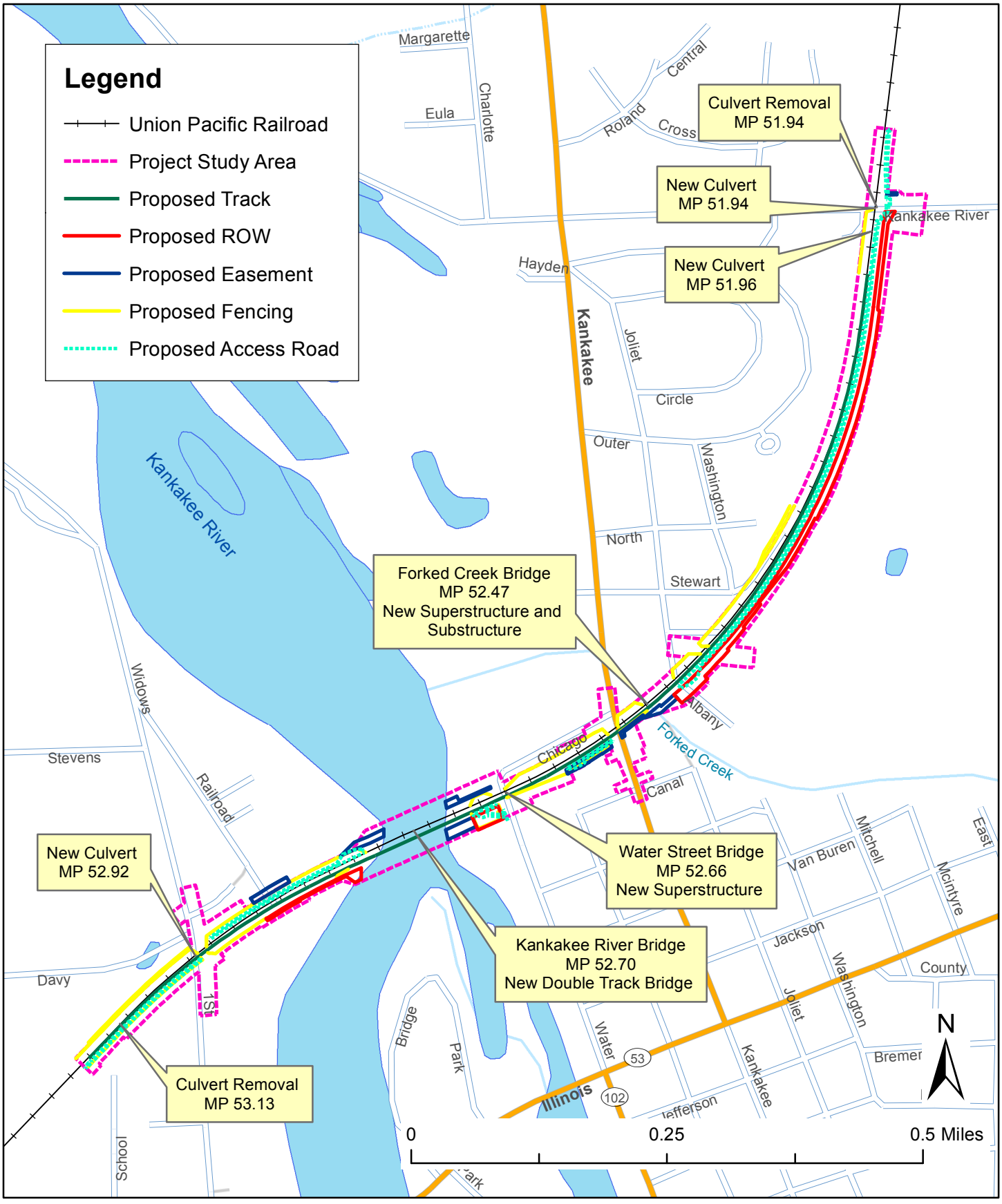
- Water Street Bridge – Replace the existing bridge, including the addition of a second track with 20 feet track centers at MP 52.66. Two new abutments would be constructed and the existing single track deck plate girder and two access road bridges would be replaced with steel through plate girder span to support two tracks. Existing concrete and masonry wingwalls at the south abutment would be repaired. There would be no change to existing horizontal clearance and the proposed vertical clearance would exceed existing vertical clearance.

- Forked Creek Bridge – Replace the existing bridge, including the addition of a second track with 20 feet track centers at MP 52.47. The existing abutments and three piers would be removed and replaced with new abutments on steel piles and two new cast-in-place center concrete piers on spread footing foundation doweled into rock. The existing four-span plate girder bridge would be replaced with a three-span steel beam bridge that supports two tracks. A 2-to-1 fill slope would lead up from the river bottom to short abutments under the bridge ends. The proposed horizontal clearance and vertical clearance would exceed existing clearances. As with the existing bridge, stormwater runoff from the new bridge would drain directly into Forked Creek.

- A new second mainline track and shifting existing track from MP 51.88 to MP 53.19 with associated turnouts and signals work.

- Grading and civil work along the 1.2 mile proposed Project, including 10-foot access roads on one side of the rail line with associated turnarounds. The access roads would be used to access the tracks during construction and future maintenance. Access roads would parallel the track in the railroad ROW for 1.02 miles.

- Fencing would be installed on the west side of the tracks adjacent to development in the East Kankakee River Drive area and from development in the Stewart Street area to Forked Creek. Fencing would be installed on both sides of the UPRR ROW from Forked Creek to the Kankakee River and from the Kankakee River to the southern



Date: 3/2/2015

BUILD ALTERNATIVE FEATURES

Exhibit 2-1

end of the Build Alternative at MP 53.19. Fencing on both sides of the tracks would continue after the southern limits of the Build Alternative under a separate HSR project.

- At-grade crossing improvements are proposed at East Kankakee River Drive (MP 51.94), a private crossing (MP 52.42), North Kankakee Street (MP 52.54), and North 1st Street (MP 52.99). Crossing improvements would include changes in the roadway approach to the crossing to accommodate the second track and a four quadrant gate system. Design and construction of these improvements would be coordinated with IDOT. The East Kankakee River Drive crossing (MP 51.94) at the northern end of the proposed Project limit and the private crossing are candidates for potential closures in the future as a different rail improvement project.

- Culvert improvements at MP 51.94 (24-inch CSP), MP 51.96 (36-inch CSP), and MP 52.92 (48-inch CSP). Two existing culverts on the west side of the tracks and north of Forked Creek would be removed. A new 36-inch CSP culvert would be built in the Stewart Street area paralleling the west side of the tracks.

- Utility relocations resulting from the new track and shifting existing track centers.

The Build Alternative would be built in two phases. Most of the Build Alternative described above would be built during the first phase. The principal components of the second phase would be:

- The maintenance access road south of the Kankakee River Bridge.

- Relocating the existing track north (west) to its permanent location and north of MP 52.4 (approximately East Kankakee River Drive) and constructing the second track.

- Replacing some temporary fencing installed during the first phase with permanent fencing.

- Removal of two culverts in the Forked Creek area and construction of one new culvert in the Stewart Street area.

- A maintenance access ramp at East Kankakee River Drive.

Second phase work would include the purchase of additional ROW and temporary construction easements at that time.

The impact assessment presented in this EA assumes the ROW and temporary construction easements purchased and addresses the impacts of the total proposed Project (both phases) together.

2.2.2 Construction Period Assumptions

In general, the new track would be built first, rail traffic would be shifted to the new track and then improvements to the existing track would be made. Construction work

would be confined to the existing and purchased railroad ROW, temporary construction easements, and track crossing public road ROW.

Important to the minimization of construction period impacts to natural resources is the approach to building the new bridges. The planned approaches to bridge construction are described in the balance of this section.

2.2.2.1 *Kankakee River Bridge*

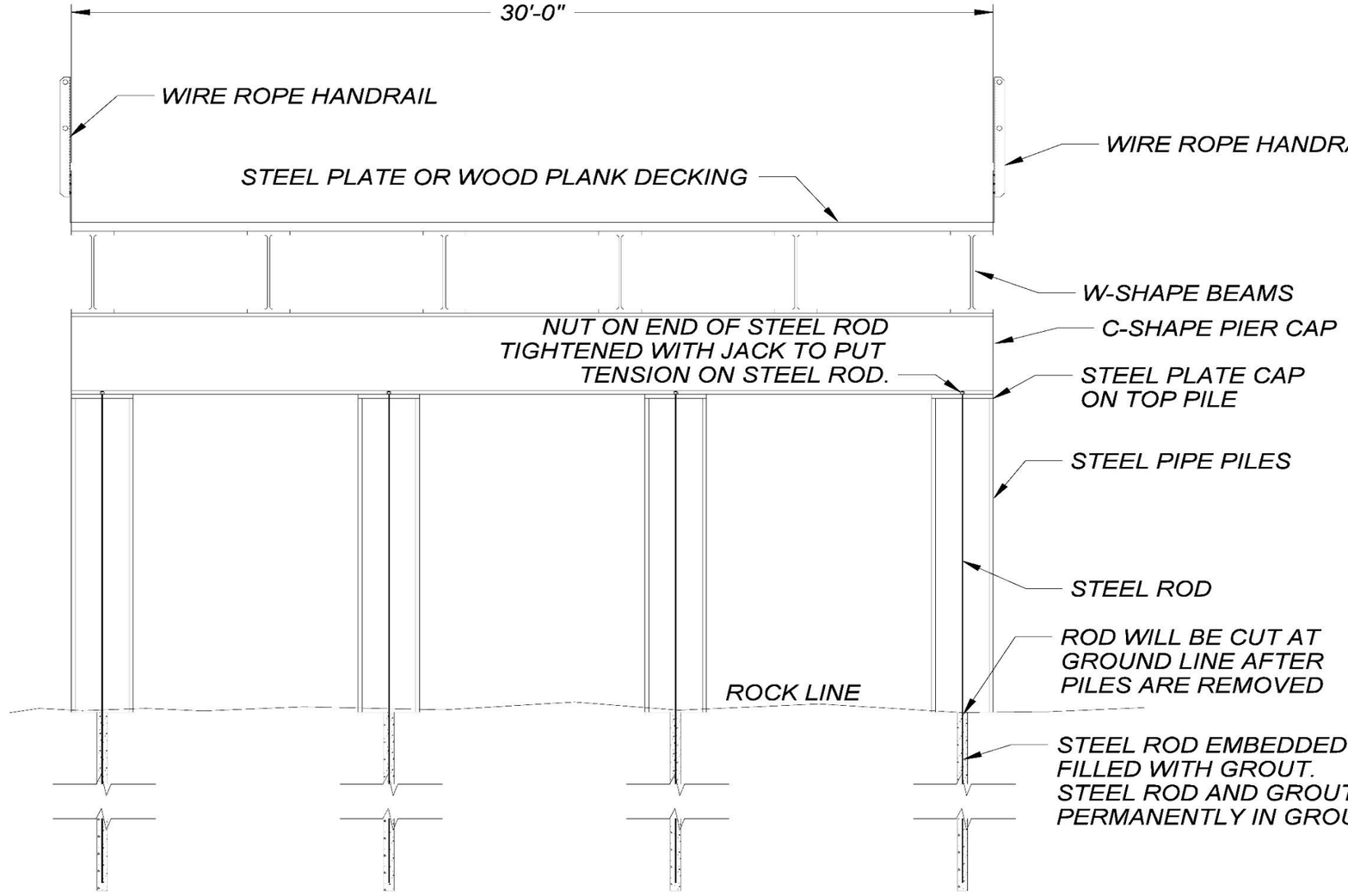
Because of the size of the proposed Kankakee River crossing, a variety of construction practices could be utilized. Construction would be staged as much as possible from adjacent upland areas in order to minimize temporary impacts to the river. The width of the river at the proposed crossing would preclude the ability to construct the bridge from the banks. As a result, it is anticipated that a temporary work bridge would be required. The temporary work bridge would be utilized to set railway structure and to construct piers as needed. Temporary work bridge plans would be developed and would require approval during the permitting process for the Build Alternative.

Bridge Design and Construction Methods

The Build Alternative would require the existing bridge be replaced with a bridge that can accommodate two mainline tracks. Because of the existing movement of freight and passenger rail in the Project study area, one track would remain open during construction. To accomplish this, twin superstructures (bridge spans) would be constructed. Once the first superstructure is constructed, the live track (track used by trains) would be moved to the new superstructure, the old bridge demolished, and the second new superstructure constructed. To help minimize in-stream construction impact, the substructure (eight piers) serving both new superstructures would be built as a single activity.

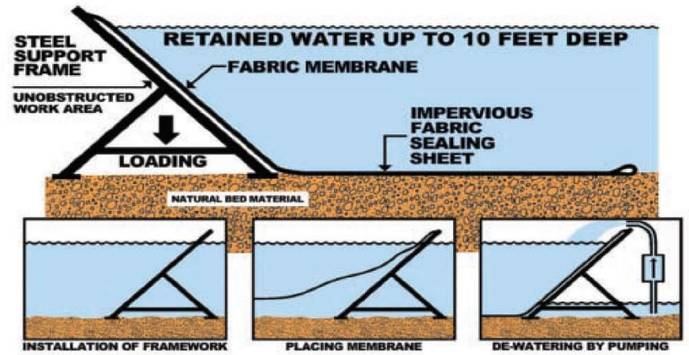
Temporary bridges would be constructed on the east and west sides of the existing bridge (see Exhibit 2-2.) to enable the demolition of the existing bridge and construction of the new bridge. The temporary bridge on the east side would provide a construction area from which the piers for the new bridge would be installed. The temporary bridge on the west side would provide a construction area from which the superstructure and piers from the existing bridge would be demolished, and the second new superstructure would be erected. The temporary bridges would be erected using pipe piles screwed directly into bedrock. Pile driving would not be required, nor would spread footing, thus eliminating vibration impacts and minimizing disturbance of the river bottom and associated sediment.

Cofferdams would be used during the construction of the piers for the new bridge (See Exhibit 2-2). To eliminate vibration and further minimize sedimentation during construction of the permanent substructure, the use of inflatable bladders or similar non-erodible materials is being considered for use as cofferdams. These methods would not require driving sheet piling for the cofferdams.



CONCEPT TEMPORARY BRIDGE SECTION

NO SCALE



COFFERDAM EXAMPLE

NO SCALE

METHOD OF COFFERDAM MAY VARY. METHODS THAT WOULD RESULT IN SEDIMENT RELEASE INTO THE WATERWAY WILL NOT BE ALLOWED.

Prepared by HDR Engineering, Inc. and HNTB Corporation for the Union Pacific Railroad, July 10, 2014

PRELIMINARY AND NOT FOR CONSTRUCTION

Date: 12/29/14

KANKAKEE RIVER BRIDGE TEMPORARY BRIDGE AND COFFERDAM EXAMPLE

Exhibit 2-2

Once the cofferdams are installed, they would be dewatered using pumps to create a dry work environment and the footings constructed. As with the temporary structure, pile driving would not be required because of the presence of bedrock at or near the surface (depending on the location in the river).

In-Stream Construction Sequencing

The sequence for in-stream activities would be as follows:

1. Construct the temporary bridge on the east side of the existing bridge

2. Construct the substructure piers for the new bridges

   Pier construction would be completed in a sequential manner. Once the footing for one pier is constructed and construction begins on pier walls, the cofferdam for the next pier would be installed. In order to maintain navigation openings, it is not expected that more than two cofferdams would be in place at a time.

3. Dismantle the temporary bridge on the east side of the existing bridge

4. Construct the temporary bridge on the west side of the existing bridge

5. Demolish the existing bridge piers

6. Dismantle the temporary bridge on the west side of the existing bridge

All in-stream work would be performed in accordance with U.S. Army Corps of Engineers (USACE), Chicago District – Regulatory Branch Requirements for In-stream Construction Activities. This includes the use of non-erodible cofferdams, filtering of dewatering operations, timber/work mats and the use of low ground-pressure equipment for work in wetlands as much as practical.

2.2.2.2 *Forked Creek Bridge and Water Creek Bridge*

Forked Creek Bridge construction also would be completed in phases. With smaller spans than the Kankakee River bridge, the Forked Creek bridge would have new substructure elements including new abutments on steel piles, fill slopes leading from the creek bottom to the new abutments, and two new cast-in-place center reinforced concrete piles on spread footing foundation doweled into rock. The two fill slopes would be behind the current location of the southern-most pier and behind the locations of the current northern abutment. Instead of erecting a temporary bridge over Forked Creek, an application would be made for a partial causeway permit to place temporary fill in the creek for construction access. Similar to Kankakee River bridge, cofferdams would be used for construction of the two interior piers. To minimize sedimentation during construction of the permanent substructure, the use of inflatable bladders or similar non-erodible materials are being considered for use as cofferdams. These methods would not require driving sheet piling for the cofferdams. Once the cofferdams are installed, they would be dewatered using pumps to create a dry work environment

and the footings constructed. A temporary construction easement of 0.15 acres would be to the east of the existing bridge.

With the Water Street Bridge, two new abutments would be constructed for Water Street Bridge using drilled shafts. Temporary shoring would be required. Water Street would be closed temporarily during construction. The new track bridge would be built first and then the western bridge carrying the second track would be replaced.

2.2.3 Operating Characteristics

As indicated in Section 2.1 and shown in Table 2-1, the proposed Project is not expected to result in a change in the forecast number of freight trains operation in the Chicago to St. Louis corridor. Freight traffic is more dependent on markets and demand than capacity and is expected to grow. The Build Alternative would provide infrastructure improvements so that freight train reliability is improved. As shown in Table 2-1, freight train operation assumptions for the No-Build and Build Alternatives are estimated to be seven morning trains (7am-10pm) and four night trains (10pm to 7am) with train speeds of 60 mph.

Also, as shown in Table 2-1, the forecast number of passenger trains for the Build Alternative includes 16 daytime trains and 2 nighttime trains, as well as the existing daytime Texas Eagle service. This is an increase in the number of existing trains and the number of trains with the No-Build Alternative. Maximum train speeds in the Project study area today are 65 mph. The maximum speed would be 75 mph with the Build Alternative. This is less than the 110 mph planned for much of the HSR Program. Curves would limit the speed in Wilmington.

A quiet zone (area where horn-blowing at grade crossings is not allowed) is not being pursued by the City of Wilmington at this time and thus is not assumed or assessed as a part of the Build Alternative. The Build Alternative does, however, include four quadrant gates, a supplemental safety feature commonly included at grade crossings within a quiet zone. This would help facilitate the establishment of a quiet zone if pursued by the City of Wilmington in the future.

Because the number and speed of passenger trains operating in the Project study area would increase, crossings would be equipped with a higher constant warning time. Currently, flashing lights are activated approximately 20 to 30 seconds prior to a train reaching the grade crossing. For the high-speed passenger trains, crossing gates are planned to activate 80 seconds before a train reaches the crossing.

3.0 Affected Environment, Environmental Consequences and Mitigation

This section presents the environmental setting of the proposed Project, the impacts of the No-Build and Build Alternatives, and potential mitigation measures for notable impacts. The environmental characteristics and impact categories addressed are:

- Physical Environment
  - Air Quality
  - Energy
  - Floodplains and Regulatory Floodways
  - Noise and Vibration
  - Agricultural
  - Aesthetic Environment and Scenic Resources
- Ecological Systems
  - Vegetation and Habitat
  - Wetlands and Waters of the US
  - Water Quality and Water Resources
  - Threatened and Endangered Species
  - Special Lands
- Section 4(f) Resources
- Human Environment
  - Transportation
  - Community and Land Use
  - Demographics
  - Economics and Employment
  - Environmental Justice and Title VI
  - Barriers and Accessibility
  - Public Health and Safety
  - Hazardous Materials and Waste
- Cultural Resources
- Construction Impacts and Mitigation
- Secondary and Cumulative Impacts

3.1 Physical Environment

3.1.1 Air Quality

The Build Alternative would introduce eight passenger high-speed trains. This action would increase diesel locomotive emissions of nitrous oxides(NOx), volatile organic compounds (VOC) and particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) in the Project study area. However, these increases would be small, less than the General Conformity *De Minimis* thresholds and, therefore, insignificant. Local emissions associated with the Build Alternative would not be significant. The Build Alternative would not generate any significant amounts of mobile source air toxic (MSAT) emissions. Regional MSAT are expected to be reduced as a result of the U.S. Environmental Protection Agency (USEPA) regulations for engines and fuels over the next several decades. Greenhouse gas (GHG) emissions would not substantially increase as a result of the Build Alternative. As a result, the Build Alternative is not expected to substantially impact air quality.

3.1.1.1 *National Ambient Air Quality Standards (NAAQS)*

Air quality is a general term used to describe pollutant levels in the atmosphere. Ambient air quality is affected by numerous sources and activities that introduce air pollutants into the atmosphere, such as man-made pollutants resulting from incomplete combustion of fuels including coal, oil, natural gas, and gasoline. With respect to transportation projects, the main sources affecting air pollution concentrations include traffic emissions, mode type, terrain, meteorological parameters, and ambient air quality.

Air quality in the U.S. is governed by the Federal Clean Air Act (CAA) and is administered by the USEPA. As required by the CAA and the 1990 Clean Air Act Amendments (CAAA), the USEPA has established NAAQS (40 CFR part 50) for six major air pollutants (see Table 3-1). These pollutants, known as criteria pollutants, are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM_{10}, $PM_{2.5}$), ozone (O_3), and sulfur dioxide (SO_2). The "primary" standards have been established to protect the public health including the health of "sensitive" populations such as asthmatics, children, and the elderly. The "secondary" standards, intended to protect the nation's welfare, account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

In addition to the criteria pollutants, USEPA also regulates air toxics. MSATs are compounds emitted from highway vehicles and non-road sources such as rail, marine, construction equipment. MSATs are known or suspected to cause cancer or other serious health and environmental effects. Most air toxics originate from human made sources, including on road mobile sources, non-road mobile sources (e.g., trains), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Table 3-1. National Ambient Air Quality Standards

Pollutant [final rule cite]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 FR 54294, Aug 31, 2011]		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		primary and secondary	Rolling 3 month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb (2)	Annual Mean
Ozone [73 FR 16436, Mar 27, 2008]		primary and secondary	8-hour	0.075 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution Dec 14, 2012	$PM_{2.5}$	primary	Annual	12 µg/m^3	annual mean, averaged over 3 years
		secondary	Annual	15 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

(2) The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

(3) Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO_2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Source: http://epa.gov/air/criteria.html July 18, 2014

Also of concern are GHG emissions that trap heat in the atmosphere. These gases are necessary to life as we know it, since they keep the planet's surface warmer than it otherwise would be. Changes in the concentration of certain GHG, due to human activity such as fossil fuel burning, increase the risk of global climate change. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, halogenated fluorocarbons, ozone, perfluorinated carbons, and hydrofluorocarbons. Carbon dioxide (CO_2) is the primary GHG of concern from the fossil fuel combustion, such as occurs in locomotive and automobile engines.

The potential air quality effects of the Build Alternative include criteria pollutant and air toxic concentrations, and GHG emissions. The criteria pollutants of concern and considered in this assessment are CO, PM_{10}, and $PM_{2.5}$ as a result of changes in diesel locomotives emissions, as well as O_3 precursors (VOCs and NOx). The effect on air toxics and GHG, as a result of emissions from diesel locomotives, also was considered.

3.1.1.2 *Existing Conditions*

USEPA publishes a list of all geographic areas in compliance with the NAAQS, as well as those areas not in attainment of the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis. Areas classified as "attainment areas" are in compliance with the applicable NAAQS. Areas once classified as nonattainment but have since demonstrated attainment of the NAAQS are classified as "maintenance areas." Areas not in compliance with the NAAQS are classified as "nonattainment areas". The Build Alternative is in Will County. The attainment status of Will County for each pollutant is provided in Table 3-2. As shown, Will County is classified as attainment area for all pollutants except ozone. Will County is part of the Chicago-Gary-Lake County, IL-IN 8-Hour Ozone Non-Attainment Area. Will County, as part of the Chicago-Gary-Lake County, IL-IN $PM_{2.5}$ Non-Attainment Area, was previously not attaining to the $PM_{2.5}$ annual (1997) NAAQS, but was redesignated to the maintenance status for this pollutant in October 2013.

CAAA requires Federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). A SIP is a plan that provides for implementation, maintenance, and enforcement of NAAQS. Prior to approval or funding by a federal agency, a proposed project must demonstrate compliance with USEPA's Conformity Rule by determining that it would not cause or exacerbate an exceedance of a NAAQS. As a project being developed under the FRA, the Build Alternative falls under the General Conformity Rule, which requires a conformity determination for each pollutant.

USEPA specified significant threshold values in 40 CFR 93, paragraph 153 as a minimum threshold for which conformity determination must be performed. This significance rate is called *de minimis* level. General Conformity *de minimis* levels applicable to the Build Alternative are presented in Table 3-3.

Table 3-2. Project Study Area Federal Attainment Status

Pollutant	Will County, IL[1]	Classification	Comments
Carbon Monoxide (CO)	Attainment	—	—
Lead (Pb)	Attainment	—	—
Nitrogen Dioxide (NO_2)	Attainment	—	—
Particulate Matter (PM_{10})	Attainment	—	—
Particulate Matter ($PM_{2.5}$)	Maintenance	Former Subpart 1	Redesignated 10/02/2013; 1997 $PM_{2.5}$
Ozone (O_3)	Nonattainment	Marginal	8-hour 2008 Ozone standard
Sulfur Dioxide (SO_2)	Attainment	—	—

[1]Within the Chicago-Gary-Lake County, IL-IN area
[2] Cook and Grundy Counties, part of the bigger project, share the same status
Source: http://www.epa.gov/airprogm/oar/oaqps/greenbk/index.html, July 17, 2014

Table 3-3. General Conformity *De Minimis* Levels for Will County[1]

Pollutant	*De Minimis* Level
Volatile Organic Compounds (VOCs)	100 tons per year
Nitrogen Oxides (NO_x)	100 tons per year
$PM_{2.5}$ (Direct Emissions)	100 tons per year

[1]Within the Chicago-Gary-Lake County, IL-IN area
Source: http://www.epa.gov/air/genconform/deminimis.html, July 17, 2014

For Ambient Air Quality, the last three years of available monitored data from the area monitors are shown in Table 3-4. Only ozone and $PM_{2.5}$ concentrations are currently monitored in Will County, concentrations for other pollutants were obtained from the neighboring counties, Cook County for NO_2 and PM_{10} and Peoria County for SO_2.

Table 3-4. Will County Air Quality Monitored Data (2011-2013)

Pollutant	Time Period	Concentration			Unit	Station
		2011	2012	2013		
Ozone	First Highest 8 hour	0.091	0.080	0.070	PPM (parts per million)	36400 S. Essex Rd., Braidwood
	Second Highest	0.074	0.076	0.068	PPM	
	Third Highest	0.063	0.074	0.067	PPM	
	Fourth Highest	0.061	0.074	0.066	PPM	
	# of Days Standard Exceeded	1	0	0		
$PM_{2.5}$	Maximum 24 Hour	28.8	24.5	26.9	µg/m³ (micrograms per cubic meter)	36400 S. Essex Rd., Braidwood
	Second Highest	25.8	24.7	23	µg/m	
	98th Percentile	26	24	23	µg/m³	
	Average Annual	10.4	9.3	9.3	µg/m³	
NO_2	1-Hour Maximum	79	69	82	PPB (parts per billion)	1820 S. 51 Street, Cicero
	Second Maximum	71	66	76	PPB	
	98th Percentile	62	58	64	PPB	
PM_{10}	Maximum 24 Hour	92	53	71	µg/m³	50th Street and Glencoe, McCook
	Second Highest	82	41	67	µg/m³	
SO_2	First Highest 1 hour	53	58	42	PPB	Hurlburt and Macarthur, Peoria
	Second Highest	48	54	38	PPB	
	99th Percentile	45	44	32	PPB	

Source: http://www.epa.gov/airdata/ad_rep_mon.html, July 11, 2014

As these data show, no exceedances of the NAAQS for $PM_{2.5}$, PM_{10}, NO_2, and SO_2 standards were measured in the area. One measurement exceeding the current ozone standard was monitored in Will County in 2011. This exceedance did not constitute a violation of the standard because the ozone 8-hour NAAQS of 0.075 ppm is a three-year average of the fourth highest concentration values. According to the monitoring data, the standard (0.075 ppm) in Will County was not exceeded in the 2011-2013 period.

3.1.1.3 *Potential Impacts*

Pollutants that can be traced principally to diesel locomotives and construction equipment are relevant to the evaluation of the Build Alternative's impacts; these pollutants include CO, VOC, NOx, O_3, PM_{10}, and $PM_{2.5}$. Transportation sources account for a small percentage of regional emissions of SO_2 and Pb; thus, a detailed analysis is not required. The Build Alternative's elements that could adversely affect air quality levels include diesel locomotive emissions and emissions from construction.

VOC and NOx emissions from these sources are a concern primarily because they are precursors in the formation of ozone and particulate matter. Ozone is formed through a series of reactions that occur in the atmosphere in the presence of sunlight. Since the reactions are slow and occur as the pollutants are diffusing downwind, elevated ozone levels often are found many miles from the sources of the precursor pollutants. Therefore, the effects of VOC and NOx emissions generally are examined on a regional or "mesoscale" basis.

PM_{10} and $PM_{2.5}$ impacts are both regional and local. A major portion of particulate matter, especially PM_{10}, comes from disturbed vacant land, construction activity, and paved road dust. $PM_{2.5}$ also comes from these sources. Motor vehicle exhaust, particularly from diesel construction vehicles, is also a source of PM_{10} and $PM_{2.5}$. PM_{10}, and especially $PM_{2.5}$, also can be created by secondary formation from precursor elements such as SO_2, NO_X, VOCs and ammonia (NH_3). Secondary formation occurs because of a chemical reaction in the atmosphere generally downwind at some distance from the original emission source. Thus, it is appropriate to predict concentrations of PM_{10} and $PM_{2.5}$ on both a regional and a localized basis.

CO impacts are generally localized. Even under the worst meteorological conditions and most congested traffic conditions, high concentrations are limited to a relatively short distance (approximately 300 feet) of heavily traveled roadways or rail corridors. The Build Alternative would not change automobile or truck traffic patterns within the Project study area. As a result, vehicular impacts are not analyzed. However, emissions from construction vehicles and diesel locomotives also can be major sources of CO. Consequently, it is appropriate to predict concentrations of CO on both a regional and a localized or "microscale" basis for the Build Alternative within the Project study area.

MSAT impacts are both regional and local. On December 6, 2012, FHWA released Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents. According to this document, regardless of the alternative chosen, MSAT emissions likely will be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce annual MSAT emissions by more than 80 percent between 2010 and 2050. Local conditions may differ from these national projections. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for growth in vehicle-miles traveled [VMT]) that MSAT emissions in the Project study area are likely to be lower in the future in nearly all cases. The Build Alternative would not result in changes that would cause a significant increase in MSAT impacts of the Build Alternative from that of the No-Build Alternative. As such, the Build Alternative has not been linked with any special MSAT concerns.

Air Quality during Proposed Project Operation

Under the current schedules, there are 15 trains per day operating over this section of the railroad, including 10 passenger trains and five UPRR freight trains (a combination of local and through trains). These trains and trains with the Build Alternative and No-Build Alternative are shown in Table 2-1 in Section 2.1.

With the Build Alternative, as one part of the Chicago to St. Louis HSR Program, the number of passenger trains would increase from 10 to 18. With the Build Alternative, the speed of 8 out of 10 daily passenger trains would be 110 mph in much of the HSR Program corridor. The speed of the other two trains would be 79 mph. The eight additional passenger trains would operate at 110 mph in much of the HSR Program corridor. Under existing conditions all 10 daily passenger trains operate at 79 mph in much of the HSR Program corridor. The higher speed trains would each have two locomotives instead of one. As indicated in Table 2-1 in Section 2.1, passenger train speeds would be lower in the Project study area because curves in the Wilmington area would limit maximum speeds.

The Build Alternative would not result in change in the number of freight trains operating in this part of the Chicago to St. Louis corridor. Freight traffic is more dependent on markets and demand than capacity and is expected to grow. The number of freight trains is estimated to increase to 11 per day in the future with either the No-Build Alternative or the Build Alternative. Freight trains currently operate and would continue to operate at 60 mph.

Potential Regional Impacts

While the Build Alternative would increase diesel locomotive emissions because of increased speeds (and the number of locomotives to propel the trains) and the increased number of passenger trains, these emissions would be in part off-set by decrease in travel times and smaller emissions from newer locomotives. The number of freight trains would increase over existing conditions under both future conditions, the No-Build Alternative or the Build Alternative.

The Chicago to St. Louis HSR Program would pass through the Chicago-Gary-Lake County, IL-IN 8-Hour Ozone Non-Attainment Area from Union Station in Chicago to Kankakee Street in Godley, Illinois south of the Build Alternative, a distance of 59.8 miles.

The regional emission change resulting from the increase in trains along the HSR Program corridor within the non-attainment area were quantified to ensure that Build Alternative-related emission increases do not exceed the applicable General Conformity *de minimis* thresholds.

Table 3-5 presents the estimates of the regional emissions generated by the Build Alternative. They represent an update of Table 5.7-1 of the 2012 Tier 1 FEIS. They assume the train numbers for existing conditions, the No-Build Alternative, and the Build Alternative presented in Table 2-1. Emissions were estimated separately for the line-haul freight trains and for passenger/commuter trains using information in Table 2-1 and appropriate USEPA emission factors. Based on these estimates, changes in emissions of pollutants of concern from the No-Build Alternative to the Build Alternative are below the applicable thresholds and General Conformity rule does not apply.

Table 3-5. Emissions Generated by the Proposed Project within the Chicago-Gary-Lake County, IL-IN Non-Attainment Area (tons/year)

Scenario	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	CO_2
Existing Conditions	22.1	68.0	3.7	3.2	3.1	22.7
No-Build Alternative	49.4	38.6	1.7	5.8	5.6	43.8
Build Alternative	52.9	45.5	1.9	6.8	6.6	53.7
Change	*3.5*	*6.9*	*0.29*	*1.04*	*1.01*	*9.9*
De minimis Threshold	*NA*	*100*	*100*	*NA*	*100*	*NA*
Threshold Exceeded?	*NA*	*No*	*No*	*NA*	*No*	*NA*

HSR Program Potential Emissions Reductions

As discussed in Section 6.2.2.1 of the 2012 Tier 1 FEIS, with the HSR Program 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 a range of three hours and 51 minutes to four hours and 10 minutes. The HSR Program could therefore result in a 35- to 39-minute travel time savings compared to not implementing the HSR Program. With the HSR Program, four additional passenger round trips would be operated daily. The HSR Program 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 resulting from train interference that are not addressed without the HSR Program.

These improvements would increase passenger rail proportion of travel in the HSR Program corridor, as indicated in Table 3-6 (presented in Table 5.3-1 in the 2012 Tier 1 FEIS). Travel by rail is the most energy efficient mode of transportation. Thus, while the HSR Program would increase passenger rail locomotive emissions, there would be an overall decrease travel emissions along the HSR corridor. The completion of the proposed Kankakee River Bridge and Track Improvements project would contribute to this overall HSR Program emissions benefit.

Table 3-6. HSR Program Annual Passenger-Miles of Travel (millions)

Alternative	Rail	Automobile	Bus	Air	Total
Existing (2010)[1]	114	6,499	26	140	6,779
	1.7%	95.8%	0.4%	2.1%	100.0%
No HSR Program (2030)	203	7,871	35	236	8,345
	2.4%	94.4%	0.4%	2.8%	100.0%
With HSR Program (2030)	328	7,753	31	214	8,326
	3.9%	93.1%	0.4%	2.6%	100.0%

[1] As noted in Section 1.3.1, according to ridership estimates prepared in 2011, Chicago to St. Louis and Revenue Forecast Report, the mode split for annual person trips in the corridor was 97.5 percent for automobile, 1.1 percent for air, 1.3 percent for rail (Amtrak), and 0.2 percent for bus.

Potential Local Impacts

The Build Alternative is part of the Chicago to St. Louis HSR Program. The 2012 Tier 1 FEIS for the HSR Program found the potential for local air quality impacts to be insignificant. As such, the Build Alternative's local air quality impacts also should be insignificant.

Along the Rail Right-of Way. The Build Alternative would increase diesel emissions along the UPRR tracks. However, the speed increase (and therefore, the shorter residence time) and the purchase of newer locomotives with stricter emission limits would offset this increase at least for CO. Table 3-5 shows that emissions would increase with the Build Alternative in the future compared to the No-Build Alternative, but these increases would be small.

VOC and NOx are ozone precursors and would be of most concern on a regional and not on a local scale as ozone precursors in the non-attainment area. VOC impacts of the Build Alternative are additionally addressed under potential MSAT impacts.

NOx impacts along the UPRR ROW were modeled to estimate the possible impact of the Build Alternative on the closest sensitive land uses. A conservative dispersion modeling assumed three trains, two high-speed and one freight, within one hour and used AERMET, a USEPA screening model, to simulate locomotive emission impacts on receptors along the ROW. The highest resultant impact was very small, 2 percent of the 1-hour NO_2 NAAQS and 4 percent of the background concentrations. Background concentrations were estimated for the representative station at 1820 S. 51 Street, Cicero (see Table 3-4). The resultant total concentrations were estimated to be well below the one-hour standard.

CO emissions have decreased dramatically in the recent decades as a result of aggressive USEPA regulations for vehicular emissions. These regulations brought the concentrations of CO down to less than 20 percent of the CO eight-hour NAAQS, the most restrictive CO standard. The CO emission increase as result of the Build Alternative would be small. If emissions from the added trains are compared with the equivalent emissions from passenger cars, it would result in emissions of about 40 extra passenger cars. According to IDOT CO Screen for Intersection Modeling (COSIM) version 4.0 (June 2013), traffic volumes fewer than 5,000 cars would not create a potential for a CO violation.

Particulate matter local (hot-spot) analysis for the rail projects according the USEPA Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas (USEPA, 2013) should be conducted only for the new rail terminals with significant number of diesel vehicles congregated at a single location or for an expanded terminal with significant increase in number diesel vehicles at one location. Additionally, local air quality analysis should be conducted for a project that is affecting the area or location of violation or a possible violation of the PM NAAQS. Although the USEPA guidance applies to Federal Transit Administration funded or approved rail projects, it provides a useful indication of the potential for

impact with this proposed FRA-funded project. The Build Alternative would introduce eight additional high speed passenger trains a day, but these trains would not be congregated at a single location. The Build Alternative is in a $PM_{2.5}$ maintenance area, but not near a potential hot-spot site for $PM_{2.5}$. As such, neither of the conditions for a potential $PM_{2.5}$ impact listed in the USEPA guidance would occur with the Build Alternative.

Therefore, the Build Alternative would not produce any significant air quality impacts along the UPRR ROW.

At-Grade Crossings. With both the Build Alternative and No-Build Alternative and their higher passenger train speeds, crossing gates would be activated as much as 90 seconds before a train reaches a gate and be raised as soon as the passenger trains pass through the crossing. Crossing gates are currently activated 20 to 30 seconds prior to a train reaching the crossing. As noted earlier, the Build Alternative as a part of the Chicago to St. Louis HSR Program would introduce eight new passenger trains.

Given the short length and rapid passages of passenger trains, it is unlikely that motor vehicle delays associated with longer gate down times and the increased number of passenger trains would result in any substantial impact on air quality levels. Allowing for complete passage of the train and brief periods to complete the lowering and raising of gates, delays of approximately 110 seconds per train passage would be typical for a motor vehicle approaching an at-grade crossing just as the gates are lowered. Delays would be shorter for motor vehicles approaching after initial closure of the crossing. By comparison, average motor vehicle delays of up to 30 to 75 seconds per cycle are typical for multi-phase stoplight-controlled street intersections and the cycles go on throughout the day. According to the IDOT COSIM version 4.0 (Peters, 2013), intersection queues of more than 300 to 600 vehicles may create a potential for CO exceedance. The grade crossings in the Project study area carry only local traffic within a small community so few motor vehicles would be delayed by gate closures. In addition, assuming 18 high-speed passenger train trips per day, passenger train passages would be responsible for crossing closures lasting about two percent of each 24-hour day. The increase in crossing closures would be even less notable compared to the No-Build Alternative. Thus, the Build Alternative would not result in any substantial impact on the air quality levels at grade crossings.

The No-Build Alternative also would see increases in gate closure times with six additional freight trains, but this increase is not a part of the Build Alternative.

In summary, it can be concluded that local emissions associated with the Build Alternative would not produce any significant local air quality impacts.

Potential MSAT Impacts

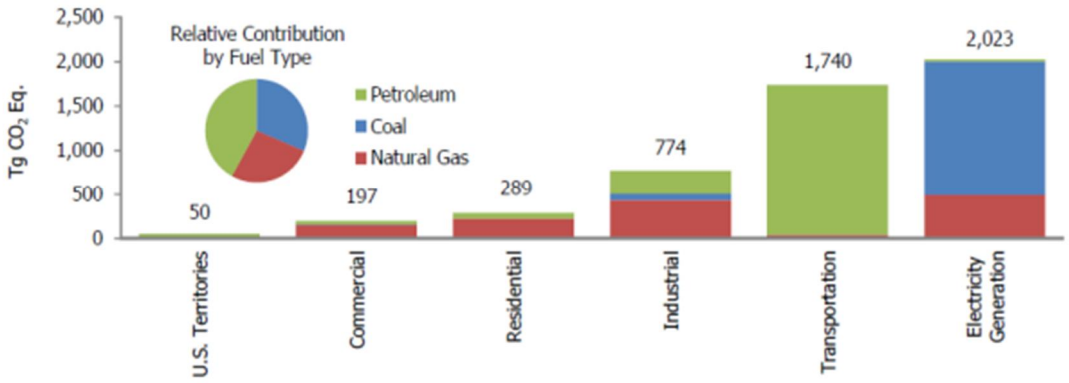
The Build Alternative was determined in Section 3.1.1.3 to generate minimal air quality impacts for CAAA criteria pollutants. Moreover, USEPA regulations for engines and fuels will cause overall MSAT emissions to decline substantially over the next several

decades. Based on regulations now in effect, an analysis of national trends with USEPA's MOVES model forecasts a combined reduction of more than 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by more than 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emission increases from the Build Alternative.

Greenhouse Gas (GHG) Emissions

The majority of GHG emissions from transportation result from the combustion of fossil fuels. The burning of fossil fuels produces carbon dioxide (CO_2) emissions, the major GHGs from transportation. As of 2012, the latest year used in the USEPA's national GHG inventory (USEPA, 2014), transportation generated approximately one-third of GHG emissions in the U.S., higher than every other sector except power generation (see Exhibit 3-1.)

Exhibit 3-1. CO2 Emissions from Fossil Combustion by Sector and Fuel Type (2012)



Source: USEPA GHG Inventory, 2014

The GHG emissions analysis (see Table 3-5) indicates that the Build Alternative would result in a small increase in regional GHG emissions compared to the No-Build Alternative. The estimated increase associated with the additional eight high-speed trains would constitute approximately 23 percent of rail emissions over the No-Build Alternative and a much smaller increase over the total regional GHG emissions. The regional increase would be slight and, therefore, would not be significant. The Build Alternative would not result in a substantial increase of regional GHG emissions over the No-Build Alternative. As shown in Table 5.7-2 of the 2012 Tier 1 FEIS, from the perspective of the entire HSR Program corridor, there would be a reduction in GHG emissions. The HSR Program would increase passenger rail proportion of travel in the HSR corridor. Since travel by rail is the most energy efficient mode of transportation, an overall decrease in GHG emissions of 20,150 metric tons per year (from 1,980,270 to 1,960,130) would occur in the HSR corridor. The completion of the proposed Kankakee River Bridge and Track Improvements project would contribute to this overall HSR Program GHG emissions benefit.

Construction Impacts

Construction air quality impacts are temporary in nature and localized to the area of construction. As a rule, short-term construction (shorter than three years) does not warrant a detailed air quality analysis. Possible air quality impacts from construction may be caused by dust from earth-moving activities and by exhaust emissions generated by equipment during construction. State and local regulations regarding dust control and other air quality emission reduction controls would be followed. It is unlikely that the construction of the Build Alternative, which would follow state and local regulations regarding construction activities and equipment, would cause a violation of the applicable standards. UPRR would comply with local regulations to suppress dust emissions as necessary.

Air pollutant emissions also would be generated during the construction phase of the Build Alternative. However, these emissions are likely to be minor given the limited approximately nine-month duration of the construction activities. In addition, the operational emission reductions of the entire HSR program (shown inTable 3-6) would ultimately offset the construction emissions associated with the Kankakee River Bridge and Track Improvements project.

3.1.1.4 *Mitigation (Construction and Operation)*

To control local air pollution impacts during Build Alternative construction, coverage under the Illinois General Permit could be required for any portable bituminous and concrete plants that would be used in construction. However, these materials would likely originate from existing permitted plants and would be delivered to the construction site.

Construction mitigation includes strategies that reduce engine activity or reduce emissions per unit of operating time, such as reducing the numbers of trips and extended idling. Verified emissions control technology retrofits or fleet modernization of engines for construction equipment could be appropriate mitigation strategies.

State and local regulations regarding dust control and other air quality emission reduction controls also would be followed. In addition, Best Management Practices (BMPs) would be utilized prior to, during, and after construction for dust suppression.

The Build Alternative is part of the Chicago-St. Louis HSR Program. The 2012 Tier 1 FEIS/ROD concluded that the HSR Program would offset the increase in rail emissions with reduction in the regional vehicular emissions. With the introduction of the additional high-speed trains, regional rail emissions are expected to increase insignificantly.

Long-term air quality on both a microscale and mesoscale levels is not expected to be significantly affected by operation of the Build Alternative. Moreover, USEPA regulations for engines and fuels would cause overall MSAT emissions to decline dramatically over the next several decades.

3.1.2 Energy

As documented in the 2012 Tier 1 FEIS (Table 4.3-1), energy consumption occurs with the four basic transportation modes used for travel in the Chicago to St. Louis HSR Program corridor – air, rail, bus, and automobile. Currently (2010), Amtrak trains account for about 1.7 percent of person-miles traveled in the corridor, while automobile traffic accounts for approximately 95.8 percent. Airlines account for about 2.1 percent of travel and buses account for 0.4 percent of travel.

Rail is a more energy-efficient mode than the predominate automobile travel, accounting for 0.7 percent of energy consumption for 1.7 percent of the person-miles, where automobile travel accounts for 97.6 percent of energy consumption for 95.8 percent of the person-miles, as indicated in 2012 Tier 1 FEIS Table 4.3-1. Since rail capacity can be increased at a relatively small incremental cost, any substantial increase in rail ridership that would arise from implementation of the HSR Program would result in conservation of travel-related energy. As shown in Table 3-6, with the HSR Program, the person-miles traveled by the more energy-efficient rail are expected to increase to 3.9 percent (328 million passenger miles traveled of 8,326) in 2030 of all corridor travel from the existing 1.7 percent. In addition, new locomotives that would be used under the HSR Program are designed to be more energy efficient than current locomotives. The Build Alternative would contribute to this overall HSR Program energy saving benefit.

Passenger rail service under the No-Build Alternative would be a continuation of the existing five daily round trips between Chicago and St. Louis. Although increased rail ridership could result from the normal travel growth in the corridor, the percent of person-miles traveled in the HSR Program corridor by rail with accompanying energy savings would not be as great without the service improvements that are a part of the Build Alternative. With the No-Build Alternative, rail travel would be 2.4 percent (203 million passenger miles traveled of 8.345).

Construction of the Build Alternative would require the consumption of energy for processing and delivering materials, construction activities, and maintenance for the new rail constructed within the proposed Project's limits. Energy consumption by vehicles in the Project study area could increase during construction as a result of possible traffic delays or temporary daytime closures. The No-Build Alternative would not require double track construction with associated other improvements that are a part of the Build Alternative. Thus, the additional energy consumption described for the Build Alternative would not occur.

The Build Alternative would increase the efficiency of the current transportation network by increasing rail use and thus provide a more balanced use of the overall transportation network. This would result in less vehicular energy consumption for travel with the Build Alternative when in association with the balance of the HSR Program. Table 5.3-2 of the 2012 Tier 1 FEIS indicates that the HSR Program would reduce annual transportation energy consumption in 2030 for the Chicago to St. Louis corridor from 28,697 billion British Thermal Units (BTUs) with the No-Build Alternative to 28,426 billion BTUs. In the long term, post-construction operational energy

requirements should offset construction and maintenance energy requirements and result in a net savings in energy use.

3.1.3 Floodplains and Regulatory Floodways

No adverse impacts to floodplains or regulatory floodways are expected for the Forked Creek and Kankakee River floodplains. Federal Protection of floodplains is afforded by Executive Order 11988, "Floodplain Management," and by implementation of federal regulations under 44 CFR Part 9. These regulations direct federal agencies to undertake actions to avoid impacts on floodplain areas by structures built in flood-prone areas. A floodplain is a low land adjacent to a river, lake, or ocean. Floodplains are designated by the rarity of a flood that is large enough to inundate them (i.e., 100-year).

3.1.3.1 *Existing Conditions*

Listed below are Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels within the Project study area. Appendix A includes FIRM panels and shows the floodplains for the Project study area. There are two, associated with Forked Creek and the Kankakee River. The FIRM panels showing Project study area floodplains are:

- Panel 17197C0409E in Will County, Illinois and Incorporated Areas – The existing rail and proposed double track crosses Forked Creek. The crossing area is indicated as Zone AE, a High Risk Special Flood Hazard Area.

- Panel 17197C0417E in Will County, Illinois and Incorporated Areas – The existing rail and proposed double track crosses Kankakee River. The crossing area is indicated as Zone AE, a High Risk Special Flood Hazard Area.

- Panel 17197C0416E in Will County, Illinois and Incorporated Areas – Within this particular panel, the existing rail and proposed double track are within Zone X unshaded areas – areas of minimal flood hazard, which are the areas outside the Special Flood Hazard Area and higher than the elevation of the 0.2 percent annual chance flood (also referred to as the 500 year floodplain).

3.1.3.2 *Potential Impacts*

The No-Build Alternative would result in no impacts to floodplains or regulatory floodways. The potential impacts of the Build Alternative to floodplains were discussed as a part of project section 3 in the 2012 Tier 1 FEIS. For section 3, 18 floodplain crossings were identified with a total floodplain impact of 55.5 acres. These crossings and the associated impact are included this Tier 2 proposed Project's impact on the Forked Creek and Kankakee River floodplains.

At Forked Creek, the replacement bridge would be longer. The three existing piers would be replaced by two new piers (both in the floodway). The abutments at each end of the existing bridge would be replaced. A 2-to-1 fill slope would lead up from the river bottom to short abutments under the bridge ends. In association with the reconfiguration of the abutments, 2,500 cubic yards of fill would be introduced to the

floodplain and floodway at the south end of the replacement bridge and equivalent fill would be removed at the north end. Hence, there would be minimal increase in the fill volume in the floodplain at Forked Creek. The recommended replacement structure and associated fill would not result in a rise of the 50-year and 100-year water surface elevation.

At the Kankakee River Bridge minimum fill volume would be placed in floodplain or floodway. The four existing piers in the floodway would be replaced with eight new piers with similar sizes. The existing vertical bridge abutments, which currently define both the floodplain and floodway under the existing bridge, would be retained. Assuming a uniform channel bottom, an estimated 0.80 acre-feet volume of fill would be placed in the floodplain with minor impacts to the floodway. The additional fill would be primarily associated with the new bridge piers.

An increase of 0.10 feet flood height increase is considered an impact. Given that the replacement bridges would continue to span the floodplain and floodway, the changes in the capacity of the bridge openings to carry floodwaters are expected to be minimal, and changes in the capacity of the floodplain to store water are expected to be confined to the additional bridge piers associated with the replacement Kankakee River Bridge, an increase in the flood height of more than 0.10 foot and an increase in flood limits is unlikely in either floodplain. In addition, the 100-year event would not cause overtopping of the railway. No significant adverse impacts on the natural and beneficial floodplain values would be expected; no increase would result in any significant change in flood risks or damage; and no increase would have significant potential for interruption or termination of emergency service or emergency evacuation routes.

A stormwater permit would be required for all hydraulic structures. Permits also would be required from the USACE and the Illinois Department of Natural Resources (INDR) Office of Water Resources (OWR) for all structure replacements and/or extensions within federal and state jurisdictional streams and waterways. For changes in bridge substructure within the floodway, local authorities would be consulted with respect to tolerable limits.

3.1.3.3 *Mitigation*

The proposed or modified drainage structures would be designed per the IDNR OWR Part 3708 rules, and construction of these drainage structures and track improvements would result in an acceptable change in the capacity of the floodway to carry flood waters, per IDNR OWR Part 3708 rules. Hydraulic studies would be completed as part of the IDNR OWR permit process during final design. The final design would incorporate measures to avoid, minimize, and mitigate any flood height increase. Given the minimal expected change, compensatory storage is not expected to be needed at the two floodplains and if it were needed, it could be contained within side ditches of the railroad.

3.1.4 Noise and Vibration

The assessment of the potential for the proposed Project to cause noise and vibration impacts was prepared using procedures in the FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment* guidance manual (FRA, 2012). The assessment included evaluating noise and vibration from train operations, which includes both rolling stock noise along the rail line and horn noise at at-grade crossings. It is important to note that the levels of noise and vibration generated by rail systems do not rise to the level of concern for health or safety; rather they are evaluated based on their potential to cause annoyance in adjacent communities.

Following FRA procedures, a conservative screening procedure was first used to identify noise and vibration sensitive receptors where noise and vibration impacts might occur. Receptors within the screening distance were then evaluated using a general assessment level of analysis. At receptors where impacts were identified in the general assessment, a detailed analysis was conducted.

3.1.4.1 *Noise Evaluation*

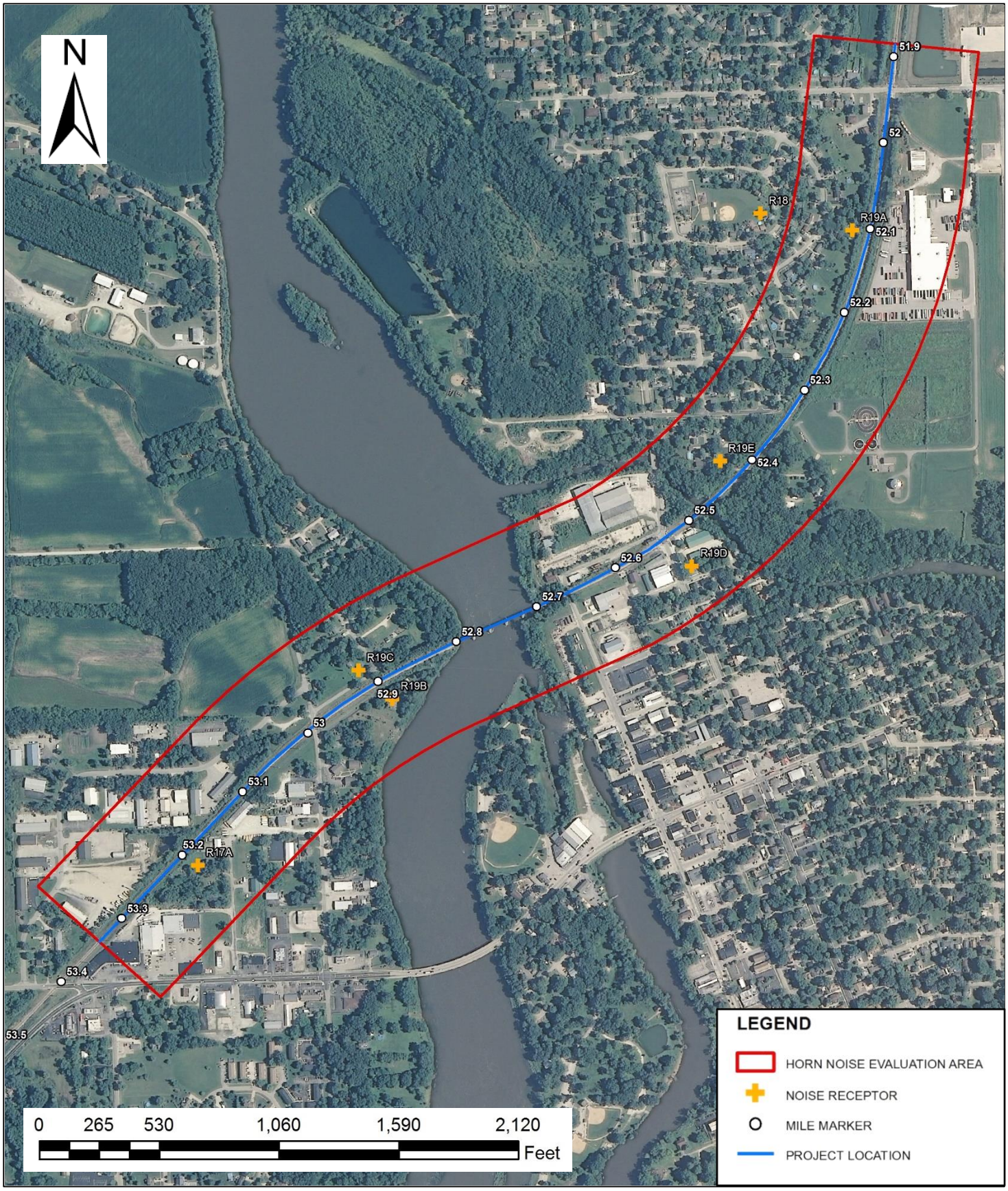
Screening Noise Evaluation

The FRA screening procedure identifies a screening distance for both obstructed and unobstructed urban conditions and for quiet suburban/rural areas. Given the generally suburban nature of the Project study area, the quiet suburban/rural area screening distance of 500 feet was used to identify sensitive receptors. Sensitive receptors identified in the Project study area include single-family residences and a park (Children's Memorial Park). This park is beyond the 500-foot screening distance, but was assessed in the 2011 EA and is considered again here to be consistent with that previous analysis. A small portion of another park, North Island Park, is within the 500-foot screening distance; however, no park facilities are within that area, so no impact assessment is warranted. Seven receptor locations were selected to represent the two land uses and are shown in Exhibit 3-2.

Within the Project study area, including ¼ mile from the endpoints, there are three public at-grade crossings and one private at-grade crossing. These at-grade crossings are not within a 24-hour quiet zone and therefore train operators are required to use train horns on approach to the crossing. FRA regulations for horn noise specify that operators shall not apply the horn more than ¼ mile from the crossing based on the operating speeds of 60 mph or greater. All seven receptors are within ¼ mile of at least one crossing and therefore the noise impact assessment at all receptors includes horn noise.

General Noise Assessment

The dominant noise sources in the Project study area are the existing rolling stock train noise and the locomotive horns near at-grade crossings. Table 2-1 in Section 2.1 presents train traffic information for existing conditions, the No-Build Alternative, and the Build Alternative. The proposed Project would contribute additional passenger train noise, additional passenger train horn noise, an increase passenger train speed, and shifts in track location.



Date: 01/02/2015

NOISE AND VIBRATION ASSESSMENT RECEPTORS	Exhibit 3-2

The impact assessment uses two approaches. The first compares existing train noise to future train noise with the Build Alternative. This assessment includes the proposed Project, as well as freight train growth forecast with either the Build or No-Build Alternative. The FRA manual refers to this as an assessment of "cumulative" noise exposure. The second approach compares existing train noise with passenger train noise with the Build Alternative. The FRA manual refers to this as an assessment of "project" noise exposure.

Table 3-7 and Table 3-8 present the general assessment results for the Project study area. Noise impacts are shown at several receptors with both impact assessment approaches. When analyzing noise levels the loudness is measured on a logarithmic scale using units of decibels (dB). The noise levels are composed of a wide range of frequencies; however, the human ear is not uniformly sensitive to all frequencies. Therefore, the "A" weighted scale was devised to correspond with the sensitivity of the human ear (dB(A)). The A-weighting generally weighs more heavily noise levels in the humanly audible range and screens out noise levels that cannot be heard but are still generated, such as a high frequency dog whistle. Noise levels are measured in day-night average sound levels (L_{dn}), which is an average noise level over a 24-hour period with a 10 dB increase penalty for night-time trains.

Table 3-7. General Noise Assessment Results

Receptor Number	Distance. to Existing Track (feet)	Receptor Type	Noise Metric	Existing Noise Level [dB(A)]	Build Alternative Noise Level [dB(A)]	Cumulative Criteria Allowed Noise Increase [dB(A)]	Impact Level
R17A	113	SFR[1]	L_{dn}	76	78	0	Severe
R18	667	Park	L_{eq}	59	59	0	No Impact
R19A	102	SFR	L_{dn}	76	79	1	Severe
R19B	124	SFR	L_{dn}	75	78	1	Severe
R19C	130	SFR	L_{dn}	75	77	1	Severe
R19D	226	SFR	L_{dn}	73	75	1	Moderate
R19E	142	SFR	L_{dn}	75	77	1	Severe

[1] Single Family Residential

Table 3-8. General Noise Assessment Results (Build Alternative Passenger Trains Only)

Receptor Number	Distance to Existing Track (feet)	Receptor Type	Noise Metric	Existing Noise Level [dB(A)]	Build Alternative Passenger Train Noise Level [dB(A)]	Project Criteria Allowed Build Alternative Passenger Train Noise [dB(A)]	Impact Level
R17A	113	SFR[1]	L_{dn}	76	67	65.0	Moderate
R18	667	Park	L_{eq}	59	37	56.7	No Impact
R19A	102	SFR	L_{dn}	76	70	65.0	Moderate
R19B	124	SFR	L_{dn}	75	69	65.0	Moderate
R19C	130	SFR	L_{dn}	75	66	65.0	Moderate
R19D	226	SFR	L_{dn}	73	64	65.0	No Impact
R19E	142	SFR	L_{dn}	75	66	65.0	Moderate

[1] Single Family Residential

Generally, the increased passenger train speeds and the additional passenger train volume would increase passenger train rolling stock noise levels by an average of 3 weighted decibels (dB(A)). Freight train noise also would increase by an average of 3 dB(A).

Table 3-7 indicates that six of the seven receptors would be impacted with the Build Alternative, including one moderate impact and five severe impacts. Table 3-8 indicates that when considering only passenger trains, five of the seven analyzed receptors would be impacted. All impacts under this scenario are moderate impacts. The main cause of these impacts is high existing noise levels resulting from horn noise, which greatly limits the increase in noise without impact allowed under FRA criteria.

Detailed Noise Assessment

A detailed noise assessment was conducted for those receptors determined to be impacted as part of the general noise assessment. The results are shown in Table 3-9 and Table 3-10. The detailed assessment resulted in impacts similar to the general assessment. Only receptor R19C was determined to have a different impact level from

Table 3-9. Detailed Noise Assessment Results

Receptor Number	Distance to Existing Track (feet)	Receptor Type	Noise Metric	Existing Noise Level [dB(A)]	Build Alternative Noise Level [dB(A)]	Cumulative Criteria Allowed Project Noise [dB(A)]	Impact Level
R17A	113	SFR[1]	L_{dn}	72	76	1	Severe
R19A	102	SFR	L_{dn}	72	76	1	Severe
R19B	124	SFR	L_{dn}	71	75	1	Severe
R19C	130	SFR	L_{dn}	71	74	1	Severe
R19D	226	SFR	L_{dn}	67	70	1	Moderate
R19E	142	SFR	L_{dn}	70	74	1	Severe

[1] Single Family Residential

Table 3-10. Detailed Noise Assessment Results (Build Alternative Passenger Trains Only)

Receptor Number	Distance to Existing Track (feet)	Receptor Type	Noise Metric	Existing Noise Level [dB(A)]	Build Alternative Passenger Train Noise Level [dB(A)]	Project Criteria Allowed Build Alternative Passenger Train Noise [dB(A)]	Impact Level
R17A	113	SFR[1]	L_{dn}	72	66	65.0	Moderate
R19A	102	SFR	L_{dn}	72	66	65.0	Moderate
R19B	124	SFR	L_{dn}	71	65	64.4	Moderate
R19C	130	SFR	L_{dn}	72	62	64.4	No Impact
R19E	142	SFR	L_{dn}	70	64	63.6	Moderate

[1] Single Family Residential

the general assessment. Receptor R19C was found not to be impacted when considering passenger trains only.

Noise Impact Abatement Measures

Mitigation of noise impacts from passenger rail improvement projects may involve treatments of three components of the noise problem: (1) the noise source, (2) the propagation path from the source to receiver or (3) noise levels at the receiver.

Factors to consider when deciding which, if any, mitigation measures to implement would include: (1) the significance and severity of expected impacts, (2) the numbers of receptors potentially affected, (3) the potential effectiveness of a given mitigation option to reduce noise and vibration levels, and (4) the cost involved to implement or construct the mitigation option.

In the case of the proposed Project, train horn noise is the dominant noise source in the Project study area and implementing a quiet zone would result in no impacts for the Build Alternative with either noise assessment approach. Wayside noise levels would decrease from existing levels.

Quiet zones are a type of noise source mitigation. Within quiet zones, railroads do not need to routinely sound their horns when approaching at-grade crossings. The lead agency in designating a Quiet Zone is the local public authority responsible for traffic control and law enforcement on the roads crossing the tracks. This is typically the local traffic department or public works department. The City of Wilmington could designate a quiet zone in the Project study area.

Specific reductions in potential future noise levels with a quiet zone are shown in Table 3-11. The implementation of a quiet zone would lower Build Alternative noise levels between 11 dB(A) and 13 dB(A). This would result in Build Alternative noise levels between 7 dB(A) and 10 dB(A) less than existing noise levels. A 7 dB(A) to a 10 dB(A) decrease in noise levels are generally considered between a readily perceptible decrease in noise to being half as loud as the original. This benefit would be relatively uniform throughout the Project study area.

In order to establish a quiet zone, the increased risk caused by the absence of a horn must be mitigated by adopting Supplemental Safety Measures (SSM) at each at-grade crossing. The at-grade crossing improvements, including four-quadrant gates at the three public grade crossings and gates at the private grade crossings, included in the Build Alternative would comprise SSMs necessary for the City of Wilmington to designate a quiet zone. If the City of Wilmington wishes to designate a quiet zone after completion of the Build Alternative's grade crossing improvements, FRA would work with the City of Wilmington, while also coordinating with the UPRR and Amtrak, so that the Project study area becomes a quiet zone.

Table 3-11. Build Alternative Noise Levels with Abatement Options

Receptor Number	Distance. to Existing Track (feet)	Receptor Type	Noise Metric	Existing Noise Level [dB(A)]	Build Alternative Noise Level [dB(A)]	Build Alternative Noise Level with Quiet Zone [dB(A)]	Build Alternative Noise Level with Noise Barrier [dB(A)]
R17A	113	SFR[1]	L_{dn}	72	76	65	71
R19A	102	SFR	L_{dn}	72	76	65	71
R19B	124	SFR	L_{dn}	71	75	63	70
R19C	130	SFR	L_{dn}	71	74	63	69
R19D	226	SFR	L_{dn}	67	70	57	65
R19E	142	SFR	L_{dn}	70	74	63	69

[1] Single Family Residential

Other noise mitigation source treatments and path treatments include:

- Source Treatments
  - Wheel Treatments. A major source from steel-on-steel high speed train systems is the wheel-rail interaction. Various wheel designs and other mitigation measures to reduce wheel noise include: resilient or damped wheels, spin-slide control systems, and maintenance.
  - Vehicle Treatments. Vehicle noise mitigation measures can be applied to various mechanical systems associated with ventilation and passenger comfort. Fan noise can be a major noise source. Fan quieting can be accomplished by installation of one of several new designs of quiet, efficient fans. The vehicle body design also can provide shielding and absorption of noise generated by the vehicle components.
  - Rail Treatments. Rail surfaces that are degraded over time because of wear generate noise levels that are higher than those produced by a well-maintained system. Roughness of rail surfaces can be eliminated by grinding rails.
- Path Treatments
  - Noise Buffers – Acquisition of land or purchasing easements for noise buffer zones, although in the case of the Build Alternative, this would require displacement of impacted homes and is not a reasonable mitigation approach.
  - Sound Barriers – Sound barriers are effective in mitigating noise when they break the line of sight between the source and the receiver. Estimated wall heights for the impacted receptors range from 13 feet to 14 feet in order to provide a readily

perceptible reduction. Total noise wall length to mitigate the impacted receptors would be approximately 3,400 feet.

As shown in Table 3-11, the construction of noise barriers would result in a 5 dB(A) reduction of future Build Alternative noise levels at the representative receptors. Future noise levels with noise barriers present would be 1 dB(A) or 2 dB(A) less than existing noise levels at the representative receptors. Generally, anything less than a 3 dB(A) change is considered a less than perceptible change in noise. The benefit of the noise barriers would drop as the distance from the track increases and drop at residences closer to the ends of the wall. In addition, walls could result in potential sight-distance and safety issues at at-grade crossings. Horn blowing provides a safety benefit in the form of a warning to drivers wanting to cross the tracks. Using noise barriers to lower wayside horn noise would affect this safety benefit. Before implementation of noise barrier walls, FRA guidelines recommend that the community's agreement should be obtained. Some communities would rather not have a wall because of adverse visual effects.

The formal designation of a quiet zone by the City of Wilmington in association with FRA, AMTRAK, and the UPRR, would be a more effective noise mitigation measure than noise barriers without the additional impact and cost associated with barriers.

Construction Noise

Temporary noise would be caused by construction activities. Construction mitigation measures would be required to minimize these impacts. Construction activities conducted during daytime hours would have a lesser impact than nighttime construction. However, there could be locations in the Project study area where nighttime construction would be unobtrusive, such as commercial areas where the land use is unoccupied during nighttime hours, or industrial areas that are generally not sensitive to noise. Nighttime construction could be necessary to avoid unacceptable disruptions to current rail operations or street traffic during daytime hours. Once details of the construction activities become available, the contractor would communicate with the City of Wilmington regarding minimizing nighttime noise impacts at sensitive receptors.

There are several measures that can be taken to minimize intrusion without placing unreasonable constraints on the construction process or substantially increasing costs. These include noise monitoring to ensure that the contractor takes reasonable steps to minimize impacts when near sensitive areas; noise testing and inspection of equipment to ensure that all equipment on the site is in good condition and effectively muffled; and a project web site. The project web site would keep residents informed about construction plans so they can plan around periods of particularly high noise levels. The 2012 Tier 1 FEIS lists a variety of possible control measures that could be implemented in order to minimize construction noise.

3.1.4.2 *Vibration Evaluation*

Screening Vibration Evaluation

The screening assessment for potential vibration effects was based on wayside land use coupled with an appropriately conservative screening distance obtained from the FRA guidance manual. The screening distance for residential land uses with infrequent events along a rail line with speeds between 100 mph and 200 mph is 100 feet. Sensitive receptors identified within this screening distance were evaluated for potential vibration impacts. The HSR Program corridor passenger train speed that would occur along most of the Chicago to St. Louis corridor of 110 mph was assumed in the vibration analysis, providing a "worst-case" result.

General Vibration Evaluation

Based on the vibration screening evaluation, two sensitive receptors exist within the 100-foot vibration screening distance (See Exhibit 3-2). The FRA general assessment procedures for vibration were used to predict the vibration level at the identified receptor locations. Table 3-12 presents the general assessment analysis for vibration.

Table 3-12. Ground-borne Vibration General Assessment Results

Receptor No.	Distance to Proposed Track (feet)	Existing Vibration Level (VdB)	Build Alternative Vibration Level (VdB)	Increase in Vibration (VdB)	FRA Criteria (VdB)[1]	Impact Determination
R17A	93	78	82	4	80	Impact
R19A	82	79	84	5	80	Impact

[1] Criteria for infrequent events, fewer than 30 vibration events of the same kind per day.

The general ground-borne vibration analysis indicates that vibration impacts would potentially occur with the Build Alternative at the two receptors because predicted vibration levels would exceed the FRA vibration criteria and because vibration levels would increase between 4 and 5 velocity decibels (VdB) over the existing vibration levels. The vibration impacts are generally associated with the passenger rail speed increases.

A vibration velocity level of 75 VdB represents the approximate dividing line between barely perceptible and distinctly perceptible. Current rail vibration levels at the two representative receptors are 3 to 4 VdB greater than 75 VdB. A vibration velocity level of 85 VdB tends to be acceptable at sensitive receptors only if there are an infrequent number of events per day, such as the case of the Build Alternative, but unacceptable at institutional uses such as schools and churches (FRA, 2012). Only residential uses would be affected with the Build Alternative.

Because potential vibration impacts were predicted by the general vibration assessment, and that the predicted vibration levels are within 5 VdB of the impact criterion, the need for a detailed vibration assessment was considered. A general assessment typically

produces expected vibration levels higher than those determined by a detailed assessment. Typically, a detailed assessment will include tests to determine the vibration propagation properties of the soil between the source and receptor as a means of determining existing vibration and predicting future vibration levels. The detailed assessment also can identify practical vibration control measures that would be effective at the dominant vibration frequencies. Such measures could include special track work design measures, such as ballast mats or resiliently support ties. FRA criteria suggest that a detailed vibration assessment is appropriate at particularly sensitive buildings (such as a concert hall), when a potential vibration impact exists for a large number of residential buildings, or when a high-speed rail alignment will be close to university research buildings where vibration-sensitive optical instrumentation is used.

As indicated above, only two residential receptors would be within 100 feet of the Build Alternative. They are not grouped but isolated from each other. Therefore, it was concluded that a detailed vibration assessment is not warranted.

Construction Vibration

Vibration during construction would be limited to annoyance effects and not to building damage effects. Pile driving would not occur in association with construction of bridge piers.

Vibration Mitigation

The following maintenance procedures are used by the rail industry, including the UPRR and, in the case of vehicle-related procedures, Amtrak to minimize vibration impacts:

- Regularly scheduled rail grinding
- Wheel truing programs
- Vehicle reconditioning programs
- Use of wheel-flat detectors

Such measures would continue to be used by the UPRR and Amtrak and would minimize vibration impacts resulting from increased passenger train speeds at the two impacted residential receptors.

Like noise, construction vibration impacts could be mitigated by restricting the time permitted for vibration-intensive activities.

3.1.5 Agricultural

As stated in the Bureau of Design and Environment (BDE) manual, the Illinois State Farmland Preservation Act compliance and Federal AD1006 Form for Evaluation of Farmland Conversion Impacts are required for projects requiring ROW acquisition exceeding 3 acres per mile of agricultural land outside of corporate limits. No

agricultural land would be affected by the No-Build Alternative or the Build Alternative. No areas zoned as agricultural are within the Project study area.

3.1.5.1 *Existing Conditions*

The Project study area is within an urban environment. No cultivated land, active agricultural operations, or agricultural businesses were identified in the Project study area from either the field surveys or a review of the City of Wilmington 2014 Zoning Map. There are no protected agricultural areas registered with the Illinois Department of Agriculture (IDOA) in the Project study area.

The agricultural setting and impact of the Build Alternative on farmland conversion was evaluated in accordance with the requirements of the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). NRCS defines Prime Farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops, and also is available for these uses. Important Farmlands, are defined by NRCS as those that are nearly Prime Farmland that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as Prime Farmland if conditions are favorable (IDOA, 2001). Because there are no agricultural lands or lands available for agriculture within the Project study area, there are no Prime and Important Farmlands in the Project study area. Additionally, there are no farm grade crossings within the Project study area.

3.1.5.2 *Potential Impacts*

Since there is no Prime or Important Farmland in the Project study area, coordination with NRCS office and IDOA, including preparation of a Farmland Conversion Impact Rating (AD1006) form to initiate a Land Evaluation and Site Assessment (LESA), is not required.

The Build Alternative includes 0.16 acres additional ROW at a tree line adjacent to agricultural land, and this tree line is not in agricultural production. Since no land in the Project study area is actively farmed, the Build Alternative would not sever farm parcels (divide one track into two smaller tracks) and in turn would not create uneconomic remnants. No landlocked farm parcels would be created. The Build Alternative would not result in farmland conversion or displacement of agricultural business, and therefore would not contribute to agricultural income loss.

The No-Build Alternative also would have no agricultural impacts.

3.1.5.3 *Mitigation*

Mitigation is not required for agricultural lands.

3.1.6 Aesthetic Environment and Scenic Resources

This section describes the existing visual environment of the Project study area and identifies changes to visual characteristics and visual quality for viewers of and from the UPRR resulting from the Build Alternative. Aesthetic and visual resources are natural

and cultural landscape features that people see and that contribute to the public's enjoyment of the environment. Visual resource impacts were assessed in the 2012 Tier 1 FEIS using the FHWA guidance titled *Visual Impact Assessment for Highway Projects* (FHWA, 1981). In the 2012 Tier 1 FEIS, the overall magnitude of impacts to the aesthetic environment and scenic resources for the Build Alternative in Will County was found generally to be minor/negligible.

The same FHWA guidance was used in the assessment of the Build Alternative for this proposed Project. The assessment found that visual impacts for the Build Alternative would be minor/ negligible for most of the proposed Project. A visual impact would occur for the residential development from East Kankakee River Drive to Stewart Street where vegetation removal would open up views from homes of the UPRR tracks, trains, and industrial development on the east side of the tracks. Views of backyards would be opened up for Amtrak users.

FHWA guidance was used to define landscape units in the Project study area that are visually distinct resources. Landscape units are defined by their visual characteristics and visual quality, and analyzed based on whether views both of the project and from the proposed Project would be affected by the Build Alternative.

3.1.6.1 *Existing Conditions*

The Project study area starts north of East Kankakee River Drive (MP 51.88) and ends south of North 1st Street (MP 53.19) in the City of Wilmington, Illinois. The 2012 Tier 1 FEIS indicates that the Project study area is in the Grand Prairie landscape region, which has a variety of visual types. The Project study area is in Wilmington, one of many small agricultural towns between Chicago and St. Louis. The Project study area contains the existing single track railroad, which passes through light industrial, commercial, and residential areas. The North Island Park is immediately east of the Kankakee River Bridge. There are no Illinois Scenic Byways, IDNR Greenways and Trails, or reserved natural and wildlife management areas in the Project study area. There are no historic properties within the viewshed of the Project study area.

The FHWA visual assessment manual calls for describing the affected environment in terms of landscape units, defined as areas or volume of distinct landscape character, which form spatially enclosed units at ground level. The following landscape units are present in the Project study area:

- Area from East Kankakee River Drive to Stewart Street
- Forked Creek area
- Areas from just north of North Kankakee Street to Water Street and south of the North 1st Street
- Kankakee River area

The following sections describe the visual quality of each of the four landscape units.

E Kankakee River Drive to Stewart Street

This landscape unit contains single family residential development on the west side of the UPRR and industrial development or undeveloped open space on the east side. Views are common for the type of setting and are not notable. Viewers of the UPRR include residents of the homes and workers in a parking area used for semi-truck trailers adjacent to the west and east sides of the UPRR, respectively, roadway users close to the rail line, and Amtrak passengers. Trees and other vegetation (trees/shrubs) along the railroad substantially shields views of the UPRR from homes, which is considered desirable for views from homes given their different use and character. Trees/shrubs also partially shield the views of Amtrak passengers of the back yards of homes that back up onto the UPRR. Trees/shrubs also substantially shield views of the UPRR from the adjoining industrial development, although views of the UPRR from industry would be compatible with the industrial setting. Views along the UPRR in this area are illustrated in Exhibit 3-3).

Exhibit 3-3. UPRR South of East Kankakee River Drive

Forked Creek Area

This landscape unit contains Forked Creek and its wooded bank. Views would include views of the stream by Amtrak passengers and persons who might choose to walk to the bank. There are no regular viewing points for this stream. Views are common for the type of setting and are not notable.

Just North of North Kankakee Street to Water Street and South of the North 1st Street

This landscape unit contains industrial and some commercial uses along the UPRR and possibly one home. Some trees are along the UPRR. Views are typical of older non-

residential development consisting of buildings, parking areas, trucks and buses, outdoor storage of materials, and refuge. Views are not of high quality. Trees partially shield views of the UPRR from the one home in the area. One notable vertical feature of the UPRR in this area is the Water Street Bridge (see Exhibit 3-4.) The Water Street Bridge is of common design and also shows signs of deterioration. It does not have high visual quality.

Exhibit 3-4. Water Street Bridge

Kankakee River Area

This landscape unit includes the river, the river's wooded banks, sparse residential development and some commercial development on the banks, North Island Park, and the UPRR's bridge across the Kankakee River (see Exhibit 3-5). The Kankakee River and the existing Kankakee River bridge can be seen by viewers from North Island Park, recreational users of the Kankakee River (including canoeists and other boaters, as well as fishers on the shoreline, and the few homes on the river). Dense trees are found along the shoreline at the Kankakee River Bridge.

Considered a major attraction in the Wilmington area, the Kankakee River combined with the North Island Park presents a distinctive visual pattern enjoyed by the residents and visitors in the area. The Kankakee River bridge contrasts visually in form, line and color with the natural environment, affecting the visual intactness by encroaching into views of natural features along the river. The visual resources in the Kankakee River

Exhibit 3-5. Kankakee River Bridge

area do not form a coherent and harmonious visual pattern and lacks the element of unity as shown in Exhibit 3-5. The Kankakee River Bridge shows signs of age and decay and does not have high visual quality.

3.1.6.2 *Potential Impact*

No-Build Alternative

There would be no change to existing views or visual quality with the No-Build Alternative.

Build Alternative

The Build Alternative would include track construction to accommodate double tracks (with associated widening of existing embankments and cuts), three bridge replacements (the Kankakee River Bridge, the Forked Creek Bridge and Water Street Bridge), and new ROW fencing as components that would change existing views. Visual change at the four landscape units is described in the sections that follow.

E Kankakee River Drive to Stewart Street

The addition of a second track to the west of the existing track would require removal of most of the trees/shrubs that at this time substantially shield from homes views of the UPRR. This vegetation also shields views of homes and their back yards from Amtrak passengers. The new second track would be closer to homes than the current single track. New ROW fence also would be in view. Trees/shrubs on the east side of the UPRR also would be removed during construction in association with moving the current track to the east. These changes would introduce views of the UPRR tracks,

trains, and the industry on the east side of the tracks, including buildings and semi-truck trailer parking, to residential views. The change would expose residential viewers to unshielded views not in character with the residential setting and be a negative impact on those viewers. Unshielded views of Amtrak passengers of back yard/semi-private spaces also would be a negative impact.

Forked Creek Area

At Forked Creek, views of the existing bridge would be replaced by views of the new bridge. The height of the new bridge would be essentially the same as the existing bridge. Trees/shrubs would be removed, particularly east of the crossing to facilitate construction. Given the nature of the change and the limited number of viewers, the impact of the change would be minor/negligible.

Just North of North Kankakee Street to Water Street and South of the North 1st Street

Changes in this landscape unit would include the addition of the second track with associated effects on vegetation. The Water Street Bridge would be replaced with a bridge of similar character and height. The landscape unit is currently not of high visual quality. In some cases, trees/shrubs partially shielding views of the UPRR would be removed; however, views of the UPRR from industry would be compatible with the industrial setting. Given these factors, the impact of the changes would be minor/negligible.

Kankakee River Area

In the Kankakee River Area landscape unit, viewers from the river, North Island Park, and development on the river banks would view the replacement Kankakee River Bridge. The Build Alternative would not notably change the landscape's current visual environment. The new bridge would be similar in character to the existing bridge, including form, color, dominance, scale, and continuity. The new bridge could enhance the visual quality of the area because the new structure would replace the older structure, providing a fresh and renewed appearance. Some vegetation on the river banks would be removed to provide access for construction equipment. Views for the Amtrak passengers would change negligibly with minimal tree loss. Given these factors the visual change would be minor/negligible at this landscape unit.

3.1.6.3 *Mitigation*

The UPRR ROW would be re-vegetated with a ground cover at the end of construction. However, in the East Kankakee River Drive to Stewart Street landscape unit the visual impact described would remain until replacement vegetation grows and once again begins to shield views of the UPRR and industrial development on the east side of the UPRR.

3.2 Ecological Systems

This section discusses vegetation communities, wildlife habitat, wetlands and waters of the U.S., water quality and water resources, threatened and endangered species, and

special lands within the Project study area. Exhibit 3-6 depicts the location of identified ecological resources within the Project study area.

The Project study area is within the Grand Prairie Natural Division of central and east-central Illinois, Grand Prairie Section (IDNR, 2014). The Grand Prairie Natural Division includes part of Illinois that was affected by the late stages of the Wisconsin glaciation, which is a poorly-drained area characterized by black-soil prairie, marshes and prairie potholes (IDNR, 2014). The Grand Prairie Natural Division is a vast plain formerly occupied primarily by tallgrass prairie, now converted extensively to agriculture (IDNR, 2014). Natural drainage of the fertile soils is poor, resulting in many marshes and potholes. Bison, Blanding's turtles, and Franklin's ground squirrels are distinctive animals of the Grand Prairie, but are now extirpated or imperiled as is the native prairie (IDNR, 2014).

Approximately 3.92 acres of forested area would be impacted. Twenty-two trees with bat habitat features could be removed (see Section 3.2.1); approximately 0.17 acre of jurisdictional wetlands and 0.24 acre of likely non-jurisdictional wetlands (0.41 acre total) would be permanently impacted by the Build Alternative; 0.18 acre of jurisdictional wetlands and 0.0 acre of likely non-jurisdictional wetlands would be temporarily impacted (see Section 3.2.2); 0.03 acre of preferred mussel habitat (see Section 3.2.3) would be permanently impacted and 0.23 acre of preferred mussel habitat will be temporarily impacted as a result of the Build Alternative. The habitat of the sheepnose mussel (*Plethobasus cyphyus,* federal endangered), the northern long-eared bat *(Myotis septentrionalis*, federal, threatened), the purple wartyback mussel (*Cyclonaias tuberculata*, state threatened), the black sandshell mussel (*Ligumia recta*, state threatened), the river redhorse fish (*Moxostoma carinatum*, state threatened), pallid shiner fish (*Hybopsis annis*, state endangered, and western sand darter fish (*Ammocrypta clarum*, state endangered) would be affected. There are no prairies within the Project study area. The No-Build Alternative would not impact any ecological systems.

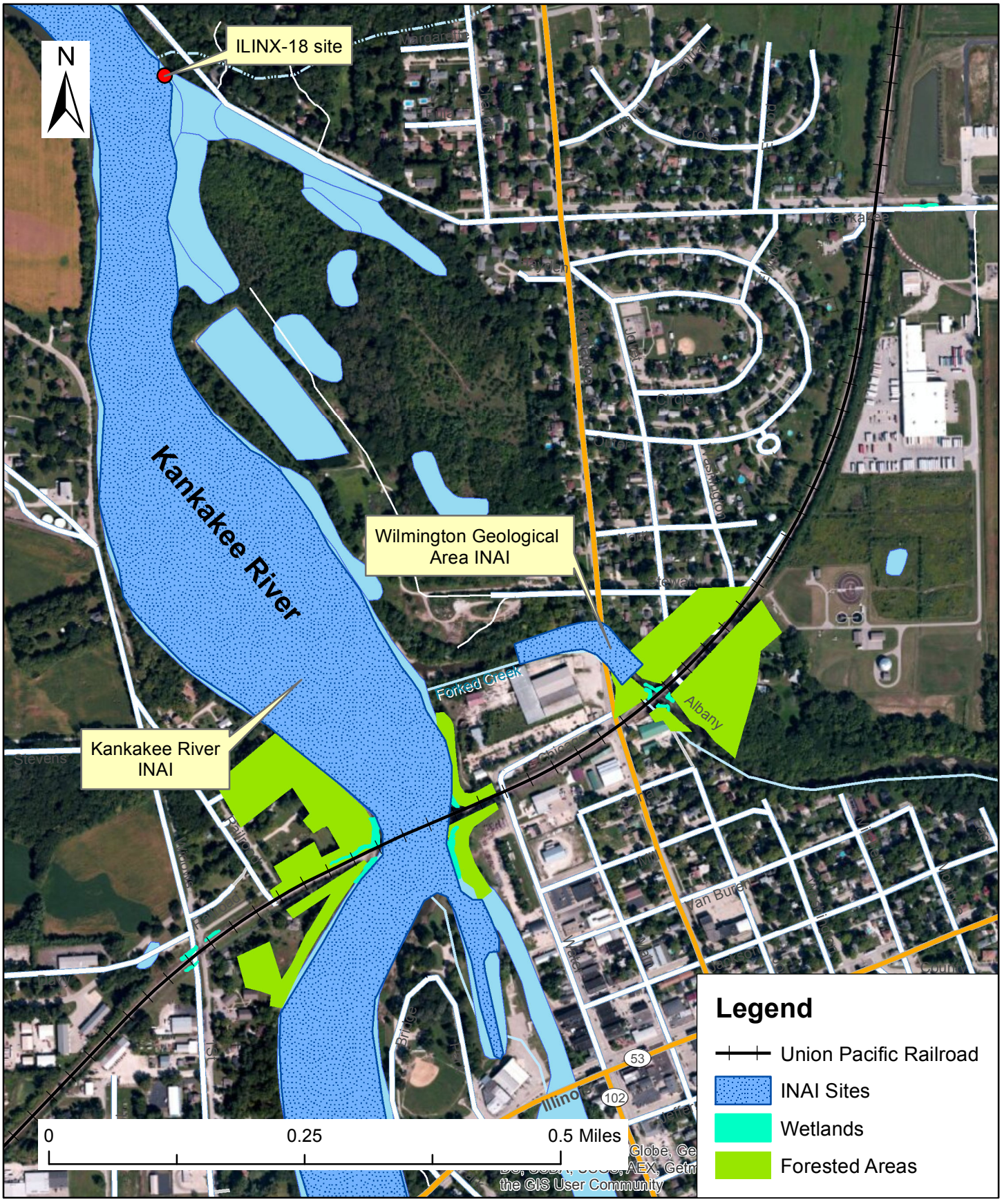
3.2.1 Vegetation and Habitat

3.2.1.1 *Existing Conditions*

Habitats within the Project study area are primarily railroad ROW, residential, commercial, and undeveloped area with wetlands of low to moderate natural quality. Streams and rivers along existing UPRR are bridged. Wildlife usage in the Project study area is likely to be species tolerant of disturbance and human presence.

Habitat for the species listed as critical for the Grand Prairie Natural Division by the Illinois Wildlife Action Plan are found within the Project study area. These habitats are limited to rivers, streams, forests, and wetlands. There are no prairies or prairie remnants with the Project study area. Refer to Section 3.2.4 for specific discussions on federal and state listed threatened and endangered species.

The majority of the Project study area contains scattered trees associated with commercial and developed areas, as well as some forested areas primarily associated with the Kankakee River and Forked Creek. In Illinois, a Memorandum of



Date: 01/02/2015

NATURAL RESOURCES

Exhibit
3 - 6

Understanding (MOU) between the IDNR and IDOT (IDOT, 2013) requires IDOT to determine whether an alignment bisects or fragments forested areas greater than 20 acres. There are no forested areas greater than 20 acres within the Project study area.

The Project study area is within the eastern half of the Mississippi flyway, which is used by migratory birds in the U.S. and Canada. Migratory birds use a diverse range of habitat types including those habitats within the Project study area. The predominant migratory bird habitat types within the Project study area are forests and wetlands.

Some bird species, including migratory birds, rely on large stands of mature forests for breeding. Since the Project study area contains forested areas, available literature on area requirements of forest interior avian species was reviewed to determine which were most likely to be used by these species. Area requirements of forest interior migratory species indicated that many species, including the most sensitive and those declining in population require areas larger than 370 acres of contiguous habitat (Robbins *et al.*, 1989). Robbins *et al.* (1989) found that forest area influences breeding abundance of forest interior species. They found the highest probability of breeding by most forest interior species in forests greater than 7,400 acres in size. Estimated minimum areas needed to support breeding populations ranged from 2.5 acres for wood thrush (*Hylocichla mustelina*) to 2,500 acres for black-throated blue warbler (*Setophaga caerulescens*), with half the species needing 370 acres or more. There are few forest interior species for which forests less than 25 acres appeared to provide adequate habitat for breeding.

3.2.1.2 *Potential Impacts*

The Build Alternative would impact 3.92 acres of forested area. Because of the small area of impact combined with the limited ability of the small (less than 20 acres) forested areas in the Project study area to provide suitable habitat for migratory birds, it is anticipated the Build Alternative would not have an adverse effect on wildlife habitat including migratory and forest interior avian species. Impacts to aquatic species are discussed in Section 3.2.3. The No-Build Alternative would not impact wildlife habitat.

3.2.1.3 *Mitigation*

Temporary impacts would be mitigated by restoring the ground surface to the pre-construction contour and planting exposed areas of soils with a cover crop.

The requirements of Executive Order 13112 to combat the introduction and spread of invasive plant species during construction would be met. For example, measures to minimize the spread of invasive species during construction could include the rapid seeding and revegetation of bare soil with native/non-invasive species, cleaning of construction equipment prior to entering areas near sensitive habitats, and active management of invasive plants that become established during construction.

3.2.2 Wetlands and Waters of the U.S.

This section discusses wetlands within the Project study area and wetland impacts for the proposed Project. Wetlands are defined by the USACE and the USEPA as:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Title 33 Code of Federal Regulations Section 328.3 (b) and Section 404 of the Clean Water Act).

Wetland delineations were conducted on October 3, 4, 5, and 6, 2011 (Olsson Associates, 2012). All potential wetlands within the Project study area were examined. Thirteen sites met the three criteria of a wetland established in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual; Midwest Region (Version 2.0) (USACE, 2010). The 13 wetlands are depicted on Exhibit 3-6. Approximately 0.41 acre of wetland would be permanently impacted by the Build Alternative. Approximately 0.18 acre of wetland would be temporarily impacted. Two sites meet the criteria of "Waters of the U.S." (WOUS). WOUS are generally open water areas such as rivers and lakes including wetlands that are connected to navigable waterways and their tributaries. WOUS are discussed in Section 3.2.3.

Executive Order 11990, "Protection of Wetlands," requires federal agencies to avoid, to the extent practicable, short and long-term impacts associated with the destruction or modification of wetlands. More specifically, it directs federal agencies to avoid new construction in wetlands unless there is no practical alternative. In addition, it states that where wetlands cannot be avoided, the proposed action must include all practical measures to minimize harm to the wetlands.

Section 10 of the Rivers and Harbors Act of 1899 (Title 33 USC Section 403) and Section 404 of the CWA (Title 33 USC Section 1344) authorize permits for placement of structures, dredged, or fill material into the WOUS. All public and private projects must obtain permits. Impacts to wetlands and WOUS must be replaced. While mitigation requirements under Section 404 and Section 10 are the same for developers and the IDOT regarding wetland loss and replacement, under the Illinois Wetland Policy Act (IWPA) of 1989 (Chapter 415 ILCS Section 5), IDOT mitigates for isolated and jurisdictional wetlands.

The Build Alternative would require Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the CWA permits for impacts to wetlands and WOUS.

3.2.2.1 *Existing Conditions*

Thirteen wetland sites and two WOUS are within the Project study area. Table 3-13 describes the characteristics of these 13 wetlands. Section 3.2.3 describes the two WOUS (the Kankakee River and Forked Creek) within the Project study area. There are no High Quality Aquatic Resources (HQAR), farmed, or Advanced Identification wetlands in the Project study area.

Each of the wetland types identified within the Project study area serves different functions within the landscape. Forested wetlands provide important nesting and

foraging habitat for numerous wildlife species and year round breeding habitat for amphibians. Forested wetlands also can provide wildlife with a corridor for migration, and for more local travel. Emergent wetlands provide cover, nesting habitat, and foraging habitat for birds such as rails and bitterns.

In addition to habitat for wildlife, wetlands serve as stormwater attenuation features, can serve as sediment/toxicant traps, and can remove nutrients from surface water. Furthermore, these wetlands can serve as groundwater recharge areas. Wetlands adjacent to streams also serve to attenuate flood flows from the channel during high water periods.

3.2.2.2 *Potential Impacts*

Wetland impacts associated with the Build Alternative could include vegetation removal, discharge of clean fill material, and changes to hydrology. Direct wetland impacts would result from construction and the placement of fill material to construct additional track, and from grading for culverts and bridges. These wetland impacts are based on the delineated wetland boundaries combined with Build Alternative ROW and construction easement boundaries. Other impacts could result from changes in hydrologic regime, quality of stormwater runoff with proposed Project operation and maintenance, or habitat continuity. The No-Build Alternative would not impact wetlands or WOUS.

Approximately 0.17 acre of jurisdictional wetlands and 0.24 acre of likely non-jurisdictional wetlands (0.41 acre total) would be permanently impacted by the Build Alternative. Approximately 0.18 acre of jurisdictional wetlands and 0.0 acre of likely non-jurisdictional wetlands would be temporarily impacted (See Table 3-13.) The affected wetlands have low to moderate floristic quality with none having a floristic quality index (FQI) value greater than 18.0. The FQI is an indicator of vegetative quality. Generally, an FQI of 20 or more indicates high vegetative quality with native characteristics.

Because of the use of BMPs, it is not expected that direct impacts to water quality would occur with the Build Alternative. In addition, the Build Alternative would not result in an increase in impervious area; therefore, changes to the hydrologic regime are not anticipated. Because this is an existing rail line, forested habitat is already bisected. In addition, existing bridge piers currently bisect mussel habitat; replacement of these piers would not have an additional impact. The Build Alternative is not expected to have an effect on habitat continuity.

WOUS would be affected by the placement of bridge piers within the Kankakee River and Forked Creekand temporary construction activities associated with bridge construction and removal of existing piers (see the construction description in Section 2.2.2.1). Bridge construction would use temporary cofferdams and work bridges where

Table 3-13. Characteristics of Wetlands within the Project Study Area

Mile Post	Side of Railroad	Site	Wetland Type	Cowardin Classification[1]	Mean C	FQI	HQAR	Total Area (Acres)	Permanent Impact (Acres)	Temporary Impact (Acres)	Jurisdictional
52.8	North	DM-J1	Fringe wetland abutting the Kankakee River	PFO/PEMC	4.0	17.2	Yes	0.99	0.09	0.06	Jurisdictional
	South	DM-J2		PFO/PEMC				0.08	0.00	0.08	Jurisdictional
	North	DM-J3		PFO/PEMC				0.05	0.00	0.02	Jurisdictional
	South	DM-J4		PFO/PEMC				0.50	0.00	0.02	Jurisdictional
52.5	North	DM-L1	Fringe wetland abutting Forked Creek	PEMA	3.7	16.5	No	0.02	0.02	0.00	Jurisdictional
	North	DM-L2		PEMA				0.02	0.02	0.00	Jurisdictional
	South	DM-L3		PEMA				0.02	0.02	0.00	Jurisdictional
	South	DM-L4		PEMA				0.02	0.02	0.00	Jurisdictional
53.2	South	MP-8D	Ditch	PEMA	2.1	6.33	No	0.07	0.02	0.00	Isolated
53.0	South	MP-7	Ditch	PEMA	3.3	5.76	No	0.01	0.01	0.00	Isolated
52.4	North	KT-19	Ditch	PEMA	0.0	0.0	No	0.06	0.00	0.00	Isolated
52.3	North	KT-20	Ditch	PEMA	2.5	3.53	No	0.02	0.00	0.00	Isolated
52.3	South	MP-15	Ditch	PEMA	1.0	1.0	No	0.06	0.06	0.00	Isolated
52.2	East	MP-16	Ditch	PEMA	1.0	1.0	No	0.15	0.15	0.00	Isolated
51.5	East	KS-28	Ditch	PEMC	2.5	3.54	No	0.02	0.00	0.00	Isolated
Total[3]								2.09	0.41	0.18	

[1] *Cowardin et al. (1979)* - PFO/PEMC - Palustrine, forested/palustrine, emergent, seasonally flooded; PEMC - Palustrine, emergent, temporary flooded.

[2] The high mean C and FQI values are only because of the presence of two species, with one species having a C-value of 5.

[3] Total may not equal the sum of the numbers above because of rounding.

possible for placing piles and heavy equipment access, respectively, to minimize temporary impacts. Impacts to these two WOUS would be:

- Kankakee River
  - Permanent New Bridge Pile Impact: 0.10 acre
  - Existing Bridge Piles Removed: 0.05 acre
  - Temporary Construction Bridge Pile Impact: 0.03 acre
  - Temporary Construction Cofferdam Impact: 0.69 acre
- Forked Creek
  - Permanent New Bridge Pile Impact: 0.03 acre
  - Temporary Construction Fill Impacts: 0.20 acre

The total net permanent impact would be 0.05 acre at the Kankakee River and 0.03 acre at Forked Creek. The total temporary impact be 0.72 acre at the Kankakee River and 0.20 acre at Forked Creek.

3.2.2.3 *Mitigation*

The USACE has established performance standards and criteria for the use of compensatory mitigation, mitigation banks, and in-lieu fee programs to improve the quality and success of compensatory mitigation projects for activities authorized by Department of the Army permits. Mitigation for wetland impacts would follow the Compensatory Mitigation Rule (33 CFR Part 332) requirements for impacts to WOUS.

In Illinois, the IWPA requires there to be no overall net loss of wetlands or their functional values resulting from state supported activities. Under the IWPA, mitigation of all wetland impacts, regardless of size, is required for state supported actions that impact wetlands. Additionally, the IWPA recognizes all wetlands, including isolated wetlands that are not regulated by USACE under current policy.

IDOT would work to first avoid and minimize impacts to wetlands locations during final design development to the extent practicable. Unavoidable adverse wetland impacts would be subject to the applicable replacement ratios specified in 17 IAC Part 1090.50 (c)(8). The replacement ratio for unavoidable adverse impacts to wetlands with a Mean C value of four or more would be 5.5:1.0, and would apply to wetlands DM-J1, DM-J2, DM-J3, and DM-J4. Impacts to wetlands with a Mean C value less than 4 would be determined based upon the location of the wetland compensation site. A bank site to be determined is proposed as the compensation site. If mitigation banking is required, these sites would be identified during Section 404 permitting.

3.2.3 Water Quality and Water Resources

This section provides an overview of surface and groundwater resources and the water quality of those resources in the Project study area. It focuses on those resources with the potential to be affected by the proposed Project.

The Build Alternative would not impact groundwater and likely would not adversely affect surface waters. Appropriate BMPs would be utilized prior to, during, and after construction. The No-Build Alternative would not impact surface or groundwater.

WOUS are within the jurisdiction of the USACE under Section 404 of the CWA. Any work within a WOUS requires a permit from USACE. Navigable-in-fact waters of the U.S. also are regulated under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 et seq.). Section 10 requires a permit from the USACE for the construction of any structure in or over any navigable water of the US, the excavation/dredging or deposition of material in these waters, or any obstruction or alteration in a "navigable water." A USACE permit is anticipated with the Build Alternative since the Kankakee River Bridge and Forked Creek bridge replacements would require the placement of piers in those streams.

The USACE permit for the Build Alternative would be contingent upon receipt of Section 401 of the CWA Water Quality Certification (WQC) from the IEPA. IEPA has granted Section 401 WQC for most projects that qualify for the USACE Regional Permit Program. This proposed Project is expected to meet the requirements of the Regional Permit Program.

A National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from construction sites would be required for the Build Alternative. NPDES coverage is required when a construction project disturbs 1 acre or more of total land area, or is part of a larger common plan of development that ultimately disturbs 1 or more acres of total land area. Permit coverage would be obtained either under IEPA general permit for stormwater discharges from construction site activities, or under an individual NPDES permit. Permit requirements would include preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would identify potential sources of pollution and describe or identify practices to be used to reduce the discharge of pollutants associated with construction site activity. The permit would require the installation, maintenance, repair, and inspection of BMPs and reporting.

The IDNR OWR issues floodway construction permits for work within regulatory floodways and for the crossing of streams that have more than 640 acres of drainage area for urban areas. The Build Alternative would require issuance of this permit.

3.2.3.1 *Surface Water – Existing Conditions*

The Project study area is within the Kankakee River watershed in Will County, crossing two streams (the Kankakee River and Forked Creek) that are tributaries of the Des Plaines River. The Project study area also is within the Kankakee River drainage sub-basin (Hydrologic Unit Code [HUC] 07120001) as catalogued by the U.S. Geological Survey (USGS). The Kankakee sub-basin drains approximately 3,030 square miles in three states (Illinois, Indiana, and Michigan). The streams crossed by the UPRR within the Project study area are Forked Creek and the Kankakee River as depicted on Exhibit 3-6.

Streams in Illinois are assessed and classified in the following ways:

- IEPA Use Assessments

  IEPA collects water samples from Ambient Water Quality Monitoring Network (AWQMN) sampling stations as part of an ongoing assessment of water quality. Comparison of collected water quality data to the Illinois water quality standards is used to identify potential water quality concerns. Illinois water quality standards include acceptable limits for general use, public and food processing water supply, and secondary contact and indigenous aquatic life. Based on the comparison, IEPA annually assesses the use support for aquatic life, fish consumption, swimming, secondary contact, and drinking water supply. The use support classifications are as follows:

  – Full Support. Water quality meets the needs of all designated uses protected by the applicable water quality standards.

  – Non-support. Water quality is severely impaired and not capable of supporting the designated use to any degree.

  To facilitate reporting these results, IEPA also refers to fully supporting status (for a use) as a *Good* resource quality; non-supporting status is called *Fair* or *Poor* resource quality, depending on the degree to which the use is not attained. Uses determined to be non- supporting are called impaired, and waters that have at least one use assessed as non-supporting are also called impaired. For each impaired use in each assessment unit, the IEPA attempts to identify potential causes and sources of the impairment.

  Aquatic life use assessments in streams are typically based on the interpretation of biological information, physicochemical water data and physical-habitat information from the Intensive Basin Survey, AWQMN, or Facility-Related Stream Survey programs. The primary biological measures used to determine stream health are the fish Index of Biotic Integrity (IBI), the new macroinvertebrate Index of Biotic Integrity (mIBI), and the Macroinvertebrate Biotic Index (MBI) (IEPA, 2014).

- IEPA 303d Listed Streams

  Section 303d of the CWA requires states to develop and submit a list of impaired waters to the USEPA for review and approval. This is known as the 303d list. A stream is included on the 303d list if it does not meet applicable water quality standards or fully support its designated use or uses. A “high,” “medium” or “low” priority to address the impairment is assessed for each of the water resources on the 303d list.

- Biological Stream Characterization

  Biological data can be used to evaluate the overall health of a stream, as biota respond to the physical and chemical characteristics of the system they inhabit. IDNR developed a rating system to measure the biological diversity and integrity of streams. Two separate ratings characterize each stream using fish, mussel, macroinvertebrate and endangered species data. The IDNR rating system ranges from A (highest) to E (lowest).

- National Rivers Inventory

  National Wild and Scenic is a designation for protected water resources in the U.S. The goal of this designation is to preserve the river in its free-flowing condition. The Nationwide Rivers Inventory (NRI) is a listing of more than 3,400 free-flowing river segments in the U.S. that are believed to possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance. Rivers included on this list have the potential to be characterized as National Wild and Scenic Rivers. Under a 1979 Presidential directive and related Council on Environmental Quality procedures, all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments (http://www.nps.gov/ncrc/programs/rtca/nri/; accessed 09/11/09).

- Navigable Waterways

  Navigable waterways are generally all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. Section 9 or Section 10/404 permits are required for construction activities in these waters. A list of navigable waterways is provided by the USACE. The project study area is covered by the Chicago District.

Table 3-14 presents water resource information and data for Forked Creek and the Kankakee River.

Forked Creek

The Project study area crosses Forked Creek at approximately MP 52.5, in the City of Wilmington. Forked Creek originates in the Village of Monee east of I-55 and flows for 39.4 miles to its confluence with the Kankakee River. Forked Creek has a total drainage area of 137.0 square miles. The creek is channelized in sections but retains much of its sinuosity and is buffered by a timbered riparian zone within the western half of its reach.

Forked Creek (stream segment FB-01) has been assessed by IEPA as fully supporting for aquatic life and aesthetic quality and not assessed for any other use. IDNR has assessed Forked Creek as A for diversity and B for Integrity. Forked Creek is not a navigable waterway. It is not listed on the National Rivers Inventory. The Forked Creek is not a National Wild and Scenic River nor is it under study to be added to the list of National Wild and Scenic Rivers.

Table 3-14. Project Study Area Water Resources

		Stream Crossing	
Location		Kankakee River	Forked Creek
IEPA Designation		IL_F-16	IL_FB-01
Track Crossing Location		Wilmington	Wilmington
County		Will	Will
IEPA Basin		10	10
IEPA Basin[1]		Kankakee River	Kankakee River
Total Drainage Area, sq. miles[2]		5,165*	137*
Total Length, miles[2]		273.3*	9.4*
2014 IEPA Use Assessment[1]	Aquatic Life	F	F
	Aesthetic Quality	F	F
	Fish Consumption	N	X
	Primary Contact	F	X
	Public and Food Processing Water Supplies	N	X
	Secondary Contact	F	X
IEPA 303d Listed (Priority)[1]		No	No
BSC Diversity/Integrity[3]		A/B	A/B
Biologically Significant		Yes	No
National Rivers Inventory[4]		No	No
Navigable Waterway[5]		Yes	No
Illinois Natural Area Inventory		Yes	No
Wild and Scenic River		No	No

* Miles in Illinois

F=Full Support, N=Non-Support, X=Not Assessed

Biologically Signification Stream: A is for diversity and B is for Integrity.

Sources:

[1] Illinois Environmental Protection Agency. 2014. Illinois Integrated Water Quality Report and Section 303(d) List.

[2] Healy, R.W. 1979. River Mileages and Drainage Areas for Illinois Streams - Volume 2, Illinois River Basin. USGS Water Resources Investigations 79-11.

[3] Illinois Department of Natural Resources. 2008. Integrating Multiple Taxa in a Biological Stream Rating System.

[4] U.S. Department of Interior. 1982. National Wild and Scenic River System Components. Http://www.rivers.gov/guidelines.html

[5] Navigable Waters Of The United States within the Chicago District regulated under Section 10 of the Rivers and Harbors Act of 1899 and as designated by Illinois Administrative Code. Title 17: Conservation, Chapter I: Department of Natural Resources, Subchapter 11: Water Resources, Section 3704 Appendix A: Public Bodies of Water.

Kankakee River

The Project study area crosses the Kankakee River at approximately MP 52.7, in the City of Wilmington. The Kankakee River originates in St. Joseph County, Indiana. The Kankakee River extends for 57.2 miles in Illinois to its confluence with the Illinois River, southwest of the Village of Channahon. The Kankakee River has a total drainage area of 5,165 square miles. The river is channelized in Indiana, east of the Indiana-Illinois state boundary; however, it retains much of its sinuosity and is buffered by a timbered riparian zone in Illinois.

The Kankakee River, stream segment F-16, has been assessed by IEPA as fully supporting for aquatic life, aesthetic quality, primary contact, and secondary contact. It is not supporting for fish consumption and public and food processing water supplies. Causes for impairment include mercury, polychlorinated biphenyls, and phenols.

Sources of impairment include atmospheric deposition (toxics), and sources unknown. IDNR has assessed the Kankakee River as a Biologically Signification Stream and has rated the river A for diversity and B for Integrity. The Kankakee River is a navigable waterway. It is not listed on the National Rivers Inventory in the Project study area. The Kankakee River is not a National Wild and Scenic River nor is it under study to be added to the list of National Wild and Scenic Rivers. The Kankakee River is an Illinois Natural Area Inventory (INAI) site (see Section 3.2.5).

3.2.3.2 *Surface Water – Potential Impacts*

With the Build Alternative, the placement of bridge piers within the Kankakee River and Forked Creek and temporary construction activities associated with bridge construction and removal of existing piers would impact both the Kankakee River and Forked Creek. At the Kankakee River, bridge construction would use temporary cofferdams and work bridges for placing piles and heavy equipment access, respectively. A maximum of two cofferdams would be placed within the Kankakee River at a time. At Forked Creek, temporary cofferdams also would be used for placing piles. Temporary cofferdams may use inflatable bladders or similar non-erodible materials to prevent release of sediment into the river and restrict water from entering the work area. Once the cofferdams are installed, they would be dewatered using pumps to create a dry work environment and the footings constructed. Temporary cofferdams would not impact the aspects of the Kankakee River that make it a Biologically Signification Stream in that the cofferdams would not reduce the diversity of aquatic organisms within the river or the river's ability to support aquatic organisms. Since a maximum of two temporary cofferdams would be placed within the Kankakee River at one time, the navigability of the river would not be impeded. Instead of erecting a temporary bridge over Forked Creek, a partial causeway is planned. The partial causeway would be temporary and would not reduce the diversity of aquatic organisms within the creek. Construction period assumptions are described in greater detail in Section 2.2.2.

Impacts to state and federally-listed mussels and associated mitigation are addressed in Section 3.2.4.2. Fish are generally mobile and would abandon feeding or resting areas when anthropomorphic changes occur such as placement of cofferdams. The permanent

loss of bottom habitat would result from the increased number and size of supporting piers within the Kankakee River. The permanent impact to the Kankakee River bed would be 0.10 acre, which would include 0.03 acre of preferred mussel habitat. Temporary impact to the river bed would be 0.72 acre, which would include 0.23 acre of preferred mussel habitat. While new bridge piers would affect 0.10 acre of river bottom, 0.05 acre of existing bridge piers also would be removed.

The permanent loss of bottom habitat at Forked Creek also would result from the increased number and size of supporting piers. The permanent impact to the Forked Creek river bed would be 0.03 acre. Temporary impact to the river bed would be 0.20 acre.

3.2.3.3 *Surface Water – Mitigation*

Appropriate BMPs would be utilized prior to, during, and after construction as part of the soil erosion and sediment control plan for the Build Alternative included in the SWPPP. Some stream substrate may be permanently removed to accommodate the bridge piers within the Kankakee River and Forked Creek. Temporary impacts because of in-stream stream bank work would cease immediately after the activity is completed. Some specific minor construction impacts cannot be estimated at this time because they depend on several factors that would be determined either during final design or by the contractor before or during construction. Construction impacts would be minimized and mitigated using BMPs. Mitigation and BMPs, if needed, would be finalized during Section 404 permitting.

3.2.3.4 *Groundwater – Existing Conditions*

Groundwater quality is dependent in large part on the physical and chemical composition of overlying geologic materials. Overall groundwater quality in the Project study area is good. The risk for groundwater contamination through the Project study area is low to moderate except where the rail line crosses alluvial deposits. In such alluvial formations, the potential for groundwater contamination is rated as high (Berg and Kempton, 1984).

Groundwater occurs in water-bearing units called aquifers. In Illinois, aquifers are classified as sand-and-gravel aquifers, shallow bedrock aquifers, and deep bedrock aquifers. Shallow bedrock aquifers and sand-and-gravel aquifers are found in within the Project study area. There is one sole source aquifer pending in Illinois, the Mahomet Aquifer, in McLean County, which is not within the Project study area. No regulated groundwater recharge areas are within the Project study area.

A review of data obtained from the Illinois State Geological Survey (ISGS) Wells and Borings Database shows one water well within 200 feet of the Build Alternative. This distance is the minimum setback for private water supplies.

3.2.3.5 *Groundwater Potential Impacts*

The Build Alternative would not create any new potential routes for groundwater pollution or any new potential sources of groundwater pollution as defined in the

Illinois Environmental Protection Act, 415 ILCS 5/3, *et seq*. Accordingly, the Build Alternative would not be subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells as set forth in 415 ILCS 5/14, *et seq*.

3.2.3.6 *Groundwater – Mitigation*

As impacts to groundwater are not anticipated, mitigation is not anticipated. Although there are no known wells within the proposed Project limits, any undocumented water wells identified during construction within the limits would be properly capped and abandoned. If an associated dwelling would remain after construction is completed, the water well would be replaced or other suitable alternative would be provided. The replacement water well, if necessary, would be constructed such that susceptibility to surficial contamination is minimized, for example, by constructing the well in a deeper aquifer.

3.2.4 Threatened and Endangered Species

Various species receive federal and state protection to help repair previous damage to populations and to attempt to return the species population to self-sustaining levels. Other species receive state protection if the limits of their distribution ranges are within the particular state of concern or if populations can only exist in a specific but uncommon habitat in these states. Agency records and databases were reviewed to determine if federal or state-listed threatened or endangered species are known to exist in the Project study area.

Sheepnose mussel (federal, endangered) and northern long-eared bat (federal, threatened) habitat is in the Project study area. To minimize direct effects to the sheepnose mussel, all living sheepnose mussel found during a pre-construction mussel survey would be removed from the impact area of the Build Alternative. To minimize impacts to the northern long-eared bat, the acreage of forest to be cleared and the number of roost trees removed for the Build Alternative would be minimized, tree removal activities would be conducted between October 15 and March 31, and acreage of forest area removed would be replaced. According to the USFWS, there is a maternity colony 1.5 miles from the Project study area. Additional surveys to determine if bats are present would occur if tree removal is required outside of the October to March time frame. The No-Build Alternative would not impact federally-listed threatened and endangered species.

Federal threatened and endangered species are protected under the Endangered Species Act (ESA) (16 U.S.C. 1531 1544, 1973). ESA provides a program for the identification and conservation of threatened and endangered plants and animals and their habitats. "Endangered" is defined by ESA as the classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range. The term "threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, as defined in ESA. "Critical habitat" is defined as specific geographic areas, whether occupied by listed species or not, that are determined to be

essential for the conservation and management of listed species, and that have been formally described in the Federal Register.

The lead federal agency for implementing ESA for the listed species within the Project study area is U.S. Fish and Wildlife Service (USFWS). ESA requires federal agencies, in consultation with the USFWS via the Section 7 (of ESA) consultation process, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species (USEPA, 2014).

The purple wartyback mussel (state threatened), the black sandshell mussel (state threatened), the river redhorse fish (state threatened), pallid shiner fish (state endangered, and western sand darter fish (state endangered) habitat is in the Project study area. To minimize direct effects to the purple wartyback and black sandshell mussels, living state-listed mussels found during a pre-construction mussel survey would be removed from the impact area of the Build Alternative. To minimize impacts to state listed fish, BMPs would be utilized. The No-Build Alternative would not impact state threatened and endangered species.

The Illinois ESA established the Illinois Endangered Species Protection Board to determine which plant and animal species are threatened or endangered in the state and to advise the IDNR on means of conserving those species. Endangered and threatened species coordination is initiated through the IDNR. The process for the incidental taking of a listed species in Illinois is completed through the Incidental Take Authorization (ITA) process which is coordinated through the IDNR.

3.2.4.1 *Existing Conditions*

Federally Listed -- General

Table 3-15 lists the USFWS federally endangered and threatened, and candidate species within the Project study area. For candidate species, the USFWS Candidate Conservation Program assesses species and develops and facilitates the use of voluntary conservation tools for the conservation of candidate and other species-at-risk and their habitats, so that these species do not need the protection of ESA. The USFWS accomplishes this by working in partnership with public and private landowners.

As the proposed Project has the potential to impact the sheepnose mussel and northern long-eared bat, a Biological Assessment was prepared as part of the USFWS Section 7 consultation. Consultation with USFWS is on-going and current outcomes are reflected in this assessment.

For the plants listed in Table 3-15, plant surveys were conducted in 2011 and 2013 over a minimum of three non-consecutive days within bloom periods. Suitable habitat for the eastern prairie fringed orchid, mead's milkweed, lakeside daisy, or leafy prairie clover was not identified within the Project study area. In their response to a draft Biological Assessment for the proposed Project (letter dated February 13, 2015), USFWS concurred

Table 3-15. USFWS Federally Listed Species in the Project Study Area[1]

Species	Status	Habitat	Habitat Present within Project Study Area?
Northern long-eared bat (*Myotis septentrionalis*)	Threatened*	Caves, mines (hibernacula); small stream corridors with well-developed riparian woods; upland forests (foraging)	Yes; riparian woods
Hine's emerald dragonfly (*Somatochlora hineana*)	Endangered	Spring fed wetlands, wet meadows and marshes	No
Leafy-prairie clover (*Dalea foliosa*)	Endangered	Prairie remnants on thin soil over limestone	No
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie	No
Lakeside daisy (*Hymenopsis herbacea*)	Threatened	Dry rocky prairies	No
Mead's milkweed (*Asclepias meadii*)	Threatened	Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil	No
Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams	Yes
Snuffbox mussel (*Epioblasma triquetra*)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current	Yes
Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)	No
Rattlesnake-master borer moth (*Papaipema eryngii*)	Candidate	Undisturbed prairie and woodland openings that contain their only food plant, rattlesnake-master (*Eryngium yuccifolium*).	No

*The final listing and the interim 4(d) rule becomes effective on May 4, 2015 (USFWS, 2015).

with a determination of no effect for the eastern prairie fringed orchid, mead's milkweed, lakeside daisy, and leafy prairie clover.

The Eryngium stem borer moth lives within populations of rattlesnake master, a plant native to tall grass prairies. Environmental surveys conducted as part of the proposed Project did not identify rattlesnake master plants within the Project study area. In their response to a draft Biological Assessment for the proposed Project (letter dated February 13, 2015), USFWS concurred with a determination of no effect for the Eryngium stem borer moth.

Critical habitat has been designated by USFWS for the federally endangered Hine's emerald dragonfly in Will County. The designated critical habitat within Will County is along the Des Plaines River, which is not in the vicinity of the proposed Project. Therefore, the Build Alternative would not impact identified designated critical habitat for the Hine's emerald dragonfly or the species itself. In their response to a draft Biological Assessment for the proposed Project (letter dated February 13, 2015), USFWS concurred with a determination of no effect for the Hine's emerald dragonfly.

One eastern massasauga population, which is now thought to be extirpated, is approximately 27 miles from the Project study area within the Goodenow Grove Nature Preserve. Therefore, it is not expected that the Build Alternative would impact this species. In their response to a draft Biological Assessment for the proposed Project (letter dated February 13, 2015), USFWS concurred with a determination of no effect for the eastern massasauga.

The snuffbox mussel was reported over a century ago in the Kankakee River; however, subsequent surveys in 1911, 1978, 1975-2000, and 1999 did not identify the species. A single fresh dead specimen was observed in 1988 in Will County. It was not found during the 2014 mussel survey in the Project study area that is described below. As only relict shells have been identified since 1991, the population, if present, may be small, localized, and of doubtful viability (FR, 2012). In their response to a draft Biological Assessment for the proposed Project (letter dated February 13, 2015), USFWS concurred with a determination of no effect for the snuffbox mussel.

A fresh dead specimen of the sheepnose mussel was collected in the Kankakee River less than one mile downstream of the Project study area. The site where the sheepnose mussel was found is suitable habitat for this species. The forested riparian areas along the Kankakee River provide habitat for the northern long-eared bat.

The proposed Project has the potential to impact the sheepnose mussel and northern long-eared bat, the Biological Assessment prepared as part of the USFWS Section 7 consultation focuses on these species. Current findings are summarized below.

Federally Listed – Sheepnose Mussel.

Surveys for the sheepnose mussel within Illinois were conducted by Illinois Natural History Survey (INHS) at three separate locations during May and June of 2012. Subsequent to the mussel surveys, INHS botanists collected several mussel shells within

the Kankakee River at its confluence with Forked Creek (INHS survey site ILINX-25). Included among these shells was a fresh dead specimen of the sheepnose (Cummings and Tiemann, 2013).

The sheepnose mussel is known to occur within the Kankakee River near the Project study area. The sheepnose mussel was collected within the Kankakee River in Wilmington in 1988, and at the British Petroleum Pipeline crossing (approximately 2.7 miles west-northwest of Wilmington) in 2001, 2004, and 2007, but was not found during the 2009 survey (Cummings and Tiemann, 2013).

Recent (1984-2012) mussel surveys were conducted for a variety of purposes on the Kankakee River from the towns of Wilmington on the northern section to Momence on the southern section of the river. The surveys have covered the majority of the river's length, and sheepnose have been taken at all locations surveyed including those at or near Wilmington, Custer Park, Kankakee, Aroma Park, and Momence.

Diving surveys at the Kankakee River crossing for the proposed Project were conducted July 21-25, 2014 (Ecological Specialists, Inc., 2014). Four transects were surveyed that encompassed areas upstream and downstream of the existing railroad bridge. Divers surveyed the bottom substrates by hand, as well as visually, along each transect. Nearshore areas were generally the most productive areas for living mussels with the western shoreline having substrates that were estimated to have 25 percent each of sand, gravel, cobble and boulders. The middle transects away from the shoreline contained a higher proportion of bedrock, and were the least productive for living mussels.

Hand dug, quarter-meter-square quadrants were dug in nearshore substrates within 16 feet of the shoreline. Dug quadrants can reveal small living mussels that are deeply buried in the substrate that would otherwise be missed during visual and tactile substrate searches. No federally protected species were recovered (Ecological Specialists, Inc., 2014).

Federally Listed – Northern Long-Eared Bat

Past surveys in Will County have found northern long-eared bats. During mist-net surveys in 2012 and 2013 for a proposed highway project, one northern long-eared bat was captured at the Donohue Grove Forest Preserve. Two northern long-eared bats were captured during 2009 mist-net surveys along Jackson Creek within Midewin National Tallgrass Prairie; the specific locations are unknown (McClanahan et al. 2009). Additionally, one juvenile female northern long-eared bat was captured at Forsythe Woods by the Forest Preserve District of Will County in 2012 (USFWS 2013l). This indicates that a maternity colony is within 1.5 miles of the Proposed project. Eight northern long-eared bats were captured during surveys in 2013 in Kankakee River State Park. Suitable habitat for this species is present in the Project study area along the Kankakee River and Forked Creek.

State Listed

The Illinois List of Endangered and Threatened Species for Will County as of October 2014 (IDNR, 2014) is presented in Table 3-16.

Table 3-16. Number of State Threatened and Endangered Species in Will County, Illinois

Type	Number of Species
Plant	39
Mammal	1
Reptile	5
Amphibian	2
Bird	10
Insect	3
Fish	9
Mollusk	7
TOTAL	76

Source: IDNR, 2014

Suitable habitat for state-listed plant species are not present within the Project study area. Suitable habitat for state-listed mammal, reptile, and amphibian species are not present within the Project study area.

Suitable habitat for the state threatened mudpuppy (*Necturus maculosus*) occurs approximately 1.1 miles downstream from the Project study area (Kuhns, 2013). This location is identified as site ILINX-18 on Exhibit 3-6. Surveys for the mudpuppy during October 2012 and January 2013 did not identify any individuals.

The state-endangered Blanding's turtle (*Emydoidea blandingii*) are known to occur within the vicinity of the Build Alternative; however, suitable habitat is not present within the Project study area.

State-listed avian and insect species are known to occur within the vicinity of the Project study area (Johnson, 2013); however, suitable nesting habitat is not present. Avian and insect species are mobile species and may use habitat within the Project study area for stopover. There are no state listed insect species known to occur in the Project study area.

The Kankakee River Drainage has been sampled extensively by INHS, IDNR, and USGS personnel over the past 30 years, and the fish fauna is well documented from over 200 known collections. Ninety-one species in 14 families are known from the Kankakee-Iroquois drainage. Five species of fishes listed as state endangered and three listed as

state threatened species are known from the drainage (IESPB, 2011). Records for fishes were taken from the INHS Fish Collection, Southern Illinois University at Carbondale Fish Collection, and the Field Museum of Natural History Fish Collection.

Three state listed species of fish are known to occur within the Kankakee River in the Project study area based on collection records (INHS Database, 2013). These species are:

- River redhorse (State Threatened) - *Moxostoma carinatum*
- Pallid shiner (State Endangered) - *Hybopsis amnis*
- Western sand darter (State Endangered) - *Ammocrypta clarum*

A survey for fishes was conducted on July 22, 2014 in the Kankakee River, both upstream and downstream of the Build Alternative. Five state endangered pallid shiners were collected, as well as three state threatened river redhorse (INHS, 2014).

Suitable habitat for the river redhorse is present within the Project study area. The river redhorse prefers moderate to swift currents in large rivers systems, including impoundments and pools. River bottoms of clean gravel are preferred.

Suitable habitat for the pallid shiner is present within the Project study area. The pallid shiner inhabits large and medium-sized rivers, and occasionally streams, often at the downstream ends of sand and gravel bars. It appears to avoid heavily silted habitats, but has been collected over substrates ranging from mud, sand, gravel, and rocks. It seems to prefer slow moving waters, but has also been found in habitats with moderate to swift currents.

The western sand darter has historically occurred in the Kankakee River near the Project study area. However, it has not been collected from the Kankakee River since 1992 and was not found during the July 2014 survey. Suitable habitat for the western sand darter is present within the Project study area. The western sand darter prefers clear to slightly turbid waters with moderate to strong currents. They are often found in medium to large rivers over extensive sand flats.

Of the Illinois protected mussels, the purple wartyback (*Cyclonaias tuberculata*) was encountered in the Project study area by 2014 survey divers as both juvenile and adult specimens, indicating a reproductive colony (Ecological Specialists, Inc., 2014). The purple wartyback, a state threatened species, was found in abundance at the Kankakee River Bridge and was the dominant mussel species during the 2014 diving surveys. INHS (Illinois Natural History Survey) malacologists rank the Kankakee River near Wilmington, IL as a *Unique Aquatic Resource* for mussels, with a reproductive population of purple wartyback that is unequalled in the state.

The black sandshell mussel (*Ligumia recta*), a state threatened species, was found at two locations within the Project study area in abundance during the 2014 diving surveys.

No other living state protected species were found during the 2014 surveys.

A tactile wading survey for mussels at the Kankakee Railroad Bridge also was conducted in 2014 during the diving surveys (INHS, 2014). Ninety-five living mussels were collected representing 14 living species. An additional seven species of fresh dead to relic shells also were encountered. Among the living species collected, the state threatened, black sandshell (*Ligumia recta*) was collected as two individuals. Fresh dead specimens of the purple wartyback also were seen during this survey.

3.2.4.2 *Potential Impacts*

Federally Listed – General

The following federally-listed species do not occur in the project study area; therefore, the Build Alternative would have no effect on the:

- Hine's emerald dragonfly
- Eastern massasauga
- Eastern prairie fringed orchid
- Lakeside daisy
- Leafy-prairie clover
- Mead's milkweed
- Eryngium stem borer moth
- Snuffbox mussel

Additional documentation on this conclusion is presented in the *Biological Assessment for Section 7 Consultation* (IDOT and FRA 2014) submitted to the USFWS as a part of required Section 7 consultation.

The Build Alternative may affect, but is not likely to adversely affect the sheepnose mussel and the northern long-eared bat because of the presence of both species in the vicinity of the Project and the presence of suitable habitat for these species within the Project study area.

Federally Listed – Sheepnose Mussel

Direct Impacts. Direct impact to the sheepnose mussel habitat would result with the Build Alternative from the placement of bridge piers within the Kankakee River and temporary construction activities associated with bridge construction and removal of existing pier. Surveys conducted within the Project study area determined that preferred habitat for the sheepnose mussel was limited to the shoreline of the Kankakee River. The center of the river is primarily bedrock, and is not preferred mussel habitat. The total permanent impact to the river bed would be 0.10 acre, which would include 0.03 acre of preferred mussel habitat. Temporary impact to the river bed would be 0.72 acre, which would include 0.23 acre of preferred mussel habitat.

New Kankakee River bridge construction with the Build Alternative would use temporary cofferdams and work bridges for placing piles and heavy equipment access, respectively. Temporary cofferdams and pile placement would bury non-mobile mussel colonies. Mussel colonies are often diffuse in distribution and clustering of individuals are normally comprised of mixed species and age groups.

Shading of the river from the Build Alternative's new Kankakee River bridge would not affect the sheepnose mussel. Mussels do not utilize visual senses to survive and as a result any shading that would occur would not affect the survival of mussels once the bridge is completed. This species can be found at depths of up to 90 feet in low light or no light. Their method of feeding is by filtering flowing water and there is no need for vision for feeding. Shading also would not affect the host fish species for the sheepnose glochidia as fish would continue to move through the areas under the bridge and by doing so, provide a host for the glochidia. As a result, there would be no impacts from shading to the reproductive cycle of the sheepnose mussel.

While there may be slight changes to the temperature under the new Kankakee River bridge because of shading, this would not affect the mussels and fish as the temperature ranges in which they live are affected more by the temperature of flowing water and not the ambient air temperature under the bridge. As the potential shading is limited to a small addition to a very small area of the Kankakee River, there would be no effects to the mussels and fish from bridge shading.

Other direct impacts to the mussel would include a reduction of suitable habitat within the Kankakee River. The permanent loss of habitat would result from the expansion of existing supporting piers within the Kankakee River from a footprint of 0.05 acre to 0.10 acre.

Temporary impacts to habitat would result from the placement of coffer dams. The coffer dams would, however, would serve to minimize the broader potential indirect impacts from siltation described below. The most likely opportunity for falling construction debris would be during demolition of existing bridge piers. This activity would be contained within the coffer dams and thus any fallen debris would be easily removed, minimizing the opportunity for a wider-spread impact. Once construction is completed, the temporary coffer dams would be removed and the river bottom restored as best as possible.

Interrelated and Interdependent Impacts. Interrelated and interdependent impacts are not anticipated.

Operational Impacts. After construction of the Build Alternative, additional trains would cross the Kankakee River bridge; however, because train operation is not currently deterring the presence of mussels, it is not expected that an increase in the frequency of bridge use would have an impact on habitat quality, including water quality and presence of the appropriate substrate.

A catastrophic event such as a chemical spill in the action area has the potential to kill mussels for several miles downstream of the Proposed project, which currently exists and would continue to exist under the No Build alternative. Statistically, spill from rail lines, as well as crashes and derailments are rare events. The increase in rail traffic from this project of five passenger trains per day to nine passenger trains per day does increase the risk of significant chemical spills since passenger service does not carry hazardous materials as freight. There is an expected increase of freight trains, from the

current five per day to eleven per day under both the No Build and Build alternatives, which does not significantly increase the risk of spill events. UPRR has well-established protocols in place both to prevent crash, derailment, and spill events , as well as to respond quickly to these incidents if they do occur. In addition, by replacing the existing bridge with a wider, more modern structure, the safety of this crossing would be enhanced and potential for incidents involving a spill would be reduced.

Indirect Impacts. Temporary indirect impacts of bridge construction on mussel colonies may include siltation and sedimentation of colonies for approximately 300 feet downstream of the bridge work, which would total an area of approximately 3.6 acres (Levine, 2007). Movement of coarse sand or gravel substrates immediately downstream may occur as a result of redirected water flow. Redistribution of coarser substrates could be locally considerable and could bury sensitive mussel species. Redirected flows downstream would have potential to alter where suspended food particles (plankton) are distributed and could impact nutrition of portions of sedentary mussel colonies. Fine sediment loads would cause mussels to ingest quantities of fine sediment and expel it as waste material from the mussel's gills, which requires larger amounts of energy to be expended by the mussel with no food value present. If sediment excretion happens late in the season, it could cause mussels to expend stored food reserves that are needed to overwinter. Temporary causeways are not proposed for use during construction of the Kankakee River Bridge. Temporary work bridges and cofferdams are proposed during construction. Using these techniques rather than placing fill in the river for a temporary causeway would minimize the sedimentation associated with bridge construction and the resulting impact.

Construction of the Kankakee River bridge has the potential to impact water resources and habitat for the sheepnose mussel. Typical construction activities would involve various ground disturbing activities including clearing/grubbing, grading, filling, and excavation. The removal of vegetative cover and soil disturbance would increase the potential for erosion and could result in increased sedimentation in nearby streams. Any temporary structures placed in streams may increase turbidity (suspended solids) and temporarily alter downstream hydraulics and substrate conditions. In addition, there is the potential for pollutants, including grease and oil from construction or passenger vehicles and equipment; paint; lubricants; and construction debris to impact water quality in the area. Increased sedimentation, turbidity, or pollutant loads have the potential to affect habitat for the sheepnose mussel within the Kankakee River.

The sheepnose mussel is very intolerant of heavy metals. Adult mussels are easily harmed by toxins and degraded water quality from pollution because they are sedentary (they tend to stay in one place) (USFWS 2014). Pollution from accidental spills at construction sites, may directly kill mussels, but they also could indirectly harm the sheepnose mussel by reducing water quality, which reduces survival and reproduction, and potentially lowers the numbers of host fish (USFWS 2014).

The areas around the Kankakee River are already developed; the Build Alternative would not induce new development within the Project study area given that no passenger station is planned in Wilmington. The existing railway bridge has not deterred sheepnose

colonization in the immediate area, and reconstruction of the bridge is not anticipated to notably change the status quo.

Federally Listed – Northern Long-Eared Bat

Direct Impacts: Approximately 3.92 acres of forest are within the Project study area. The number of potential bat roosting trees proposed for removal is approximately 22. Direct impacts to bats are not expected as potential roosting trees would be removed between October 15 and March 31. Additional surveys to determine if bats are present would occur if tree removal is required outside of this time frame.

Direct impacts to hibernating habitat would not occur as hibernacula are not located near the Project study area.

The presence of white nose syndrome in Illinois would continue to threaten bat populations throughout the state.

Interrelated and Interdependent Impacts. Interrelated and interdependent impacts are not anticipated.

Operational Impacts. The increase in the number of night-time passenger trains from one to two could increase the possibility of a collision between a train and a foraging bat. As noted above, a juvenile female northern long-eared bat was captured at Forsythe Woods, indicating that a maternity colony is within 1.5 miles of the Proposed project. Given that trains would continue to pass through the Project study area only briefly, the potential for a northern long-eared bat/train collision is considered insignificant.

In terms of other potential impact from train passage, train traffic already exists in this location and an increase in train frequency would not affect the quality of nearby roosting trees as habitat. Acoustic degradation of habitat currently does occur. Train noise is already present in this location; therefore, the degradation has already occurred. In addition, almost all of the increase in train traffic with the Build Alternative would occur during the day (one additional nighttime passenger train is planned), while bats are generally foraging at night.

Indirect Impacts. The areas adjoining the UPRR in the Project study area are already developed; the proposed action would not induce new development within the Project study area. Thus, indirect impacts to the northern long-eared bat based would not occur with the Build Alternative.

State Listed

The IDNR reviewed the Natural Resource Review, with regards to impacts to state listed species for the project. Based on the IDNR review, the IDNR is requesting an ITA for the following species for the Build Alternative; the river redhorse, pallid shiner, black

sandshell mussel, and purple wartyback mussel due to the presence of these species within the Project study area:

- River Redhorse and Pallid Shiner

  - Direct Impacts: Direct impacts to the river redhorse and the pallid shiner habitat would potentially result with the Build Alternative from the placement of bridge piers within the Kankakee River and temporary construction activities associated with bridge construction and removal of existing piers. In-stream work within the Kankakee River could occur during the spawning timeframes of state listed fish species.

  - Interrelated and Interdependent Impacts. Interrelated and interdependent impacts are not anticipated.

  - Operational Impacts. After construction of the Build Alternative, additional trains would cross the Kankakee River bridge; however, because train operation is not currently deterring the presence of fish, it is not expected that an increase in the frequency of bridge use would have an impact on habitat quality, including water quality and presence of the appropriate substrate. A catastrophic event such as a chemical spill in the action area is considered very unlikely for reasons noted in the discussion above for the sheepnose mussel.

  - Indirect Impacts. Temporary indirect impacts of bridge construction on fish species could include siltation and sedimentation for approximately 300 feet downstream of the bridge work, which would total an area of approximately 3.6 acres (Levine, 2007).

    The areas around the Kankakee River are already developed; the Build Alternative would not induce new development within the Project study area given that no passenger station is planned in Wilmington. The existing railway bridge has not deterred fish in the immediate area, and reconstruction of the bridge is not anticipated to notably change the status quo.

- Black Sandshell and Purple Wartyback

  - Direct Impacts: Direct impact to the black sandshell and purple wartyback mussel habitat would result with the Build Alternative from the placement of bridge piers within the Kankakee River and temporary construction activities associated with bridge construction and removal of existing piers. Surveys conducted within the Project study area determined that preferred habitat for these listed mussels is limited to the shoreline of the Kankakee River. The center of the river is primarily bedrock, and is not preferred mussel habitat. The total permanent impact to the river bed is 0.10 acre, which includes 0.03 acre of preferred mussel habitat. Temporary impact to the river bed is 0.72 acre, which includes 0.23 acre of preferred mussel habitat.

New Kankakee River bridge construction with the Build Alternative would use temporary cofferdams and work bridges for placing piles and heavy equipment access, respectively. Temporary cofferdams and pile placement would bury non-mobile mussel colonies. Mussel colonies are often diffuse in distribution and clustering of individuals are normally comprised of mixed species and age groups.

Shading of the river from the Build Alternative's new Kankakee River bridge would not affect the mussels. Mussels do not utilize visual senses to survive and as a result any shading that would occur would not affect the survival of mussels once the bridge is completed.

While there may be slight changes to the temperature under the new Kankakee River bridge because of shading, this would not affect the mussels and fish as the temperature ranges in which they live are affected more by the temperature of flowing water and not the ambient air temperature under the bridge. As the potential shading is limited to a small addition to a very small area of the Kankakee River, there would be no effects to the mussels from bridge shading.

Other direct impacts to the mussels would include a reduction of suitable habitat within the Kankakee River. The permanent loss of habitat would result from the expansion of existing supporting piers within the Kankakee River from a footprint of 0.05 acre to 0.10 acre.

Temporary impacts to habitat would result from the placement of temporary coffer dams. The coffer dams would, however, would serve to minimize the broader potential indirect impacts from siltation described below. The most likely opportunity for falling construction debris would be during demolition of existing bridge piers. This activity would be contained within the coffer dams and thus any fallen debris would be easily removed, minimizing the opportunity for a wider-spread impact. Once construction is completed, these temporary coffer dams would be removed and the river bottom restored as best as possible.

- Interrelated and Interdependent Impacts. Interrelated and interdependent impacts are not anticipated.

- Operational Impacts. After construction of the Build Alternative, additional trains would cross the Kankakee River bridge; however, because train operation is not currently deterring the presence of mussels, it is not expected that an increase in the frequency of bridge use would have an impact on habitat quality, including water quality and presence of the appropriate substrate. A catastrophic event such as a chemical spill in the action area is considered very unlikely for reasons noted in the discussion above for the sheepnose mussel.

- Indirect Impacts. Temporary indirect impacts of bridge construction on mussel colonies may include siltation and sedimentation of colonies for approximately 300 feet downstream of the bridge work, which would total an area of

approximately 3.6 acres (Levine, 2007). Movement of coarse sand or gravel substrates immediately downstream may occur as a result of redirected water flow. Redistribution of coarser substrates could be locally considerable and could bury sensitive mussel species. Redirected flows downstream would have potential to alter where suspended food particles (plankton) are distributed and could impact nutrition of portions of sedentary mussel colonies. Fine sediment loads would cause mussels to ingest quantities of fine sediment and expel it as waste material from the mussel's gills, which requires larger amounts of energy to be expended by the mussel with no food value present. If sediment excretion happens late in the season, it could cause mussels to expend stored food reserves that are needed to overwinter. Temporary causeways are not proposed for use during construction of the Kankakee River Bridge. Temporary work bridges and cofferdams are proposed during construction. Using these techniques rather than placing fill in the river for a temporary causeway would minimize the sedimentation associated with bridge construction and the resulting impact.

Construction of the Kankakee River bridge has the potential to impact water resources and habitat for mussels. Typical construction activities would involve various ground disturbing activities including clearing/grubbing, grading, filling, and excavation. The removal of vegetative cover and soil disturbance would increase the potential for erosion and could result in increased sedimentation in nearby streams. Any temporary structures placed in streams may increase turbidity (suspended solids) and temporarily alter downstream hydraulics and substrate conditions. In addition, there is the potential for pollutants, including grease and oil from construction or passenger vehicles and equipment; paint; lubricants; and construction debris to impact water quality in the area. Increased sedimentation, turbidity, or pollutant loads have the potential to affect habitat for mussels within the Kankakee River.

Adult mussels are easily harmed by toxins and degraded water quality from pollution because they are sedentary (they tend to stay in one place) (USFWS 2014). Pollution from accidental spills, at construction sites, may directly kill mussels, but they also could indirectly harm mussels by reducing water quality, which reduces survival and reproduction, and potentially lowers the numbers of host fish (USFWS 2014).

Native freshwater mussels require a fish host to distribute their larvae (glochidia). Known fish hosts for the purple wartyback include: the black bullhead (*Ameiurus melas*), yellow bullhead (*Ameiurus natalis*), flathead catfish (*Pylodictis olivaris*) and the channel catfish (*Ictalurus punctatus*) (Cummings & Mayer 1992, Badra 2004, OSU, 2013). Host fish for the black sandshell include the bluegill (*Lepomis macrochirus*), largemouth bass, sauger, and white crappie (*Pomoxis annularis*) (Watters 1994). Additionally, yellow perch, green sunfish (*Lepomis cyanellus*), rock bass, and white perch (*Morone americana*) were identified as suitable hosts for the black sandshell by Steg (1998). Saugers are considered by some to be a primary host fish for black sandshell (Khym and Layzer. 2000).

Despite the relatively large number of host fish that carry larval black sandshell, the black sandshell appears to be declining throughout its midwestern range. While exact causes of black sandshell decline are not reported in the literature, general declines or extirpations in mussel populations are attributed to habitat changes and water quality changes that can be linked to pollution from siltation, and urban runoff. (Downing et al. 2010). Recent findings that mussel glochidia are acutely sensitive to small ammonia spikes (USEPA, 2009), indicate that ammonia runoff from lawns, turf grass, farms and perhaps wastewater treatment plant overflows during heavy rain events may contribute to a lack of recruitment for larval mussels.

The areas around the Kankakee River are already developed; the Build Alternative would not induce new development within the Project study area given that no passenger station is planned in Wilmington. The existing railway bridge has not deterred mussel colonization in the immediate area, and reconstruction of the bridge is not anticipated to notably change the status quo.

3.2.4.3 *Mitigation*

To minimize direct effects to the sheepnose mussel, black sandshell mussel, and purple wartyback mussel, all living federal and state-listed mussel specimens would be relocated from the impact area of the proposed action by contractors hired by UPRR prior to construction. Although sheepnose mussel was not found within the Project study area during 2014 surveys, it was found within 1 mile of the Project study area during another survey in the Kankakee River. Live individuals would be relocated into suitable habitat, preferably upstream of the construction area. Prior to the relocation efforts, malacologists would work with IDNR and USFWS to develop protocols in the handling, transport, and relocation of any living sheepnose mussels, if found.

BMPs also would be implemented by UPRR contractors in proximity to the bridge over the Kankakee River, as well as in proximity to tributaries of the Kankakee River, to minimize impacts to water quality. In-stream work in the Kankakee River would be performed in accordance with USACE, Chicago District – Regulatory Branch Requirements for In-stream Construction Activities. This includes the use of non-erodible cofferdams, filtering of dewatering operations, timber/work mats and the use of low ground-pressure equipment for work in wetlands as much as practical.

IDOT will commit to obtaining an ITA permit from the Illinois DNR for potential impacts to the *black sandshell and purple w*artyback. Final mitigation related to the *state-listed mussel species* will be coordinated with the IDNR during the ITA process.

Mitigation measures for the northern long-eared bat would include minimizing impacts by reducing the number of roost trees removed for the Build Alternative, as well as conducting tree removal activities between October 15 and March 31 from areas of potential summer bat habitat. Additional surveys to determine if bats are present would occur if tree removal is required outside of this time frame.

USFWS Section 7 consultation is currently on-going for the sheepnose mussel and northern long-eared bat. Final mitigation related to the sheepnose mussel and northern long-eared bat habitats are subject to the completion of on-going Section 7 consultation with USFWS.

IDOT also would obtain an ITA permit from IDNR for potential impacts to the river redhorse and pallid shiner. Final mitigation related to the river redhorse and the pallid shiner would be coordinated with the IDNR during the ITA process.

3.2.5 Special Lands

Special lands include INAI sites (including Illinois Nature Preserves), Section 6(f) sites, and Illinois Open Space Lands Acquisition and Development Act (OSLAD) sites. The Kankakee River is an INAI site. Construction of a new bridge across the Kankakee River would impact this site. There are no Section 6(f) or OSLAD sites in the Project study area.

The Illinois General Assembly established the Illinois Nature Preserves Commission (INPC) in 1963 to create a system of natural areas representative of Illinois' landscape. INAI serves as a guide for INPC when determining the eligibility of lands for protection as a Nature Preserve, Land and Water Reserve, or Natural Heritage Landmark. An INAI survey was conducted between 1975 and 1978 throughout Illinois to document areas with rare or unique communities of plants and animals. A statewide update of the INAI occurred between 2007 and 2011.

3.2.5.1 *Existing Conditions*

The Kankakee River INAI site is in the Project study area. The Kankakee River INAI site is classified as a Category II and Category III site. Category II sites have specific suitable habitat for state-listed species or state-listed species relocations. In the Project study area, the Kankakee River supports state-listed mussels and fish (see Section 3.2.4.). Category III sites are state dedicated Nature Preserves, Land and Water Reserves, and Natural Heritage Landmarks.

The Wilmington Geological Area INAI site is along Forked Creek in Wilmington. It is classified as a Category IV site. It is 2.08 acres in size. Category IV sites are outstanding geological features. This INAI site is downstream from the Project study area and outside its area of effect.

Exhibit 3-6 shows the location of the Wilmington Geological Area and Kankakee River INAI sites.

3.2.5.2 *Potential Impacts*

The No-Build Alternative would not impact any Special Lands. The placement of bridge piers within the Kankakee River and temporary construction activities associated with bridge construction and removal of existing piers would impact the Kankakee River INAI site. Bridge construction would use temporary cofferdams and work bridges for placing piles and heavy equipment access, respectively, to minimize impacts (see

Section 2.2.2). The impacts to state -listed mussels and fish, which qualify the river as a Category II INAI site and associated mitigation are addressed in Section 3.2.4.2.

3.2.5.3 *Mitigation*

As discussed in Section 3.2.4.3, impacts to state-listed mussels would be mitigated by relocating any listed mussels in the Project study area prior to construction. Live individuals would be relocated into suitable habitat, preferably upstream of the construction area. Prior to the relocation efforts, malacologists would work with IDNR and USFWS to develop protocols in the handling, transport, and relocation of any living sheepnose mussels, if found. Appropriate BMPs would be used to minimize impacts to state listed fish.

3.3 Section 4(f) Resources

Section 4(f) of the USDOT Act of 1996 (as codified in 49 U.S.C. 303) states that publicly-owned parks, recreation lands, wildlife and waterfowl refuge areas, or historic sites of national, state or local significance may not be used for USDOT funded projects unless there is no feasibly and prudent alternative to the use of such land, and such projects include all possible planning to minimize harm to these lands. There are no 4(f) properties affected by the No-Build or Build Alternatives. There are no wildlife and waterfowl refuge areas in the Project study area.

3.3.1 Historic and Cultural Resources

The Illinois Historic Preservation Agency's Historic, Architectural and Archaeological Resources Geographic Information System (HAARGIS) was consulted for the occurrence of historic properties on, or determined eligible for, the National Register of Historic Places (NRHP). Two properties listed on NRHP are in the City of Wilmington, but are not located within the Area of Potential Effect (APE) for the proposed Project. IDOT's cultural resources staff surveyed the APE and found no architectural resources eligible for inclusion in NRHP within the APE. The State Historic Preservation Office (SHPO) affirmed there would be "No Historic Properties Affected" for cultural resources within the cultural resources APE. See Appendix B for the SHPO concurrence letter. See the cultural resources discussion in Section 3.5.

3.3.2 Publically-Owned Parks and Recreation Areas

There are two publically-owned parks in the Project study area North Island Park and Children's Memorial Park. The locations of North Island Park and Children's Memorial Park are shown on Exhibit 3-7. There are no public greenways/trails in the Project study area.

Date: 01/02/2015

COMMUNITY RESOURCES

Exhibit
3 - 7

Wilmington Island, within the Kankakee River, is split by IL 53, with North Island Park to the north of IL 53 and South Island Park to the south of IL 53. North Island Park is approximately 340 feet southeast of the Kankakee River Bridge. Uses in North Island Park within 1,000 feet of the bridge include:

- Baseball diamond and concession stand
- Picnic tables
- Open/green space
- Driveway loop accessing the park facilities in the area

Special events are held at the park, such as the End of Summer Celebration, which includes waterslides, parking and staging for the Halloween Haunted Trail, and the Christmas Walk with holiday-oriented decorations. The existing bridge and trains operating on the bridge can be seen and, in the case of trains, heard from the park.

There are no park facilities within 500 feet of the UPRR. Other land uses across the Kankakee River from the park are residential to the south and light industrial and downtown retail on the north.

The Build Alternative would involve no permanent or temporary occupancy of land in North Island Park. The park is not close enough to the bridge (existing or new), the operation of trains on the bridge, or the bridge's construction to substantially impair important features, activities or attributes associated with North Island Park. Activities in the park are currently conducted with the existing UPRR in view and with the noise of trains operating on the UPRR. The new bridge would not notably change views from the park (see Section 3.1.6.2). Although noise would be generated during bridge construction and trains would pass by more frequently, no park facilities are designed for quiet contemplation or require low background noise levels, such as a concert pavilion.

Children's Memorial Park is approximately 650 feet to the west of the UPRR tracks. Uses at Children's Memorial Park include:

- Baseball diamond
- Playground
- Basketball court
- Volleyball court
- Garden/path

Children's Memorial Park is surrounded by residential development, and the UPRR and its trains cannot be seen from the Park. Noise impacts would not occur because of the

distance and residential buffer. Additionally, none of the uses at the Park are considered noise-sensitive.

3.4 Human Environment

3.4.1 Transportation

There would be no transportation impacts or travel benefits with the No-Build Alternative. The No-Build Alternative would not meet the Purpose and Need set forth by the 2012 Chicago to St. Louis HSR Program Tier 1 FEIS to which the proposed Project contributes. The Build Alternative would contribute to the benefits of the Chicago to St. Louis HSR Program, including improving passenger rail ridership, freight operational efficiency, and grade crossing and wayside safety. The Build Alternative would have no permanent impacts to vehicular traffic or public parking and no changes to access. As discussed in Section 3.4.6, no accommodations for bicycles or pedestrians would be impacted.

3.4.1.1 *Existing Conditions*

Under the current schedules, there are five daily round-trip passenger trains. The number will not change with the No-Build Alternative. The number of round-trip passenger trains would increase to nine with the Build Alternative. Freight service is currently five trains a day, which is expected to grow to 11 trains per day based on growing markets with either the No-Build or the Build Alternative.

There are four at-grade crossings in the Project study area: a public crossing at East Kankakee River Drive (MP 51.94) connecting the northeast and northwest side of Wilmington; a private crossing at Albany Street (MP 52.42) that serves a single private parcel; a public crossing at North Kankakee Street (MP 52.54), a north-south crossing connecting residential areas to downtown Wilmington; and a public crossing at North 1st Street (MP 52.99) that provides a crossing on the south side of the Kankakee River to serve the City of Wilmington. The private crossing (MP 52.42) has stop signs as crossing protection. The East Kankakee River Drive crossing (MP 51.94) and North 1st Street (MP 52.99) use flashers with no gates. The North Kankakee Street grade crossing is protected by two quadrant gates and flashers. There is a single public grade separated crossing at North Water Street.

3.4.1.2 *Potential Impacts*

Passenger Rail Ridership

The No-Build Alternative would not increase future passenger rail ridership and reduce automobile travel by improving track capacity and track condition to provide for reductions in rail travel times and increased service reliability. The single track also would not allow for growth in the number of passenger trains.

The Build Alternative, as one of the components of the Chicago to St. Louis HSR Program, would contribute to the benefits of the HSR Program and meeting the proposed Project's and the HSR Program's Purpose and Need, including the need to

reduce automobile travel by improving track capacity and track condition to provide for reductions in rail travel times and increased service reliability. The double track also would allow for growth in the number of passenger trains.

With the Chicago to St. Louis HSR Program assessed in the 2012 Tier 1 FEIS, passenger rail ridership would grow to account for 2.8 percent of all trips between Chicago and St. Louis in 2030 compared to 1.7 percent under the existing condition. Rail passenger travel time between Chicago and St. Louis would be between 3 hours and 51 minutes and 4 hours and 10 minutes with greater reliability with the Build Alternative. As documented in the 2012 Tier 1 FEIS, the HSR Program could result in an additional 35 to 39 minutes travel time savings for express trains compared with the No-Build Alternative. Amtrak travel time is currently between 5 hours and 20 minutes and 5 hours and 57 minutes. Thus, with the Build Alternative, travel times would be lessened by up to one hour and 47 minutes compared to current Amtrak schedules.

Freight Traffic and Rail Operations

The growth in demand for freight service is reflected in the growth in the number of freight trains assumed for the No-Build Alternative. Freight growth is expected to be the same with the Build Alternative since freight growth is more dependent on markets than capacity. However, the Build Alternative's construction would increase track capacity and operational efficiency. Double tracks would allow high-speed trains to pass the growing number of freight trains operating along the rail line without slowing down. This capability is essential if desired passenger rail travel times are to be achieved.

Modifications to the freight train schedule would be required to prevent conflicts with passenger rail service, although the second track would help minimize conflicts. The increased frequency of passenger trains would reduce rail time available for freight movements. Since high-speed rail operations would occur primarily during the daytime, coordination with UPRR would be required to determine if the routing of freight trains could occur outside of the peak intercity passenger periods. The UPRR would have to agree to the shift. The UPRR does support the construction of the Build Alternative and has participated in its development. Since rail capacity improvements are included in the Build Alternative, freight train reliability would not be reduced by the Build Alternative.

Construction activities for the Build Alternative would affect rail traffic temporarily and adjustments to existing operations, including reducing operating train speeds through construction zones or temporary shutdowns, would increase rail travel time and, in turn, cost. This impact would occur when upgrading tracks, adding new double-tracks, upgrading signals, installation of new bridges, and modifying grade crossings. This impact would be minimized by building the new track first, while keeping trains on the existing track and then shifting trains to the new track while improvements are made to the existing track. See the discussion of construction period assumptions in Section 2.2.2.

At-Grade Crossings

There are three public at-grade crossings: East Kankakee River Drive (MP 51.94), North Kankakee Street (MP 52.54), and North 1st Street (MP 52.99) and one private road crossing-Albany Street (MP 52.42). With the No-Build Alternative, at-grade crossing protection would not be improved and the associated motor vehicle travel safety benefit would not be achieved. The number of accidents occurring at the existing at-grade crossings could increase with community growth. Community growth would result in more travelers using public crossings at their current low level of protection described below.

The East Kankakee River Drive and the private road crossing (Albany Street) are potential candidates for closure, but their closure is not a part of either the No-Build or Build Alternative. Impacts of closure and associated mitigation would be handled in another environmental document in association with the City of Wilmington. FRA guidance related to railroad grade crossing consolidation and closure would be followed. Communication is on-going with the City of Wilmington related to the East Kankakee River Drive closure and the property owner related to the private crossing.

The East Kankakee River Drive crossing currently has flashers and no crossing gates. With the Build Alternative, four-quadrant gates would be installed if the crossing is not closed. The installation of four-quadrant gates would make it difficult for motorists to go around the gates when they are down, a safety benefit important to the operation of more frequent and higher speed trains. If the crossing were to be closed, those living and working along East Kankakee River Drive or in Wilmington west of the railroad tracks would need to use North Kankakee Street to reach IL 53 either at its intersection with North Kankakee Street or its intersection with North River Road. IL 53 is the primary north-south through highway in and out of Wilmington.

The private crossing has stop signs as crossing protection. The installation of gates and flashers would provide warning of an on-coming train and a deterrent to crossing tracks when a train is approaching that does not exist today, again a safety benefit important to the operation of more frequent and higher speed trains. If the private crossing is closed, the private property served by the grade crossing would be landlocked. Mitigation could include purchasing the entire property or providing an alternative route to a public road for the property owner.

The North Kankakee Street and North 1st Street grade crossings both have flashers as existing warning devices and four-quadrant gates would be installed with the Build Alternative. Again, a safety benefit important to the operation of more frequent and higher speed trains.

Crossings would be equipped with a 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 activate 80 seconds before a train reaches the crossing. This increase in time would cause additional vehicular delay for motorists using the highway-rail grade crossing. The combination of additional

passenger trains and longer gate down times would increase the amount of time that a crossing is blocked by approximately 20 minutes per day. This change would not be notable given that it would be split among 18 passenger trains passing through at different times of day and the potential for the additional wait time to generate traffic congestion is negligible given that the crossings are within a small rural city. With the No-Build Alternative the number of passenger train gate closures would not change.

During construction, each public at-grade crossing and the North Water Street grade separated crossing would be closed during the installation of the second track at the crossing. The construction contractor would coordinate the timing of public crossing closures with the City of Wilmington to minimize impacts to traffic flow across the tracks. Detours to alternate crossings would be marked. At the private crossing, temporary full crossing closures would either not occur or be brief and infrequent since there is no alternate access to the property served. The timing of any full closures would be coordinated with the property owner. During construction, full or partial closures of the North Kankakee Street crossing would be coordinated with the Wilmington Fire Protection District because this crossing is the primary route to the north side of Wilmington for emergency vehicles (fire and medical). Further discussion regarding this impact and associated mitigation is presented in Section 3.4.7.2.

Vehicular Traffic

The No-Build Alternative would not have any impacts on vehicular traffic.

Vehicular safety at improved grade crossings is addressed in the previous section. The Build Alternative also would result in temporary impacts to vehicular operations related to emergency services, schools, businesses, and other local activities when at-grade crossings are improved. At-grade crossing improvements would, at a minimum, require traffic to slow down as it passes through the construction zone. During temporary crossing closures, temporary diversion of traffic to adjacent crossings along marked detours would be required. The contractor would coordinate the timing of public crossing closures with the City of Wilmington to minimize impacts to traffic flow across the tracks in Wilmington, including travel to the north side of Wilmington by emergency vehicles. A portion of Railroad Road south of the Kankakee River would be closed during a part of construction. However, alternate access to homes on Railroad Road is available. Traffic maintenance planning would be coordinated with the City of Wilmington, schools, and emergency service providers.

The Build Alternative would have no permanent impacts to vehicular traffic or public parking and no changes to access. The Build Alternative would have a positive safety impact on bicycle and pedestrian movement in association with at-grade crossing protection improvements. Fencing installed along the UPRR ROW at the at-grade crossings would channel pedestrians and bicyclists wanting to cross the tracks to the improved at-grade crossings.

Overall traveler safety in the Chicago to St. Louis HSR Program corridor would increase as travelers divert from automobile to rail since rail is a safer mode of travel.

Wayside Industry with Rail Service

Wayside industry in the Project study area includes two large industrial facilities. These industries are served by an existing spur line accessed from UPRR. Coordination with these industries would occur during construction to minimize rail service impacts.

Public Parking

There would be no displacements of public parking spaces with either the Build or No-Build Alternatives.

3.4.1.3 *Mitigation*

During the construction period, coordination would occur between the contractor and the railroads, wayside industries, local government and school officials, and the Wilmington Fire Protection District to minimize construction period transportation impacts.

3.4.2 Community and Land Use

The Build Alternative would involve the acquisition of approximately 4.08 acres of additional railroad ROW and 1.82 acres of temporary easements, and would not result in a notable change to the surrounding community and existing land use except for visual change at the neighborhood west of the UPRR between East Kankakee River Drive and Stewart Street (see Section 3.1.6.2).

The zoning in the Project study area is industrial, commercial, and residential. There would be no relocations required for either the Build or No-Build Alternative. North Island Park is approximately 340 feet southeast of the UPRR, but would not be affected by either Build or No-Build Alternatives (see Section 3.3.2). The Wilmington Fire Protection District uses the North Kankakee Street crossing as the primary route to the north side of Wilmington for emergency vehicles (fire and medical). During construction, full or partial closures of the North Kankakee Street crossing would be coordinated with the Wilmington Fire Protection District. The Build Alternative is consistent with the City of Wilmington's Comprehensive Plan (2008) goal to support public transportation systems. Neither the Build nor No-Build Alternative would have an impact on community cohesion.

3.4.2.1 *Existing Conditions*

The City of Wilmington Comprehensive Plan is the city's guiding document for policy decisions regarding land use, transportation, and urban design, and seeks to communicate a vision of the built environment. According to this plan, the community is served by 12 churches, two elementary schools, one middle school, one high school, a library, one weekly newspaper, a movie theatre, and up to 24 services organizations. The Wilmington Fire Protection District station is approximately 225 feet south of the UPRR tracks at Main Street. Wilmington's North Island Park is approximately 340 feet south of the UPRR tracks at the Kankakee River. These community resources are shown on Exhibit 3-7.

The City of Wilmington Comprehensive Plan states several goals, which include maintaining the single-family residential character, preserving the City's historic downtown, maintaining recreational and park space, establishing recreational and park space along the Kankakee River shoreline, creating a responsible land use composition, limiting government service tax increases, etc. The most relevant goal related to the proposed Project is the plan's indication of support of public transportation systems, including high-speed rail, PACE bus authority and Metra.

The Project study area includes commercial/industrial land use areas, some residential land use areas, no agricultural land use areas, and the Kankakee River and Forked Creek. The Wilmington Park District's North Island Park and South Island Park are on Wilmington Island, just southeast of the Project study area in the Kankakee River.

Zoning in the Project study area is shown in Exhibit 3-8. Within the Project study area, the predominant zoning is industrial, commercial, and residential. There is no land in the Project study area zoned for agriculture.

Along the northern portion of the Project study area, single-family residences are west of the UPRR tracks and industrial facilities (Dow Chemical and International TransLoad Logistics) are to the east. A spur track from the UPRR mainline serves one industry, DOW Chemical. The central portion of the Project study area crosses Forked Creek.

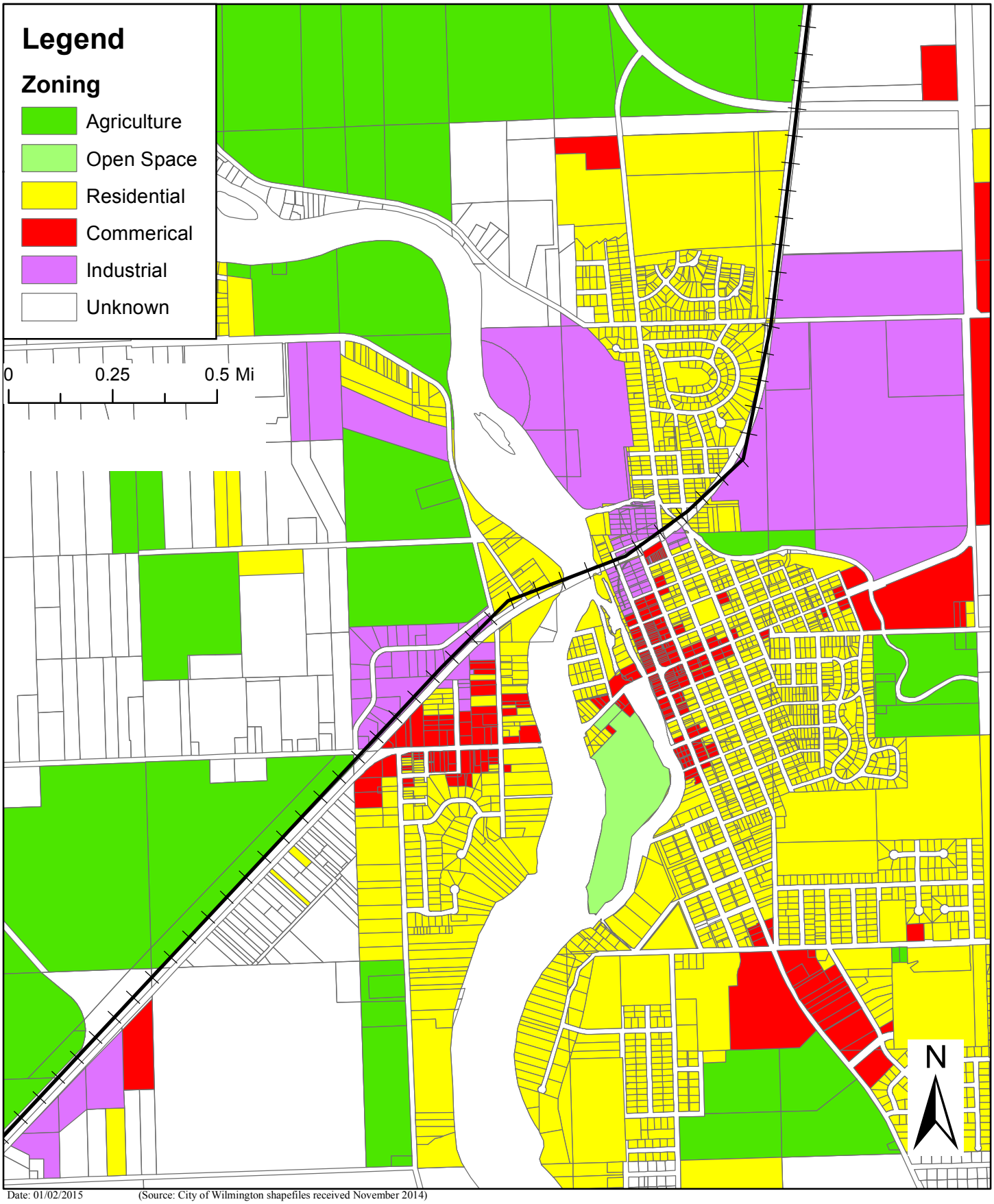
Along the central portion of the Project study area, the Wilmington central business district is to the south and industrial operations are to the north. The southern portion of the Project study area begins at the crossing of the Kankakee River. The southern portion of the Project study area consists of mixed industrial, commercial, and residential land uses. No residential neighborhoods extend across the tracks; the railroad creates a natural divide between neighborhoods.

3.4.2.1 *Potential Impacts*

The No-Build Alternative would not affect the Wilmington community or its land use. As shown in Table 3-17, the Build Alternative would involve the acquisition of approximately 4.08 acres of additional ROW and 0.81 acres of easements.

Table 3-17. New Right-of-Way and Temporary Construction Easements

Land Use	Residential	Industrial	Commercial	Total
ROW (acres, %)	1.90 (47%)	2.18 (53%)	0 (0%)	4.08
Easement (acres, %)	0.50 (28%)	0.15 (8%)	0.16 (9%)	0.81



Date: 01/02/2015 (Source: City of Wilmington shapefiles received November 2014)

CITY OF WILMINGTON ZONING

Exhibit

3 - 8

Residential and Business Relocations

No residential or business relocations would occur with either the No-Build or Build Alternative. Land for new ROW and temporary construction easements that would be purchased is currently unused. There would be no business impacts because of loss of parking or change in access.

ROW and temporary construction easement purchases would be conducted in compliance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Uniform Relocation Act) (42 USC Sections § 4601 et seq.), as amended, and the USDOT implementing regulations, 49 CFR part 24. The Uniform Relocation Act applies to all federal or federally assisted activities that involve the acquisition of real property or the displacement of residences or business. The provisions of the State of Illinois Relocation Assistance Plan in accordance with the Uniform Relocation Act would not apply since there would be no relocations.

Community Service and Facility Impacts

There would be no displacement or other direct impacts to City of Wilmington community services or facilities with either the No-Build or Build alternatives.

There would be no alteration to the existing street grid, except for short-term temporary closures during construction, impacts to these serves and facilities would be minimal. In some cases, temporary diversion of traffic to adjacent crossings would be required, affecting emergency services, schools, businesses, and other local activities requiring vehicular movement across the tracks (see Section 3.4.1.2 under "Vehicular Traffic").

There would be no impacts to parks and recreation facilities (see Section 3.3.2).

Land Use Plan and Planning Goal Compatibility

The No-Build Alternative would not support the planning goals set forth by the City of Wilmington that aim to promote the development of public transportation.

Implementation of the Build Alternative would be compatible with the City of Wilmington's land use planning goals and redevelopment plans. The plan intends to increase industrial and commercial land use along the UPRR, and both uses are compatible with the adjoining rail service. The land use plan states that larger scale commercial developments, light industrial research and light industrial manufacturing should occur along major transportation routes.

As stated in Section 3.4.2.1, Wilmington discusses several goals in its Plan, which would not be hindered by the Build Alternative. The proposed Build Alternative directly supports the goal which states "Wilmington will support public transportation systems." Further, the Plan states "Wilmington will offer whatever practical assistance it can for these transit projects," in regards to high-speed rail, PACE, and Metra. This support for high-speed rail underscores the city's support for the Build Alternative. The plan, however, also indicates that the city would like a high-speed rail station. A passenger rail station does not currently exist in Wilmington. Passenger rail stations are

not included in the Build Alternative and they are not incorporated into the Chicago to St. Louis HSR Program.

The goal for maintenance and improvement of park and recreational space would be supported since the Build Alternative would not impact parks or recreational spaces within the Project study area (see Section 3.3.2). According to information received from the City of Wilmington in late 2014, Wilmington is in the planning phase for three park and recreational space projects, including enhancements to North and South Island Parks, and the development of two new parks, Bobcat and Celotex. Enhancements at North Island Park could include a 0.7-mile trail improvement with a historic theme that could be connected to South Island Park, a new entrance location, and native woodland restoration. Proposed improvements to South Island Park could include a 1.75-mile interpretive historic trail system, ecological restoration, shoreline stabilization, potential dam improvements, and an outdoor fitness station area. Concept plans for Bobcat Park, to the west of North 1st Street and north of the UPRR ROW, include restored wetland, prairie, and upland hardwoods, a bike/pedestrian trail, and interpretive signs. Concept plans for Celotex Park, located north of Forked Creek along the Kankakee River include restored wetlands, riparian forest, riparian marsh, a bike/pedestrian trail, interpretive signs, picnic area, community garden, dog park, and canoe/kayak launch site. Based on the locations of these park and recreational sites in relation to the UPRR, the Build Alternative would not interfere with the development of any of these sites. The locations of the parks are shown on Exhibit 3-7.

Community Cohesion Impacts

The No-Build Alternative would not affect community cohesion in the Project study area, since there would be no change to the UPRR. Safety benefits for motor vehicles, pedestrians, and bicyclists associated with at-grade crossing improvements, however, would not occur.

The Build Alternative would not impact community cohesion because the proposed Project is improving an existing railroad ROW, existing grade crossings would remain open, and no community facilities or services would be affected. The Build Alternative would have a positive safety impact on motor vehicle, bicycle, and pedestrian movement in association with at-grade crossing protection improvements.

Other Community Impacts

Other types of impacts that also affect the community are discussed in the Section 3.1, "Physical Environment." They are:

- Air quality (discussed in Section 3.1.1)
- Noise and vibration (discussed in Section 3.1.4)
- Aesthetic environment and scenic resources (discussed in Section 3.4.1)

The No-Build Alternative would not affect air quality, noise and vibration, or the aesthetic environment. The Build Alternative would not cause air quality impacts.

Noise impacts would be moderate to severe at residential properties with the Build Alternative. Train horn noise would be the dominant noise source, which would increase with the Build Alternative. However, the Build Alternative includes various SSMs, including four-quadrant gates, which would enable the City of Wilmington to designate a quiet zone (no horn blowing), if desired. With quiet zones, noise levels with the Build Alternative would be less than current levels. Vibration impacts, because of increased passenger rail speed, would occur at two residential receptors. Standard maintenance procedures, such as regularly rail grinding, wheel truing programs, vehicle reconditioning programs, and use of wheel-flat detectors would help minimize vibration impacts. With the Build Alternative, a visual impact would occur for the residential development from East Kankakee River Drive to Stewart Street where vegetation removal would open up views from homes of the UPRR tracks, trains, and industrial develop on the east side of the tracks. Views of backyards would be opened up for Amtrak users.

3.4.2.2 *Mitigation*

Mitigation, in the form of detours, would be provided when at-grade crossings are closed during construction (see Section 3.4.1.3). Mitigation, associated with noise and vibration impacts, is described in Section 3.1.4.1 under "Noise Impact Abatement Measures" and in Section 3.1.4.2 under "Vibration Mitigation." Mitigations associated with residential visual impact, is described in Section 3.1.6.3.

3.4.3 Demographics

Table 3-18 shows that the population for several jurisdictions in the Project study area. The populations of the City of Wilmington, Will County, and Illinois have grown between 2000 and 2010. The rate of growth has been the greatest at the county level, which saw population growth of 34.9 percent. The City of Wilmington saw population growth of 11.5 percent, and the State of Illinois saw population growth of 3.2 percent. Census block groups adjacent to the Build Alternative have seen population growth of 21.6 percent, which falls between the growth rates of Wilmington and Will County. Block group boundaries are shown in Exhibit 3-9). The percent change in total households generally reflects the percent change in total population.

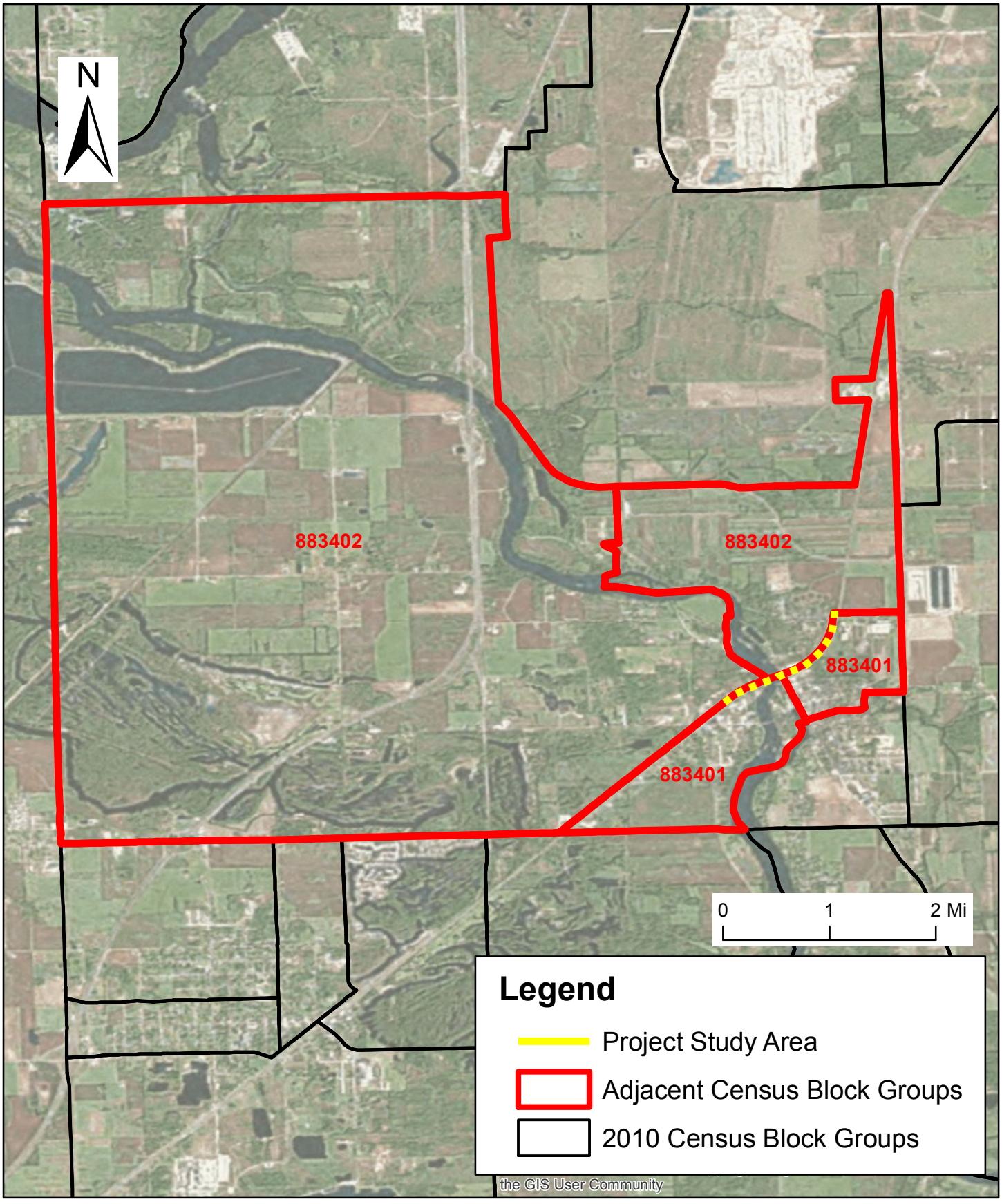
3.4.3.1 *Racial and Ethnic Minority Population*

Table 3-19 illustrates that in the blocks adjoining the UPRR, (shown in Exhibit 3-10), the average racial and ethnic minority populations are less than 10 percent, comparable to those in Wilmington as a whole, and substantially less than the minority population of Will County and the State of Illinois. These numbers are discussed from the perspective of Environmental Justice in Section 3.4.5.

Table 3-18. Population Change

Census Geographies	2000	2010	Percent Change
Census Block Groups – Total Population* • Year 2000: 883400-2, 883400-3, 883400-4 • Year 2010: 883401-1, 883401-3, 883402-1, 883402-2	3,057	3,717	21.6%
Census Block Groups – Total Households* • Year 2000: 883400-2, 883400-3, 883400-4 • Year 2010: 883401-1, 883401-3, 883402-1, 883402-2	1,247	1,560	25.1%
City of Wilmington – Total Population	5,134	5,724	+11.5%
City of Wilmington – Total Households	1,991	2,246	+12.8%
Will County – Total Population	502,266	677,560	+34.9%
Will County – Total Households	167,542	225,256	+34.5%
State of Illinois – Total Population	12,419,293	12,830,632	+3.2%
State of Illinois - Total Households	4,591,779	4,836,972	+5.1%

Source: American FactFinder and USA.com
*Census Geographies change in area and location between 2000 and 2010



Date: 01/02/2015

ADJACENT BLOCK GROUPS

Exhibit
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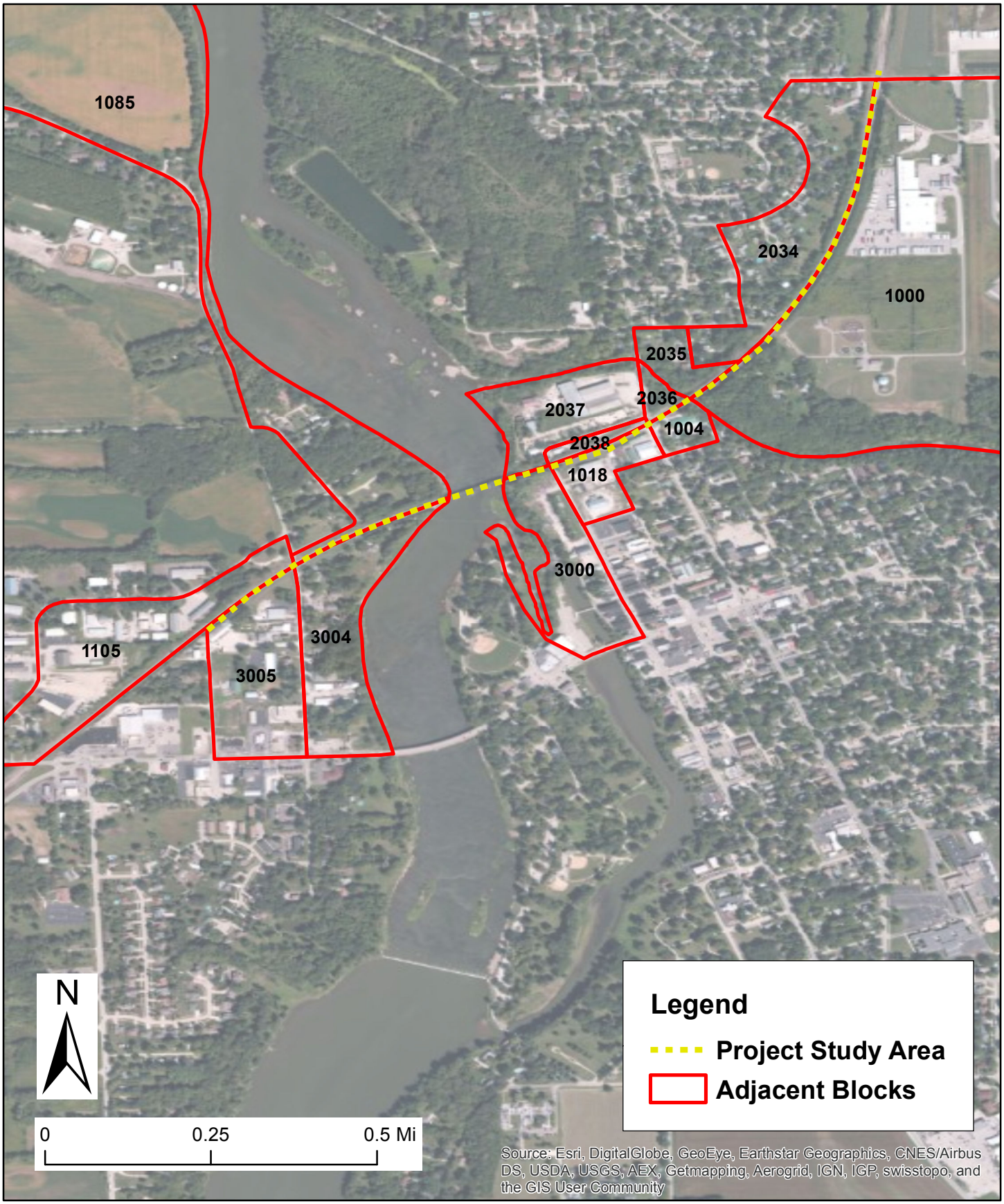
Table 3-19. Race and Ethnicity

Will County Census Blocks Adjacent to UPRR	Population	White	Black or African American	American Indian and Alaska Native	Asian	Two or More Races	Total Racial Minority*	Hispanic or Latino
883401 Block 1000	4	75%	0%	0%	0%	25%	25%	0%
883401 Block 1004	3	100%	0%	0%	0%	0%	0%	0%
883401 Block 1018	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
883401 Block 3000	22	100%	0%	0%	0%	0%	0%	0%
883401 Block 3004	83	100%	0%	0%	0%	0%	0%	6%
883401 Block 3005	8	100%	0%	0%	0%	0%	0%	0%
883402 Block 1085	60	98%	0%	0%	2%	0%	2%	0%
883402 Block 1105	8	100%	0%	0%	0%	0%	0%	0%
883402 Block 2034	104	94%	0%	1%	0%	1%	2%*	13%
883402 Block 2035	11	100%	0%	0%	0%	0%	0%	0%
883402 Block 2036	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
883402 Block 2037	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
883402 Block 2038	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals for Blocks Adjacent to UPRR	303	295	0	1	1	2	4	19
City, County, and State Level								
City of Wilmington	5,724	96.1%	0.8%	0.3%	0.3%	1.4%	2.80%	4.2%
Will County	677,560	76%	11.2%	0.3%	4.6%	2.3%	18.40%	15.6%
Illinois	12,830,632	71.5%	14.5%	0.3%	4.6%	2.3%	21.70%	15.8%

Source: Census data provided from American Factfinder for 2010
*Does not include the Census category "Some Other Race alone"



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ADJACENT BLOCKS

Exhibit

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3.4.3.2 *Household Income and Poverty*

Table 3-20 shows income data at the block group level. Median household income in two of the four block groups that include households living near the tracks are of the same order-of-magnitude as Wilmington as a whole, Will County, and the state. The exceptions are block groups 883401-3 and 883402-2, which are substantially lower incomes. The 883401-3 block group is east of the UPRR tracks and south of the Kankakee River. The 883402-2 block group is west of the UPRR tracks and north of the Kankakee River.

Table 3-20. Income and Poverty

Will County Census Geography		Median Household Income	Family in Poverty
Tract 883401	Block Group 883401-1	$56,161	8.9%
	Block Group 883401-3	$37,833	41.8%
Tract 883402	Block Group 883402-1	$69,706	8.2%
	Block Group 883402-2	$50,696	17.3%
City of Wilmington		$58,488	3.7%
Will County		$76,352	5.0%
Illinois		$56,853	9.2%

Source: USA.com and American FactFinder

Table 3-20 also shows families in poverty at the block group level. As with household income, families in poverty are in two of the four block groups that include households living near the tracks also are of the same order-of-magnitude as Wilmington as a whole, Will County, and the state. The exceptions again are block groups 883401-3 and 883402-2, which are substantially higher poverty rates.

The block groups adjacent to the Project study area are large geographical areas, as shown on Exhibit 3-9. Block group level data is the most specific level of census data available for income and poverty data and is not descriptive of the area that could be affected by the Build Alternative, meaning that conclusions cannot be reached using Census data alone. Property tax values within approximately 1,000 feet of the Project study area are somewhat lower compared to the City of Wilmington in general. Field observations indicate that housing in the Project study area does not appear to be that of a low-income population, single family and in good repair. Coordination with the City of Wilmington also confirmed that the housing in the Project study area does not include

concentrations of low-income households. (Tony Graff, City Administrator, 2015, personal communication).

3.4.3.3 *Housing Units*

The block groups cover large geographical areas, as shown on Exhibit 3-9. The number of housing units (U.S. Census, 2010) and the approximate number of units within 500 feet on either side of the UPRR tracks, as determined from a review of aerial imagery, are presented in Table 3-21.

Table 3-21. Housing Units

Census Geography	Number of Housing Units (2010 Census)	Housing Units identified within 500 feet of the UPRR tracks
Block Group 883401-1	424	16
Block Group 883401-3	347	14
Block Group 883402-1	577	6
Block Group 883402-2	483	80

In block group 883401-1, the homes are separated from the UPRR by industrial land with the exception of a single home. In block group 883401-3, most of the homes front the Kankakee River. Block group 883402-2 includes two neighborhoods near the UPRR tracks, one is found north of East Kankakee River Drive and the other is neighborhood adjacent to the tracks between East Kankakee River Drive and Albany Street. Block group 883402-1 contains few housing units, which mostly line the south shore of the Kankakee River.

While housing values are somewhat lower along the rail line compared to the City of Wilmington in general, field observations indicate that the housing units within 1,000 feet on either side of the UPRR tracks are in good condition.

3.4.4 Economics and Employment

The top three major employment industries in the City of Wilmington and Will County are educational services, health care, and social assistance (grouped together), retail trade, and manufacturing. The No-Build Alternative would not impact employers or industries as there would be no change to the existing conditions. No businesses or business parking would be displaced by the Build Alternative.

3.4.4.1 *Existing Conditions*

The major employment industries in City of Wilmington are consistent with the major employment industries in Will County, Illinois (see Table 3-22). Wilmington's highest employment industries are educational services, health care, and social assistance (18.5 percent), retail trade (14.8 percent), and manufacturing (13.3 percent). Will County has the highest percentage of employment in educational services, healthcare, and social assistance (20.6 percent), followed by manufacturing (12.0 percent), and retail trade (12.0 percent).

Table 3-22. Employment by Industry

Industry	Will County Employment		Wilmington Employment	
	Total	Percent	Total	Percent
Civilian employed population 16 years and over	322,166	-	2,601	-
Agriculture, forestry, fishing and hunting, and mining	1,654	0.5%	65	2.5%
Construction	24,269	7.5%	286	11.0%
Manufacturing	38,809	12.0%	345	13.3%
Wholesale trade	12,591	3.9%	40	1.5%
Retail trade	38,658	12.0%	386	14.8%
Transportation and warehousing, and utilities	23,925	7.4%	293	11.3%
Information	6,930	2.2%	53	2.0%
Finance and insurance, and real estate and rental and leasing	24,733	7.7%	119	4.6%
Professional, scientific, and management, and administrative and waste management services	33,698	10.5%	148	5.7%
Educational services, and health care and social assistance	66,310	20.6%	481	18.5%
Arts, entertainment, and recreation, and accommodation and food services	25,158	7.8%	229	8.8%
Other services, except public administration	13,950	4.3%	105	4.0%
Public administration	11,481	3.6%	51	2.0%

Source: American FactFinder (2006-2010) Industry by Occupation

Rates of employment status are similar between Will County and City of Wilmington (see Table 3-23). The percentages of the population in the labor force are between approximately 67 and 71 percent. The employed population, which does not include Armed Forces or those not in the labor force are between approximately 60 and 64 percent. The unemployment rate is between approximately 9 and 12 percent.

Table 3-23. Employment Status

Employment Status	Will County	Wilmington
Total Population 16 and over	505, 541	4,716
In Labor Force	357,260 (70.7% of total population)	3,179 (67.4% of total population)
Employed*	324,409 (64.2% of total population)	2,808 (59.5% of total population)
Unemployment*	32,636 (9.1% of labor force population)	371 (11.7% of labor force population)

Source: American FactFinder 2012 Selected Economic Data
*Does not include in Armed Forces or Not in Labor Force

3.4.4.2 *Potential Impacts*

The No-Build Alternative would not impact employers or industries as there would be no change to the existing condition. No businesses or access to parking would be displaced by the Build Alternative. The Build Alternative would create construction jobs.

3.4.4.3 *Mitigation*

No mitigation measures would be required as there are no economics and employment impacts due to the Build Alternative.

3.4.5 Environmental Justice and Title VI

Executive Order 12898 and USDOT Order 5610.2, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires federal agencies to incorporate environmental justice into their planning process. They prohibit federal financial assistance for programs and activities that use criteria and methods or practices that discriminate on the basis of race, color or national origin. The goal is to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations. The Executive Order applies to the U.S. Department of Transportation as well as several other federal departments. In addition, Title VI of the Civil Rights Act of 1964 provides that "no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied

benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Executive Order 12898 provides that "each Federal agency will identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations, but not limited to, as appropriate for its mission, in the following areas: 1.) implementation of the National Environmental Policy Act; 2.) implementation of Title VI of the Civil Rights Act of 1964, as amended; 3.) impacts from climate change; and 4.) impacts from commercial transportation and supporting infrastructure ('goods movement')". An impact is considered disproportionately high when it is either predominately borne by a minority or low-income population, or will be suffered by the minority population or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population or non-low-income population.

Executive Order 12898 defines minorities as individuals of American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic racial heritage. Minority populations are defined as those where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

As described in Section 3.4.3, the UPRR and the Project study area is not adjacent to communities containing concentrations of racial or ethnic minorities or low-income households. Therefore, neither the No-Build Alternative nor the Build Alternative would have disproportionate impacts to minority or low-income populations. In addition, no other disadvantaged groups were identified in the Project study area.

3.4.6 Barriers and Accessibility

The Build Alternative provisions for pedestrians at railroad crossings, where proposed, would meet Americans with Disabilities Act (ADA) requirements.

3.4.6.1 *Existing Conditions*

In the Project study area, North Kankakee Street (MP 52.54) has a sidewalk on the north side of the street and a pedestrian grade crossing at the railroad crossing. Sidewalks or other provisions to pedestrians do not lead to or cross (pass under at N. Water Street) any of the other street crossings of the UPRR in the Project study area. There are no rail stations in the Project study area.

3.4.6.2 *Potential Impacts*

The Build Alternative would have no impact regarding station and platform-oriented issues related to ADA accessibility or access for elderly because there are no stations within the Project study area. Grade crossing improvements at North Kankakee Street would meet the requirements of ADA at the sidewalk crossing on the north side. The North Kankakee Street pedestrian crossing would be closed temporarily during grade

crossing improvement construction. No provisions for pedestrians would be installed at other track crossings since the streets leading up to the crossings make no provision for pedestrians. There are no local plans or projects for new bicycle or pedestrian accommodations for any of the street crossings in the Project study area. There would be no change to existing rail crossings with the No-Build Alternative.

3.4.7 Public Health and Safety

The Build Alternative would include safety improvements along the rail line at grade crossings. The UPRR ROW would be fenced intermittently from East Kankakee River Drive to the terminus of the Build Alternative south of North 1st Street. As a part of the Chicago to St. Louis HSR Program, overall traveler and rail operational safety in the Chicago to St. Louis corridor would increase with the Build Alternative.

3.4.7.1 *Existing Conditions*

There is no railroad ROW fencing along the existing railroad ROW to discourage trespassing. Local land use in the Project study area, is such that there are no destinations on opposite sides of the track (e.g., residential on one side and neighbors or a park on the other side) that tempt or encourage pedestrians to cross the tracks between grade crossings. As indicated in Section 3.4.6.1, the North Kankakee Street (MP 52.54) railroad crossing is the only crossing in the Project study area with provisions for pedestrians. The location of community resources, including emergency services, schools, parks, and churches, is shown on Exhibit 3-7. The North Kankakee Street at-grade crossing is the primary route to the north side of Wilmington for emergency vehicles (fire and medical) coming from the Wilmington Fire Protection District station on Main Street.

3.4.7.2 *Potential Impacts*

The Build Alternative includes railroad ROW fencing on the west side of the tracks adjacent to development in the East Kankakee River Drive area and from development in the Stewart Street area to Forked Creek. Fencing would be installed on both sides of the UPRR ROW from Forked Creek to the Kankakee River and from the Kankakee River to the southern end of the Build Alternative at MP 53.19. The locations of the proposed fencing improvements are depicted on Exhibit 2-1. Public at-grade crossings would be upgraded to include four quadrant gates. Grade crossing improvements at North Kankakee Street would include a gate at the sidewalk crossing on the north side of the street. No provisions for pedestrians would be installed at other track crossings since the streets leading up to the crossings make no provision for pedestrians. Because the number of passenger trains operating along the rail line would increase, the Build Alternative would increase crossing gate down periods from 10 per day to 16 per day. All crossings would 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 the high-speed passenger trains, crossing gates would activate 80 seconds before a train reaches the crossing.

The installation of upgraded grade crossing protection, increased warning times, upgraded track, and fencing would improve wayside and crossing safety, discourage

trespassing on the railroad tracks, and accommodate the increase in passenger train speeds. Four-quadrant gates would reinforce driver-gate compliance by making it more difficult for motor vehicles to go around the gates.

The Wilmington Fire Protection District station, which also houses Emergency Medical Services (EMS) is in close proximity to Water Street Bridge. Fire and EMS response times would not be affected during the reconstruction of the Water Street Bridge because Fire and EMS vehicles use the Main Street access for the station rather than Water Street. Fire trucks cannot pass under the Water Street Bridge because of its low clearance height. According to a representative of the Wilmington Fire Protection District, the reconstruction of the N. Kankakee Street crossing and any associated partial or full temporary closures would need to be coordinated with the Wilmington Fire Protection District because since it is their primary route to the north side of town (Lieutenant Mike Hermes, 2014 personal communication). There are two other crossings that the fire trucks can use to cross the tracks – East Kankakee River Drive and North River Road—when needed. Locations of schools, parks, and churches also are indicated on Exhibit 3-7. Those traveling across the tracks to reach these services would receive the same benefits from the improved grade crossings as all other travelers.

To improve rail operational safety, the Build Alternative would include a state-of-the-art signal and communications system that would meet regulatory requirements for 110 mph operations. It would coordinate freight and passenger operations and permit joint service to share the same track. Subject to acceptance by the FRA and UPRR, it is assumed that PTC technology would be used in locomotives. One aspect of PTC is that train speed limits are automatically enforced.

As a part of the Chicago to St. Louis HSR Program, the Build Alternative would contribute to the overall traveler safety along the rail line. The passenger-miles traveled by rail in the Chicago to St. Louis corridor is expected to rise to 328 million passenger miles from the existing 114 million passenger miles by 2030. 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 based on information presented in Section 2.3.2 of the 2012 Tier 1 FEIS for the Chicago to St. Louis HSR.

The No-Build Alternative would not offer the safety benefits of the Build Alternative. Construction period impact to safety during improvement of the at-grade crossings would not occur.

3.4.7.3 *Mitigation*

Measures would be taken during the construction phase to coordinate with the City of Wilmington and emergency service providers to minimize the effects of railroad crossing improvement construction on emergency vehicle travel.

3.4.8 Hazardous Materials and Waste

Potential hazardous materials affecting the Project study area were evaluated in a Draft Preliminary Environmental Site Assessment (PESA) Report (Parsons Brinckerhoff, 2014).

The assessment was prepared using historical and geological information including aerial photographs, USGS topographic maps, Sanborn Fire Insurance Maps, historical street directories, and various other sources of historical information. An environmental database search report was obtained from Environmental Data Resources (EDR) of Shelton, Connecticut to gather environmental regulatory database information. The assessment also included an on-site field visit. The PESA report was prepared in compliance with ISGS PESA Manual entitled "*A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Infrastructure Projects"* (Illinois State Geological Survey, 2012). Nineteen sites with potential hazardous materials potentially affecting the Project study area were identified and are shown in Exhibit 3-11.

3.4.8.1 *Existing Conditions*

Within or adjacent to the Project study area, the PESA report identified 19 locations with recognized environmental conditions (RECs), six locations with *de minimis* conditions, and one location with neither a REC nor *de minimis* condition. Three of the listed RECs are within the UPRR ROW. Generally, the areas of concern identified in the PESA fall into the following categories:

1. Industrial Railroad Use
2. Potential former and or current use of chemicals
3. Former Above Ground Storage Tank (ASTs) and Underground Storage Tanks (USTs)
4. Potentially impacted soils and/or presence of monitoring wells
5. Potential former, as well as, current use of environmentally sensitive chemicals
6. Landfill, former dumping, natural gas pipeline
7. Potential drums, batteries, surficial stains, solid waste
8. Possible presence of Asbestos-Containing Materials (ACM), and Lead-Based Paint (LBP).

The reasons given for the *de minimis* conditions at six sites are:

1. Potential ACM and LBP (Site ID #8, #10,, #12, and #18).
2. Likely agriculture pesticide or herbicide use (Site ID #3 and #20).

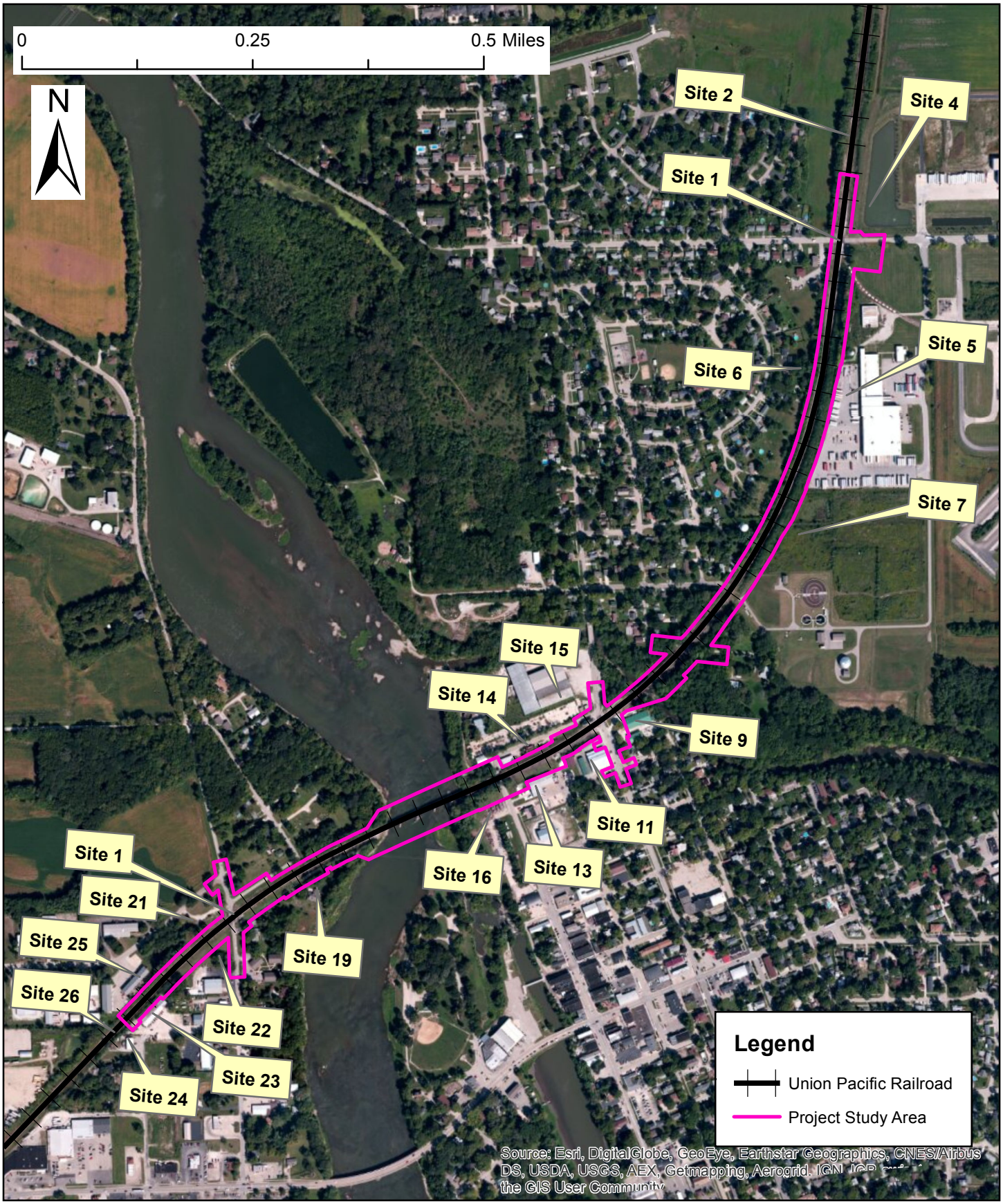
The site ID numbers correspond to the site numbers presented on Exhibit 3-11.

The 19 REC sites are listed below. Those within the Build Alternative's proposed ROW or temporary construction easements are marked with an asterisk.

1. Site ID# 1 – Kankakee River Bridge and Track Improvements Project study area, MP 51.92 to 53.20: Industrial railroad use*

2. Site ID# 2 – Railroad segment: Industrial railroad use*

3. Site ID# 4 – US Cold Storage: The site is listed in the Leaking Underground Storage Tank (LUST), IL SPILLS, and Bureau of Land (BOL) databases, known soil or groundwater contamination*



Date: 01/02/2015

POTENTIAL HAZARDOUS MATERIALS SITES

Exhibit 3 -11

4. Site ID# 5 – ITL Facility: The site is listed in the Resource Conservation and Recovery Act Small Quantity Generator (RCRA-SQG), LUST, IL SPILLS, BOL, and UST databases, former USTs, industrial railroad use *

5. Site ID# 6 – Residential Properties: Former industrial railroad use*

6. Site ID# 7 – Wilmington Wastewater Treatment Plant: Filled pond or lagoon, probable water treatment chemical usage*

7. Site ID# 9 – Wilmington Overhead Door: Former Industrial Railroad Use*

8. Site ID# 11 – Mid Town Market and Storage: Former industrial railroad use, former coal storage*

9. PB Site ID# 13 – Wilmington Fire Department: Former industrial railroad use, possible asbestos material in soil*

10. Site ID# 14 – Vacant Industrial Property: ASTs, possible asbestos material in soil

11. Site ID# 15 – Vacant Industrial Facility: ASTs, a dump, placement of fill soil along Kankakee River, possible asbestos material in soil*

12. Site ID# 16 – Contractor Brickyard: Drums and ASTs, placement of fill soil in former mill race, possible asbestos material in soil, former machine shop*

13. Site ID# 19 – Residential Properties: Historic coal storage and loading, former industrial railroad use*

14. Site ID# 21 – Undeveloped Property: Former ASTs*

15. Site ID# 22 – Shred X: The site is listed in the RCRA-SQG and BOL databases, historic machine and paint shops, and former gasoline USTs

16. Site ID# 23 – Illinois Central School Bus Garage: The site is listed in the ERNS, UST, and BOL databases, possible use of chemicals and/or petroleum products in repair activities, gasoline ASTs, former USTs, spill of diesel fuel

17. Site ID# 24 – Vehicle Repair Facility: Possible use of chemicals and/or petroleum products in repair activities, petroleum AST

18. Site ID# 25 – Commercial Property: Probably fill soil*

19. Site ID# 26 – Railroad Segment: Industrial railroad use

3.4.8.2 *Potential Impacts*

Table 3-24 indicates the REC sites identified in the Project study area and the potential impacts resulting from construction of the Build Alternative. The No-Build Alternative would not impact these sites.

Table 3-24. Potential REC Impacts

Site ID #	MP	Side of Track	Acres Potentially Impacted (Approximate)	Reason for Potential Impact
1	51.88 to 53.20	N/A	27.20	UPRR Existing ROW
2	51.84 to 51.88	N/A	0.54	UPRR Existing ROW
4	51.88 to 51.93	East	0.18	Proposed ROW
5	51.94 to 52.20	East	1.14	Proposed ROW
6	51.93 to 52.48	West	0.97 (0.16 ROW and 0.81 Easement)	Proposed ROW and Construction Easement
7	52.20 to 52.33	East	0.44	Proposed ROW
9	52.47 to 52.52	East	0.17	Construction Easement
11	52.53 to 52.57	East	0.03	Construction Easement
13	52.59 to 52.63	East	0.09	Construction Easement
14	52.56 to 52.63	West	0	N/A
15	52.65 to 52.69	West	0.07	Construction Easement
16	52.65 to 52.69	East	0.40 (0.24 ROW and 0.16 Easement)	Proposed ROW and Construction Easement
19	52.77 to 52.81	East	0.15	Proposed ROW
21	53.02 to 53.17	West	0.11	Proposed ROW
22	53.04 to 53.11	East	0	N/A
23	53.13 to 53.19	East	0	N/A
24	53.19 to 53.21	East	0	N/A
25	53.17 to 53.19	West	0.08	Proposed ROW
26	53.18 to 53.22	N/A	0.77	UPRR Existing ROW
Total			32.34	

3.4.8.3 *Mitigation*

Special waste issues that may arise in the construction phase would be managed in accordance with the "IDOT Standard Specifications for Road and Bridge Construction and Supplemental Specifications and Recurring Special Provisions" or the Union Pacific Railroad Hazardous Material Procedures.

Accidental spills of hazardous materials and wastes during construction or operation of the transportation system require special response measures. Occurrences would be handled in accordance with local government response procedures of the City of Wilmington and Wilmington Fire Protection District. Refueling, storage of fuels, or maintenance of construction equipment would not be allowed within 100 feet of wetlands or water bodies to avoid accidental spills impacting these resource. Prior to the start of construction, an Emergency Response Plan would be prepared by UPRR for use during Project construction.

There are no proposed relocations (building demolition) as part of the proposed Project. However, in the event of any future design changes that require demolition, pre-demolition building surveys would be conducted prior to the building demolition to ensure proper abatement (including appropriate regulatory notifications) of ACM and LBP is completed and to help limit the volume of materials that would need to be removed and placed in permitted landfills.

3.5 Cultural Resources

This subsection provides an evaluation of historic, architectural and archaeological resources within the UPRR ROW. Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) (16 U.S.C. 470f) requires federal agencies to consider the impacts of their project undertakings on historic architectural and archeological resources that are either listed on or eligible for inclusion in the National Register of Historic Places (NRHP) (36 CRF 800). Under Section 106, federal agencies are required to provide the public with information about a project and its effect on historic properties and to seek public comment and input, except where confidentiality is considered necessary (as specified in 36 CFR Parts 800.2 and 800.3). The area of potential effect (APE) encompasses the Project study area shown in Exhibit 2-1.

3.5.1 Existing Conditions

HAARGIS was created by the Illinois Historic Preservation Agency (IHPA) in 2002 from the Illinois Historic Structures Survey (1971-1975) and the Illinois Historic Landmarks Survey (Swallow, 1991). Two properties listed on NRHP are in the City of Wilmington, but are not located within the APE. IDOT's cultural resources staff surveyed the APE and found no architectural resources eligible for inclusion in NRHP within the APE.

An archaeological survey was completed by the Illinois State Archaeological Survey (ISAS), and one archaeological site was identified within the APE. It represents a Euro-American habitation (farmstead) dating from the 1870s to the 1920s with limited information potential because of its long history of occupation.

3.5.2 Potential Impacts

With the No-Build Alternative, no historic or archaeological resources would be impacted since no construction work would occur.

In an IDOT letter with SHPO concurrence dated September 24, 2013, IDOT stated that no Historic Properties subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, would be affected by the Build Alternative. Therefore, the Build Alternative would not adversely affect historic properties, including the archaeological site. See Appendix B for the SHPO coordination letter. The National Register-eligibility of the site and any mitigation needed under the terms of the Programmatic Agreement on Compliance with Section 106 of the National Historic Preservation Act for the proposed Chicago to St. Louis HSR Project would be addressed prior to project construction. Data-recovery excavations is the standard mitigation treatment.

3.6 Construction Impacts and Mitigation

The No-Build Alternative would not have construction impacts. Construction of the Build Alternative would involve potential temporary traffic and rail operation, air quality, noise and vibration, water quality, and threatened and endangered species impacts, as well as a risk of inducing invasive species. Customary procedures for minimizing these impacts would be followed.

3.6.1 Traffic and Rail Operation

Motor vehicle traffic would be flagged to stop periodically to allow entry and exit of construction equipment to Build Alternative sites using adjacent or nearby rail/grade crossings. Partial or full closures of track crossings would occur. Such closures would be an inconvenience to motorists. During those times, detours would be marked. To minimize detour lengths and inconvenience, the construction contractor would coordinate the timing of public crossing closures with the City of Wilmington to minimize impacts to traffic flow across the tracks. The local school district would be notified of planned closures so bus route detours can be planned.

All partial or temporary full closures associated with the reconstruction of the North Kankakee Street crossing would be coordinated with the Wilmington Fire Protection District because this crossing is on their primary route to the north side of Wilmington for emergency vehicles.

Construction of the Build Alternative could require periodic reductions in the operation speed of trains passing through construction zones. Also, there could be a need to adjust the schedule of rail operations if activities require temporary shutdown of a track section. Such schedule and/or operations adjustments would be necessary when there is a potential safety risk that could result from the close proximity of moving trains and construction activities. Such delays or disruptions likely would be similar to those that occur with current normal maintenance activities. The construction sequence of building the new track first and then shifting rail traffic to the new traffic while existing track improvements are being made would minimize such impacts.

3.6.2 Air Quality

Construction air quality impacts are temporary in nature and localized to the area of construction. As a rule, short-term construction (shorter than three years) does not warrant a detailed air quality analysis. Possible air quality impacts from construction may be caused by dust from earth-moving activities and by exhaust emissions generated by equipment during construction. State and local regulations regarding dust control and other air quality emission reduction controls would be followed. It is unlikely that the construction of the Build Alternative, which would follow state and local regulations regarding construction activities and equipment, would cause a violation of the applicable standards. UPRR would comply with local regulations to suppress dust emissions as necessary.

GHG emissions also would be generated during the construction phase of the Build Alternative. However, these emissions are likely to be minor given the limited duration of the construction activities, and would be eventually offset by the reduction in GHG emissions by the mode shift from automobiles to passenger rail.

3.6.3 Noise and Vibration

Temporary noise would be caused by construction activities. Construction mitigation measures would be required to minimize these impacts. Construction activities conducted during daytime hours would have a lesser impact than nighttime construction. However, there could be locations in the Project study area where nighttime construction would be unobtrusive, such as commercial areas where the land use is unoccupied during nighttime hours, or industrial areas that are generally not sensitive to noise. Nighttime construction could be necessary to avoid unacceptable disruptions to current rail operations or street traffic during daytime hours. Once details of the construction activities become available, the contractor would communicate with the City of Wilmington regarding minimizing nighttime noise impacts at sensitive receptors.

There are several measures that can be taken to minimize intrusion without placing unreasonable constraints on the construction process or substantially increasing costs. These include noise monitoring to ensure that the contractor takes reasonable steps to minimize impacts when near sensitive areas; and noise testing and inspection of equipment to ensure that all equipment on the site is in good condition and effectively muffled. The 2012 Tier 1 FEIS lists a variety of possible control measures that could be implemented in order to minimize construction noise.

Vibration during construction would be limited to annoyance effects and not to building damage effects. Like noise, vibration impacts could be mitigated by restricting the time permitted for vibration-intensive activities. Pile driving would not occur in association with construction of bridge piers.

3.6.4 Water Quality

To minimize construction impacts on water quality, appropriate BMPs would be utilized prior to, during, and after construction as part of the soil erosion and sediment control

plan for the Build Alternative included in the SWPPP. A NPDES permit for stormwater discharges from construction sites is required and would be obtained for the Build Alternative. Permit requirements would include preparation of a SWPPP. Contractors also would be required to avoid wetlands during the establishment of construction staging areas. An IDNR OWR construction permit would be obtained for work within regulatory floodways and for the crossing of streams that have more than 640 acres of drainage area for urban areas. In-stream work in the Kankakee River and Forked Creek would be performed in accordance with USACE, Chicago District – Regulatory Branch Requirements for In-stream Construction Activities. See Sections 3.2.3.3 for additional detail on the items described in this paragraph.

Although there are no known wells within the proposed Project limits, any undocumented water wells identified during construction within the limits would be properly capped and abandoned. If an associated dwelling would remain after construction is completed, the water well would be replaced or other suitable alternative would be provided. The replacement water well, if necessary, would be constructed such that susceptibility to surficial contamination is minimized, for example, by constructing the well in a deeper aquifer.

Debris and spoil would be removed according to state and local regulations.

3.6.5 Threatened and Endangered Species

The Build Alternative May Affect, Not Likely to Adversely Affect the sheepnose mussel and northern long-eared bat, federally listed species. To minimize direct impacts to the protected sheepnose mussel, all living sheepnose mussel specimens found during a pre-construction mussel survey would be removed from the impact area of the Build Alternative prior to the start of construction. To avoid direct impacts to the northern long-eared bat, tree removal activities required for the Build Alternative could occur between October 15 and March 31. According to the USFWS, there is a maternity colony 1.5 miles from the Project study area. Additional surveys to determine if bats are present would occur if tree removal is required outside of this time frame.

In addition, there could be impacts to state listed mussels (purple wartyback and black sandshell) and fish (river redhorse, pallid shiner, and western sand darter). To minimize direct impacts to listed mussels, all living specimens would be removed prior to construction. Fish are generally mobile and would abandon feeding or resting areas when anthropomorphic changes occur such as placement of bridge piers. To minimize impacts to the fish, in-stream work during the spawning period would be avoided. See Sections 3.2.4.3 for additional detail on the items described in this section.

3.6.6 Invasive Species

The requirements of Executive Order 13112 to combat the introduction and spread of invasive plant species during construction of the Build Alternative would be met. For example, measures to minimize the spread of invasive species during construction could include the rapid seeding and revegetation of bare soil with native/non-invasive species, cleaning of construction equipment prior to entering areas near sensitive habitats, and

active management of invasive plants that become established during construction. These methods would be implemented, where practical, in compliance with IDOT special provisions for controlling invasive species.

3.7 Secondary and Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations for the NEPA define secondary or indirect impacts as those:

> "…effects which are caused by the proposed action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."(Source: Code of Federal Regulations, Title 40, Section 1508.8(b)) These actions are often referred to as "but for" actions.

Cumulative Impacts are those impacts:

> "…on the environment which results from the incremental consequences of the action when added to other past, present, and reasonable foreseeable future actions"

The intent of the cumulative-effects analysis is to determine the magnitude and significance of cumulative effects, both beneficial and adverse, and to determine the contribution of the proposed action to those aggregate effects.

The consideration of cumulative effects consists of an assessment of the total effect on a resource, ecosystem, or community from past, present and future actions that have altered the quantity, quality or context of those resources within a broad geographic scope.

3.7.1 Secondary Impacts

For the No-Build Alternative, there would be no secondary impacts since no action would take place.

The 2012 Tier 1 EIS for the Chicago to St. Louis HSR Program concluded that the program would result in negligible secondary impacts for two main reasons.

1. The HSR 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.

2. It is anticipated that the increased ridership would have a minimal effect on inducing development around the existing train stations, which are already in developed/urbanized areas.

The Build Alternative would include:

- No changes in grade crossing numbers or locations. Thus, the Build Alternative would not cause changes in travel patterns that could alter the convenience of access to land and potentially alter development patterns or induce new development.

- No new stations to attract development that would serve passenger rail customers. One of the long-term goals in the Wilmington 2008 Comprehensive Plan is a passenger rail stop in Wilmington. However, IDOT has no plans for a passenger rail stop either as a part of the proposed Project or any other project associated with the Chicago to St. Louis HSR Program.

- No change in rail sidings that serve local business areas. The one existing siding would be retained and no new industrial sidings would be built as a part of the Build Alternative. The Build Alternative, would neither encourage nor discourage changes in industrial development in the Project study area.

Therefore, the Build Alternative would not induce changes in development patterns or new development that would result in secondary impacts to community, cultural, and natural resources.

3.7.2 Cumulative Impacts

The Build Alternative in combination with the projects assessed in the 2011 EA/FONSI for track improvements from Joliet to Dwight, the 2014 CE for the High-Speed Rail Corridor - Joliet to Dwight Track Improvement Project, and the project defined in the 2012 Tier 1 FEIS/ROD from Chicago to St. Louis would offer the cumulative benefits described in the Statement of Purpose and Need for this proposed Project. The combined projects would contribute to improving modal balance in the corridor and for passenger rail would reduce travel times, improve service reliability, increase frequency of trips, and increase track capacity.

This cumulative impact assessment addresses the impacts of the Build Alternative in combination with other past, present, or reasonably foreseeable future actions, including other rail projects in the Project study area, and evaluates the significance of the aggregate effects.

This assessment does not address the cumulative impacts of past, present, or reasonably foreseeable future actions to environmental resource types unaffected by the Build Alternative. Environmental resources considered in the cumulative impact assessment are:

- Air quality
- Noise and vibration
- Aesthetic environment and scenic resources
- Vegetation and habitat
- Wetlands
- Water quality
- Threatened and endangered species
- Special lands

Environmental resources not considered in the cumulative impact assessment and the reasons why are:

- Energy: In the long term, post-construction operational energy requirements for the Build Alternative and the HSR Program as a whole should offset construction and maintenance energy requirements and result in a net savings in energy use.

- Floodplains and Regulatory Floodways: No permanent impact would occur with the Build Alternative. With bridge replacements across the Kankakee River and Forked Creek, an increase in the flood height of more than 0.10 feet and an increase in flood limits are unlikely in either floodplain.

- Agriculture: No Prime or Important Farmland or actively farmed land would be impacted.

- Section 4(f) Resources: The Build Alternative would have no impact on Section 4(f) resources

- Transportation: Rail service and transportation safety are improved with the Build Alternative. No permanent changes to roadway access from existing grade crossings or rail siding access are expected.

- Community and Land Use: The Build Alternative would involve the acquisition of approximately 4.08 acres of additional railroad ROW and 1.82 acres of temporary easements, and would not result in a notable change to the surrounding community and existing land use. There would be no relocations, permanent impacts to community services, or community cohesion. The Build Alternative is consistent with the City of Wilmington's land use planning goals except for not including a passenger rail stop.

- Employment and Economics: No business uses would be displaced. Construction of the Build Alternative would provide construction-related jobs.

- Environmental Justice and Title VI: There are no concentrations of minority or low-income households in the Project study area.

- Barriers and Accessibility: With the Build Alternative provisions for pedestrians at railroad crossings, where proposed, would meet ADA requirements.

- Public Health and Safety: The Build Alternative would include safety improvements along the rail line at grade crossings.

- Hazardous Materials and Waste: If REC's are affected, contaminated materials would be properly handled and disposed.

3.7.2.1 *Impact Causing Activities*

Past, present, and reasonably foreseeable future impact causing activities considered are:

- Past

  - Urban and Agricultural Development. According to the 2008 City of Wilmington Comprehensive Plan, land use in the City is predominately agricultural and rural residential surrounding the Project study area with some commercial and civic uses near the City center. There are some industrial property and open spaces to the north of the City. Because the core of Wilmington is well established, land uses in the Project study area have been constant in recent times with little change.

  - UPRR. The UPRR extends through the City of Wilmington and crosses the Kankakee River just north of the downtown area with associated freight and passenger service. The nearest Amtrak stations are in Joliet and Dwight. The Burlington Northern & Santa Fe (BNSF) line is near the northwest boundary of Wilmington area. It is a freight line that serves the intermodal facility in the Village of Elwood and the newly constructed intermodal center in Joliet.

- Present

  - Joliet to Dwight Track Improvements (2011). The April 2011 EA/FONSI for the UPRR Track Improvement Project from Joliet to Dwight, IL included upgrades to existing track from Joliet to Dwight; new second mainline track from Joliet to Elwood; track improvements at the existing siding in Braidwood, Illinois; and numerous at-grade crossings improvements. The only component in the Project study area for the proposed Kankakee River Bridge and Trackwork Improvement Project was an upgrade to the existing track.

  - Joliet to Dwight Track Improvements (2014). The November 2014 CE for the High-Speed Rail Corridor - Joliet to Dwight Track Improvement Project included several of the 2011 EA project components that have advanced in design since 2011; new setout tracks at Plaines Industrial Lead; and additional improvements planned between Joliet and Braidwood, including the Braidwood to Mazonia double track and Dwight, Illinois siding. The 2014 CE also included several bridge structure modifications not fully developed in the 2011 EA project scope. Four quadrant gates are planned at 32 at-grade crossings and improvements at 49 culverts. The double track components of the proposed Project are a Tier 2 project for the Chicago to St. Louis HSR Program. None of the improvements addressed in the CE are within the Project study area for the Kankakee River Bridge and Trackwork Improvement Project.

  - The Kankakee River Bridge and Track Improvements Project. This proposed Project (and its Build Alternative) is assessed in this EA and includes the replacement of the existing Kankakee River Bridge with double tracks, bridge modifications to Water Street Bridge, Forked Creek Bridge, new access roads along the east side of the existing UPRR tracks, and at-grade crossing and culvert improvements. The Build Alternative also includes an increase in passenger train numbers from the No-Build Alternative (existing conditions), 9 daytime

trains to 16 daytime trains, and from 1 nighttime train to 2 nighttime trains. This is a Tier 2 project for the Chicago to St. Louis HSR Program.

- Future

  - Elwood to Braidwood Track Improvements Project. The proposed Project includes construction of a second main line track adjacent to existing UPRR alignment (MP 45.00 to 51.88 and 53.19 to MP 55.00), as well as access roads, grade crossings, culverts, fencing, and associated signal work. This is a Tier 2 project for the Chicago to St. Louis HSR Program. None of the improvements proposed are within the Project study area for the Kankakee River Bridge and Trackwork Improvement Project.

  - Freight train growth from five daily trains to 11.

  - Multiple major or complex at-grade crossing improvements along the UPRR that could involve the realignment of crossing approach roads.

  - Illiana Corridor Project, a new 50-mile highway facility that will connect I-55 near Wilmington, Illinois, with I-65 near Lowell, Indiana, is planned to pass north of the Kankakee River Bridge and Track Improvements Project study area. Illiana also includes a crossing of the Kankakee River approximately 4,000 feet north of the new Kankakee River railroad bridge that is a part of the Build Alternative. The Illiana project's preferred alternative includes an interchange serving IL-53 approximately 9,000 feet north and east of the Kankakee River Bridge and Track Improvements Project study area. It is east of IL 53. Access to Wilmington from the interchange would be via East Kankakee River Drive. Development is expected to be induced in the Wilmington area in association with the interchange. Construction of parts of the Illiana project could occur at the same time as the Build Alternative, but neither a precise start date or construction plan for the Illiana project is known at this time.

  - The City of Wilmington is in the planning phase for three park and recreational space projects, including enhancements to North and South Island Parks and the development of two new parks, Bobcat and Celotex southwest and northwest of the Kankakee River, respectively. None of these planned improvements are with the Project study area for the Kankakee River Bridge and Trackwork Improvement Project, although all are on the Kankakee River and the UPRR Kankakee River Bridge could be viewed by improvements in North Island Park.

3.7.2.2 *Potential Cumulative Impacts*

The following sections consider the potential for cumulative impacts associated with the environmental resources for which the Build Alternative would cause impacts. For each environmental issue, the area or areas of potential cumulative impact, the potential cumulative impact, and opportunities for mitigating the impact are addressed.

Air Quality

The air quality impact assessment in Section 3.1.1 addressed the potential for both regional and local air quality impacts for the Build Alternative. Both analyses considered not only passenger train growth and changes in speed associated with the Build Alternative, but forecast freight train growth. The regional analysis considered freight and passenger growth and changes in speed for the part of the Chicago to St. Louis HSR Program within the Chicago-Gary-Lake County, IL-IN non-attainment area, including the Build Alternative. Except for the Illiana project, none of the other reasonably foreseeable future actions listed above could potentially have a notable effect on air emissions in the Chicago-Gary-Lake County, IL-IN non-attainment area or in the area along the UPRR tracks where changes in train operations could affect local air quality. Therefore, this cumulative impact assessment focuses on changes in rail operation emissions in association with motor vehicle emissions of the Illiana project.

The regional air quality analysis in Section 3.1.1.3 found that the Build Alternative in combination with other HSR Program improvements in the non-attainment area would increase diesel locomotive emissions of NOx, VOC and $PM_{2.5}$. However, these increases would be small, lower than the General Conformity *De Minimis* thresholds and, therefore, insignificant. The December 2014 Tier 2 FEIS for the Illiana project included the Chicago to St. Louis HSR Program in its cumulative impact assessment as a reasonably foreseeable future action. The cumulative impacts assessment in that document concluded for air quality that "the proposed project [Illiana], when added to other past, present, and reasonably foreseeable actions in the area is not expected to cause or contribute to any violations of the NAAQS. This analysis demonstrates that the proposed project [Illiana], in combination with all reasonably foreseeable transportation projects and all other point, mobile and area-wide sources, will not result in an exceedance of the NAAQS established by the Clean Air Act." Therefore, there would be no cumulative air quality impact with the Kankakee River Bridge and Track Improvement Project's Build Alternative in combination with other past, present, and reasonably foreseeable future actions.

The local rail locomotive emissions for the Build Alternative in combination with reasonably foreseeable freight train growth would not be significant. Generation of significant amounts of MSAT emissions would not occur. Regional MSAT would be reduced as a result of the USEPA regulations for engines and fuels over the next several decades. GHG emissions would not increase substantially. The Illiana project is not within the Kankakee River Bridge and Track Improvements Project study area. Illiana project traffic therefore would not contribute to local emissions associated with the Build Alternative. Therefore, there would be no cumulative impact to local air quality.

Noise and Vibration

Other planned rail projects would not add additional trains or train speeds to those proposed with the Kankakee River Bridge and Track Improvement Project's Build Alternative that could increase noise or vibration levels at homes impacted by higher noise and vibration levels with the Build Alternative. The increase in freight trains that

would occur with or without the Build Alternative was considered in the direct noise impact assessment.

The cumulative impact assessment contained in the December 2014 Tier 2 FEIS for the Illiana project noted that the HSR Program would add to noise levels in the area also affected by the Illiana project. That FEIS noted that while the incremental effect of the Illiana project on noise levels in its study area would be small, those increases would contribute in a small way to the continued cumulative increase in noise levels that is expected from ongoing development and urbanization. None of the noise sensitive receptors affected by the Build Alternative also would be affected directly by Illiana project traffic noise. Induced industrial development on the east side of the UPRR associated with the Illiana project's planned IL 53 interchange could contribute to residential noise levels at homes affected by Build Alternative noise west of the UPRR between East Kankakee River Drive and Stewart Street. The indirect (secondary) impact assessment in the December 2014 Tier 2 FEIS for the Illiana project says regarding development impacts in Wilmington: "The City of Wilmington indicated during an interview in May 2013 that it expects and supports major new development opportunities associated with the proposed Illiana interchange at or near IL-53…. The major reasons the City supports the Illiana Corridor project are the removal of large truck traffic from City streets and the potential for future economic and residential development due to improved access." The potential cumulative noise impact could be mitigated by the City of Wilmington establishing a railroad quiet zone and noise control requirements that might be associated with their approval of the site plans of any development induced by the Illiana project.

Vibration impacts were not assessed in the Illiana project's FEIS; therefore it is concluded that motor vehicles operating on the Illiana project will not generate vibration affecting adjoining land uses. None of the other reasonably foreseeable future actions, listed above could potentially generate noise and vibration that could affect the sensitive receptors affected by the Build Alternative.

Aesthetic Environment and Scenic Resources

The direct visual impact assessment in Section 3.1.6.2 found that visual impacts for the Build Alternative would be minor/ negligible for most of the proposed Project. A visual impact would occur for the residential development from East Kankakee River Drive to Stewart Street where vegetation removal would open up views from homes of the UPRR tracks, trains, and industrial development on the east side of the tracks. Views of backyards would be opened up for Amtrak users. The industrial development is within a larger area of land zoned industrial (see Exhibit 3-8). Additional industrial development could be built there in the future but no current plans exist. However, development induced in association with the planned Illiana project's IL 53 interchange could be added to views from homes in the undeveloped part of the area zoned industrial east of the UPRR. This potential impact could be mitigated in the context of the City of Wilmington's approval of the site plans for any development induced by the Illiana project.

Vegetation and Habitat

Most of the Project study area consists of urban land uses, and contains limited areas of wildlife habitat that have not been extensively disturbed. The primary upland cover types providing habitat for wildlife are near the Kankakee River and Forked Creek stream corridors. The Kankakee River Bridge and Track Improvement Project's Build Alternative would not result in habitat fragmentation or create additional forest edges since it would follow an existing rail line. The Illiana project is a new corridor and additional development that could be induced by the Illiana project would fragment habitat and create new forest edges; however, the rail projects would not contribute to this impact.

The Illiana project and additional development that could be induced by that project also would further reduce the number and size of remaining open space and available habitat. Except for forested lands along creeks and rivers, much of the undeveloped land in the Wilmington area is used for agricultural fields. In time, as animals move away from newly developed areas to undeveloped areas, urban tolerant species could create additional competition for less tolerant species residing in protected areas or for other urban tolerant species inhabiting scattered, remnant open space. Because they would be along an existing rail line, the rail projects would not make a notable contribution to this type of impact.

The forested areas adjacent to Forked Creek and the Kankakee River extend into the Illiana project area. The Illiana project will directly impact approximately 8.9 acres of forested areas greater than 20 acres in the Wilmington area, all west of the Kankakee River Bridge and Track Improvements Project study area. The Kankakee River Bridge and Track Improvements Project's Build Alternative would affect no forested areas greater than 20 acres and would not contribute to a cumulative impact of this resource.

Bridge piers in the Kankakee River with Build Alternative combined with the Illiana project would result in a combined loss of mussel habitat. The combined permanent impact would be approximately 0.21 acre. Because of the small number of mussels found during the mussel surveys and the minimal area of habitat required for the piers, the cumulative effect is expected to be negligible compared to the remaining habitat in the area.

Wetlands

The Kankakee River Bridge and Track Improvements Project's Build Alternative would result in 0.41 acre of permanent impact to wetlands. Neither the other railroad projects north and south of the Project study area nor the Illiana project would affect the same wetlands as the Build Alternative. The Joliet to Dwight Track Improvements Project would permanently impact 4.7 acres of wetland. The Illiana project would impact 31 acres of wetland in the Illinois portion of the project and the Elwood to Braidwood Track Improvements Project is expected to impact wetlands at an order of magnitude between 0.25 and 4.7 acres. This combined level of impact would be negligible when compared to the overall acres of wetlands in the Kankakee River basin. Current estimates for

wetlands in the Kankakee River basin are 17,000 to 27,000 wetlands covering approximately 100 to 200 square miles or five percent of the total basin area.

Wetland conversion for development and farming activities has reduced the historic wetland acreage in Will County. The net reduction in wetland acreage, however, has slowed because of the protection granted wetlands under Section 404 of the CWA. Under the protection granted to wetlands, mitigation guidelines require that wetland losses greater than 0.10 acre be replaced at a ratio of 1.5 to 1 or greater (depending on the type and quality of wetland affected). For Illinois state funded or state pass-through projects, the IWPA requires the mitigation of all wetland impacts, regardless of their jurisdictional status. A Will County ordinance protects non-jurisdictional wetlands that could be affected by private development, including development that could be induced by the Illiana project. The developer would mitigate private development wetland impacts.

The requirement that wetlands be mitigated at higher ratios than what is impacted is reducing the overall loss of wetland resources and is slightly increasing wetland resources over time. In addition, higher mitigation ratios also attempt to address indirect effects to wetlands remaining after a project is implemented. For that reason, mitigation ratios are typically higher for more sensitive or higher quality wetlands (High Quality Aquatic Resources –HQAR's). Wetlands known to harbor threatened or endangered species in Illinois require a mitigation ratio of 5.5:1 under IWPA. Mitigation ratios also are established based on the time necessary to replace the natural functions of the wetland impacted. Thus, in many cases more wetlands are being created than destroyed by individual projects. In-kind replacement has been elevated by the U.S. Corps of Engineers as an objective, lessening the potential for changing wetland composition. These mitigation requirements are applicable to both private and public projects, including the proposed Project and all other reasonably foreseeable future actions.

Water Quality

Cumulative impacts to water quality could include potential degradation because of point source and nonpoint source pollution primarily from stormwater runoff during construction of the Kankakee River Bridge and Track Improvements Project's Build Alternative, construction and operation of the Illiana project, and development that could be induced by the Illiana project. The use of BMPs during construction of both bridges over the Kankakee River (Build Alternative and the Illiana project) would minimize runoff into the Kankakee River and Forked Creek. (See the additional discussion related to water quality impacts to the Kankakee River under "Special Lands" below.)

The Kankakee River Bridge and Track Improvements Project's Build Alternative would not add additional impervious surface to the Project study area and thus would not contribute to the water quality impact of additional impervious surface that will be associated with the Illiana project and development it could induce in the Wilmington area.

Threatened and Endangered Species

The Build Alternative would affect two federally listed species in Will County. For two federally-listed species, sheepnose mussel and northern long-eared bat, the Build Alternative may affect, but is not likely to adversely affect these species. Mitigation actions are planned to minimize the potential for any affect. Therefore, the Build Alternative would not contribute to a cumulative impact to these species that could be associated with other reasonably foreseeable future actions.

As noted above, bridge piers in the Kankakee River with Build Alternative combined with the Illiana project would result in a combined loss of mussel habitat. This would include state and federally threatened and endangered mussel habitat. The combined permanent impact would be approximately 0.21 acre. Because of the minimal area of habitat required for the piers, the cumulative effect is expected to be negligible compared to the remaining habitat in the area. Both projects also would affect state listed mussel species. For both projects, affected state-listed mussels would be relocated prior to construction. Both projects would avoid in-stream work during the fish spawning period; therefore, the cumulative effect on state-listed fish would be negligible.

Special Lands

With the Build Alternative, the placement of bridge piers within the Kankakee River and temporary construction activities associated with bridge construction and removal of existing piers would impact the Kankakee River INAI site.

The Illiana project also would involve construction of a bridge across the Kankakee River with associated impacts to the river bottom. The Illiana project's bridge will cross the Kankakee River approximately 4,000 feet from the new Kankakee River railroad bridge for the Build Alternative. With the Illiana project, 12 piers will be constructed in the Kankakee River that will total 0.11 acre in impact. An additional 0.17 acre of temporary impacts will occur from installation of temporary cofferdams used in the pier construction. Temporary causeways also will be used to construct the Illiana project bridge. The total area of temporary impact related to the causeway will be approximately 2 acres of river bottom. No more than one-half of the river would be closed at any one time. Once construction is completed, the causeways would be removed. The combined impact total of the two bridges to the river bottom would be 3.1 acres (0.82 acre with the railroad bridge—0.10 permanent and 0.72 temporary and 2.28 acres with the Illiana project), with a combined permanent impact of less than 0.21 acre.

The removal of vegetative cover and soil disturbance during construction of the Build Alternative and the Illiana project also would increase the potential for erosion and could result in increased sedimentation in nearby streams. Any temporary structures placed in streams could increase turbidity (suspended solids) and temporarily alter downstream hydraulics and substrate conditions. The area for potential siltation impacts will be about 7.0 acres for the Illiana project (extending up to 500 feet downstream) and would be 3.6 acres for the Build Alternative (300 feet downstream) for

a total of approximately 10.6 acres. Because of the distance between the two bridges, the two areas affected by siltation would not overlap, thus, creating a combined impact. Construction of parts of the Illiana project could occur at the same time as the Build Alternative, but neither a precise start date or construction plan for the Illiana project is known at this time. The in-stream construction techniques, erosion control BMPs, and plans to relocate potentially affected mussels with both projects would minimize potential impacts.

As described in Section 3.7.2.1, the City of Wilmington plans to develop two new parks and improve North and South Island Parks on the Kankakee River. To the extent that erosion control measures associated with these projects are not wholly effective, sediment could enter the Kankakee River during park construction. However, these other projects remain in the planning stage and it is unlikely they would be built at the same time as the two Kankakee River bridges and thus adding to potential Build Alternative construction period sedimentation impacts.

Several other INAI and important natural resource sites are along the UPRR between from Joliet to Dwight and could be impacted by other railroad improvement projects. The existing UPRR ROW travels through Midewin National Tallgrass Prairie and the Mazonia-Braidwood State Fish and Wildlife Area. The INAI sites along the rail line, in addition to the Kankakee River INAI site, are the Hitts Siding Prairie Nature Preserve and INAI site, the Mazonia Railroad Prairie INAI site, the Braceville Railroad Prairie INAI site, Godley Railroad Prairie INAI site, the Joliet Army Ammunition Plant INAI site, and the Mazon River Gardner Reach INAI site. The Joliet to Dwight Track Improvements CE (2014) identified impacts to the Godley, Braceville, and Mazonia prairies/INAI sites and the Mazon River Bed INAI site. The Elwood to Braidwood Track Improvements Project could affect the Midewin National Tallgrass Prairie and the Hitts Siding Prairie Nature Preserve. Complex crossing improvements between Dwight and Joliet could impact Midewin National Tallgrass Prairie and the Hitts Siding Prairie Nature Preserve and INAI site. All these impacts would be minor, generally involving narrow strips of additional railroad adjacent to existing ROW or minor adjustments to road ROW. However, the various INAIs have independent habitat functions, such that the minor rail project impacts on one site would not contribute to a cumulative notable impact to the function and value of multiple sites. Impacts would be mitigated in association with each rail project. INAI impacts by other rail projects in combination with INAI impacts of other past, present, and reasonably foreseeable future actions within the Project study areas of those other rail projects has been or will be considered in environmental documentation for the other rail projects.

3.8 Permits

3.8.1 Air Quality

To control local air pollution impacts during Build Alternative construction, coverage under the Illinois General Permit could be required for any portable bituminous and concrete plants that would be used in construction. However, these materials would

likely originate from existing permitted plants and would be delivered to the construction site.

3.8.2 Floodways

The IDNR OWR issues floodway construction permits for work within regulatory floodways and for the crossing of streams which have more than 640 acres of drainage area for urban areas. This permit would be obtained prior to construction of the Build Alternative.

3.8.3 Wetlands and Waters of the U.S.

Section 10 of the Rivers and Harbors Act of 1899 (Title 33 U.S.C. Section 403) and Section 404 of the CWA (Title 33 U.S.C. Section 1251) require permits for placement of structures, dredged, or fill material into waters of the US. All public and private projects must obtain permits. These permits are issued by the USACE.

Illinois requires applicants for Section 404 USACE permits to first obtain Water Quality Certifications from the state, as required by Section 401 of CWA. Regional Permit 3, Transportation, in the Chicago District has automatic Water Quality Certification. These permits and certification would be obtained prior to construction of the Build Alternative.

3.8.4 Water Quality

The NPDES Program established under Section 318, 402, and 405(a) of the CWA requires permits for the discharge of pollutants from any point source into waters of the US. Illinois state environmental agencies are responsible for administering the associated storm water control program. Storm water from projects must be treated to the maximum extent practicable. Also, developers of construction sites disturbing more than one acre must obtain a permit and have a SWPPP in place. This permit with the associated SWPPP would be obtained prior to construction of the Build Alternative.

3.9 Environmental Commitments

The following environmental commitments would be fulfilled in association with the design, construction, and/or operation of the Build Alternative:

- Air Quality

    1. Special provisions related to minimizing construction vehicle emissions would be included in the Build Alternative's construction contracts.

    2. State and local regulations regarding dust control and other air quality emission reduction controls also would be followed during construction. In addition, BMPs would be used prior to, during, and after construction for dust suppression.

- Noise and Vibration

    3. If the City of Wilmington wishes to designate a quiet zone after completion of the Build Alternative's grade crossing improvements, FRA would work with the City of Wilmington, while also coordinating with the UPRR and Amtrak, so that the Project study area becomes a quiet zone.

    4. To minimize vibration impacts in the Build Alternative, UPRR and Amtrak would use maintenance procedures such as regularly scheduled rail grinding, wheel truing programs, vehicle reconditioning programs, and use of wheel flat detectors.

- Aesthetic Environment and Scenic Resources

    5. The UPRR ROW would be re-vegetated with a ground cover at the end of construction, including the east and west sides of the UPRR ROW from East Kankakee River Drive to Stewart Street.

- Vegetation and Habitat

    6. Temporary impacts would be mitigated by restoring the ground surface to the pre-construction contour and planting exposed areas of soils with a cover crop.

    7. To satisfy the requirements of Executive Order 13112, measures to minimize the spread of invasive species would be implemented during construction.

- Wetlands and Waters of the U.S.

    8. IDOT and UPRR would work to first avoid and minimize impacts to wetlands locations during final design development to the extent practicable. Unavoidable adverse wetland impacts would be subject to the applicable replacement ratios specified in 17 IAC Part 1090.50 (c)(8). The replacement ratio for unavoidable adverse impacts to wetlands with a Mean C value of four or above would be 5.5:1.0. Impacts to wetlands with a mean C less than 4 would be determined based upon the location of the wetland compensation site. A bank site to be determined is proposed as the compensation site.

- Water Quality and Water Resources

    9. Appropriate BMPs would be utilized prior to, during, and after construction as part of the soil erosion and sediment control plan for the Build Alternative included in the SWPPP.

    10. In the event that an unknown or undocumented well is encountered during construction, the water well(s) identified would be properly capped and abandoned. If the associated dwelling would remain after construction is completed, the water well would be replaced or other suitable alternative would be provided. The replacement water well, if necessary, would be constructed

such that susceptibility to surficial contamination is minimized, for example, by constructing the well in a deeper aquifer.

- Threatened and Endangered Species

11. To minimize direct effects to the protected sheepnose mussel, all living sheepnose mussel specimens found during a pre-construction mussel survey would be removed from the impacted area and relocated. Live individuals would be relocated into suitable habitat, preferably upstream of the construction area. Prior to the relocation efforts, malacologists would work with IDNR and USFWS to develop protocols in the handling, transport, and relocation of any living sheepnose mussels, if found.

12. BMPs also would be implemented by UPRR contractors in proximity to the bridge over the Kankakee River, as well as in proximity to tributaries of the Kankakee River, to minimize impacts to water quality. In-stream work in the Kankakee River would be performed in accordance with USACE, Chicago District – Regulatory Branch Requirements for In-stream Construction Activities. This includes the use of non-erodible cofferdams, filtering of dewatering operations, timber/work mats and the use of low ground-pressure equipment for work in wetlands as much as practical.

13. To minimize impacts to the northern long-eared bat habitat, the number of roost trees removed for the Build Alternative would occur between October 15 and March 31 from areas of potential habitat. Additional surveys to determine if bats are present would occur if tree removal is required outside of this time frame. Temporary and permanent impacts to trees would be quantified, mitigated and this information coordinated with IDOT BDE, USFWS, and IDNR prior to construction.

14. Final mitigation related to the sheepnose mussel and northern long-eared bat habitat is subject to the completion of on-going Section 7 consultation with USFWS.

15. Final mitigation related to the purple wartyback, black sandshell, pallid shiner, western sand darter, and river redhorse is subject to the completion of on-going Incidental Take Authorization. To minimize direct impacts to listed mussels, all living specimens would be removed prior to construction. Appropriate BMPs, including cofferdams and silt curtains, would minimize impacts to these species.

- Community and Land Use / Public Health and Safety

16. During the construction period, coordination would occur between the contractor and the railroads, wayside industries, the City of Wilmington, the Wilmington Fire Protection District, and school officials, to minimize construction period transportation impacts, such as access restrictions or detours during improvement of at-grade crossings and modifications to the industrial

spur line. Project website would be used to announce to the public at-grade railroad crossing closures during the construction period.

- Hazardous Materials and Waste

17. Special waste issues that may arise in the construction phase would be managed in accordance with the "IDOT Standard Specifications for Road and Bridge Construction and Supplemental Specifications and Recurring Special Provisions" or the Union Pacific Railroad Hazardous Material Procedures.

18. Accidental spills of hazardous materials and wastes during construction or operation of the transportation system require special response measures. Occurrences would be handled in accordance with local government response procedures. Refueling, storage of fuels, or maintenance of construction equipment would not be allowed within 100 feet of wetlands or water bodies to avoid accidental spills impacting these resource. Prior to the start of construction, an emergency response plan would be prepared by UPRR or its contractor for use during Build Alternative construction.

4.0 Coordination and Consultation

This section summarizes the coordination efforts that have occurred throughout the development of the various rail projects for this proposed Project's study area. Coordination has been on-going with environmental resource and regulatory agencies, local government, and the public through a series of meetings and written correspondence.

Coordination efforts between IDOT, FRA, and the environmental resource and regulatory agencies have addressed the range of environmental resource issues associated with this proposed Project. Agency and local government coordination efforts were conducted with:

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Illinois Department of Natural Resources
- Illinois Department of Agriculture
- Illinois Environmental Protection Agency
- Illinois Historic Preservation Agency
- Illinois Natural History Survey
- Illinois State Geologic Survey
- Will County
- City of Wilmington

4.1 Agency Coordination

Quarterly meetings have been held with environmental resource and regulatory agencies that have discussed this proposed Project and others in association with preparation of the 2011 EA/FONSI, 2012 Tier 1 FEIS, 2014 Joliet to Dwight CE, and this document. Starting in April 2014, this proposed Project has been discussed at these meetings. Invitees included:

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Illinois Department of Natural Resources
- Illinois Department of Agriculture
- Illinois Environmental Protection Agency
- Illinois Historic Preservation Agency

Meetings held with environmental resource and regulatory agencies in addition to the quarterly meetings include:

- Conference calls with the USACE that occurred on July 16, 2014 and August, 20, 2014 regarding permits for the proposed Project.

- Conference call with USFWS on October 24, 2014 to discuss potential threatened and endangered species impacts with the proposed Project and the need for formal consultation or conferencing. It was agreed that FRA would submit at Biological Assessment (BA) to USFWS with FRA's findings on potential effects. The BA was submitted in January 2015. USFWS provided comments on the BA in a letter dated February 2013. The letter indicated agreement on determinations of No Effect included in the BA for most species. The letter asked for more information related to impacts to the sheepnose mussel and northern long-eared bat. A meeting was held with USFWS on March 9, 2015 to discuss USFWS comments. Agreement was reached on revisions to be made prior to re-submission of the BA to USFWS. Subject to USFWS's review of the final BA, a biological conclusion of May Affect, Not Likely to Adversely Affect was tentatively agreed to for the sheepnose mussel and northern long-eared bat.

- Various coordination meetings and conference calls with USACE, USEPA, IDNR, Illinois Natural History Survey, and Illinois State Geologic Survey representatives regarding natural and cultural resource surveys.

- Joint mussel surveys at the Kankakee River Bridge with study team staff and Illinois Natural History Survey staff in July 2014.

- Development of Programmatic Agreement with the Illinois Historic Preservation Agency (State Historic Preservation Officer) from March 2012 through January 2014 when the PA was ratified, as well as discussions of historic and cultural resource survey findings and determinations of No Effects and Adverse Effects on these resources.

The City of Wilmington was contacted during data gathering for this proposed Project related to current land use, zoning, and comprehensive land use plans. As part of rail improvement project planning and impact assessment, IDOT has held meetings with local officials to which officials with the City of Wilmington were invited to participate.

- 2011 EA: Local officials meeting on March 23, 2011.

- 2012 Tier 1 Draft Environmental Impact Statement (DEIS)/FEIS: Public hearing and local officials meeting on August 8, 2012.

Copies of the 2011 EA and 2012 Tier 1 DEIS were sent to City of Wilmington officials for comment.

Agencies and local governments listed in Chapter 5.0 will be provided a copy of this EA with a request that comments be received within 30 days. Comments received and responses will be incorporated in a Finding of No Significant Impact. If the outcome of considering agency and public is that the Build Alternative would cause significant environmental impacts, responses to EA comments would be included in a Draft Environmental Impact Statement.

4.2 Public Meetings

As part of rail improvement project planning and impact assessment, IDOT has held the following public meetings to which citizens of the City of Wilmington could attend:

- 2011 EA: Public outreach meetings for the Joliet to Dwight project, which included improvements in the Wilmington area, were held on May 12, 2010 and March 24, 2011 in Joliet. Additionally, a Public Open House for the project was held on August 4, 2011 in Joliet. In addition to email invitations, an advertisement for the Public Open House was included in the News section of the Herald News, which covers Will County, on August 2, 2011. Information regarding the meeting was also published on the HSR Program website and on social media (Facebook).

- 2012 Tier 1 DEIS/FEIS: Five public open houses to discuss the Chicago to St. Louis HSR Program were held in March 2011, including one in Joliet, Illinois north of the Project study area. This open house was directed to interested parties from between Chicago and Dwight, including Wilmington. In October/November, five public meetings were held to discuss alternatives screening criteria for the Chicago to St. Louis HSR Program. Again, one was held in Joliet directed to interested parties from between Chicago and Dwight, including Wilmington. The public meetings were advertised through email invitations, newsletters, news release, and public notice advertisement.

- Public hearings were held on the Tier 1 DEIS for the HSR Program in August 2012, including one in Joliet. A public review copy of the DEIS was placed in the Wilmington Public Library.

Study team representatives, including UPRR, Illinois Commerce Commission, and the HSR Program's outreach coordinators participated in a safety presentation at Gardner-South Wilmington High School on December 2, 2014.

Specific to this proposed Project and this EA, the opportunity to request a public meeting will be announced via a published Public Meeting Offer in local publications that serve the City of Wilmington and surrounding area. The availability of the EA for public review at the City of Wilmington library will coincide with the Public Meeting Offer. The Public Meeting Offer also will include a request for written comments on the EA. The Public Meeting Offer will be printed a minimum of two times. Requests for a public meeting will be accepted for 21 days from the date of the first publication. A public meeting would be held if requested. If a Public Meeting is requested an announcement of the meeting purpose, format and date and time would be made to the public. Comments generated from this meeting and written comments submitted would be incorporated in a Finding of No Significant Impact, including responses to comments made. It the outcome of considering agency and public is that this proposed Project would cause significant environmental impacts, responses to EA comments would be included in a Draft Environmental Impact Statement, which would be made available for public comment and a public hearing held.

5.0 Distribution List

The Kankakee River Bridge and Track Improvements EA is being distributed to the following federal, regional, state, and local agencies and other interested parties for their review and comments.

5.1 Federal

- Advisory Council on Historic Preservation
- Department of the Army, Chicago District, Corps of Engineers
- Federal Emergency Management Agency
- Federal Highway Administration
- U.S. Department of Agriculture Natural Resource Conservation Service – Will-South Cook County
- U.S. Department of Commerce
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior, Fish and Wildlife Service, Chicago Field Office
- U.S. Department of the Interior, Office of Environmental Policy and Compliance
- U.S. Environmental Protection Agency, Region V, Office of Environmental Review
- U.S. Senator Richard J. Durbin
- U.S. Senator Mark Kirk
- U.S. Representative Adam Kinzinger, District No. 16

5.2 State

- Chicago Metropolitan Agency for Planning
- Illinois Bureau of the Budget
- Illinois Commerce Commission
- Illinois Department of Agriculture
- Illinois Department of Natural Resources
- Illinois Department of Natural Resources, Office of Mines and Minerals
- Illinois Department of Natural Resources, Office of Water Resources
- Illinois Department of Public Health
- Illinois Department of Transportation, Division of Aeronautics
- Illinois Department of Transportation, Division of Highways
- Illinois Environmental Protection Agency
- Illinois Geological Survey
- Illinois Historic Preservation Agency
- Illinois Natural History Survey
- Illinois Nature Preserves Commission
- Illinois State Clearinghouse
- Illinois State Library
- Illinois Water Survey

5.3 County

Will County Planning and Zoning Commission

5.4 Local Communities and Jurisdictions

City of Wilmington

Wilmington Public Library

5.5 Other Agencies or Groups

- CREATE Program
- Illinois Farm Bureau
- South Suburban Mayors and Managers Association
- United Counties Council of Illinois
- Will County Governmental League

5.6 Operating Railroads

- Amtrak
- Union Pacific Railroad

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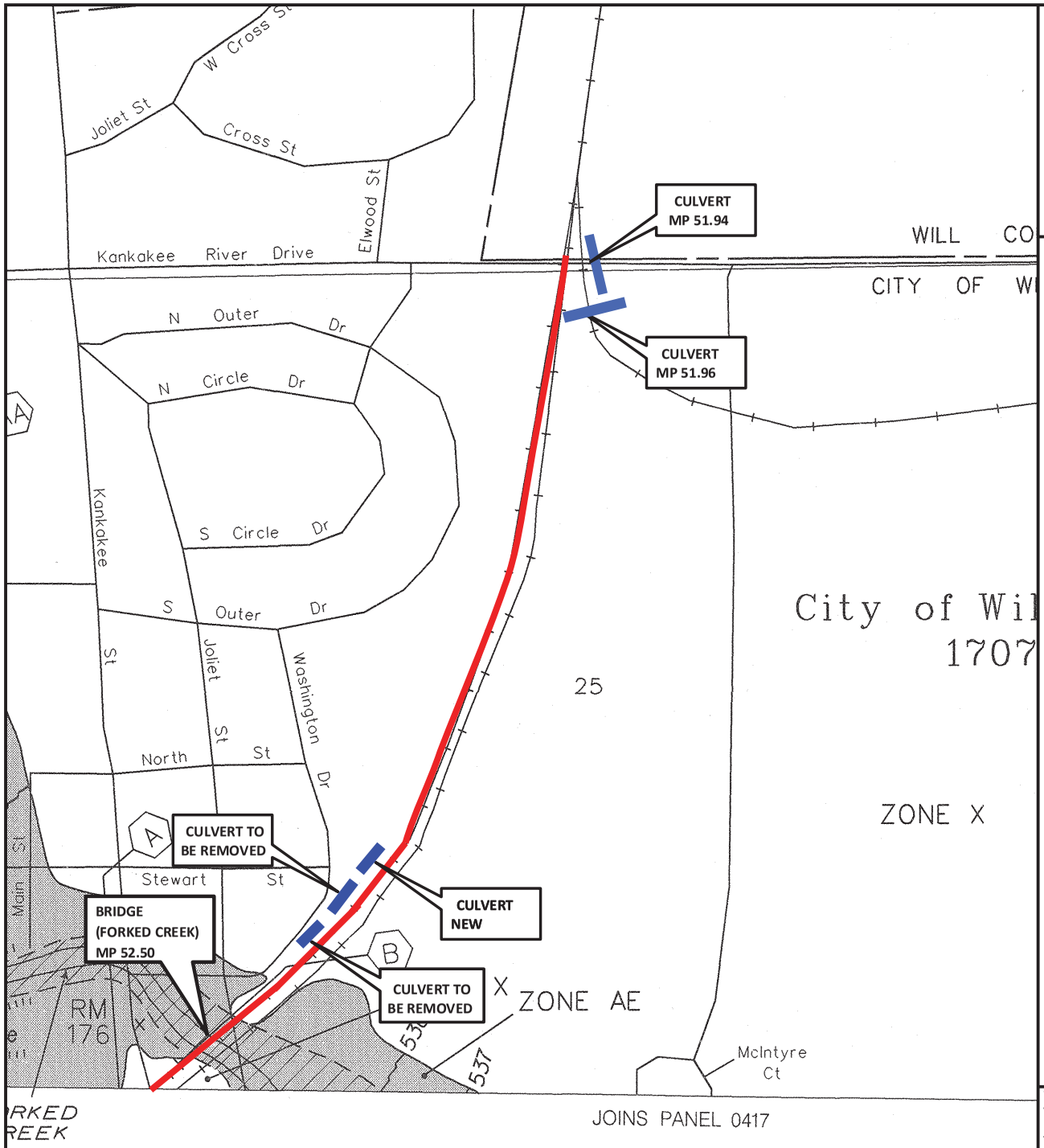
Appendix A

Flood Insurance Rate Maps



APPROXIMATE SCALE
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NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

WILL COUNTY, ILLINOIS AND INCORPORATED AREAS

PANEL 409 OF 585

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

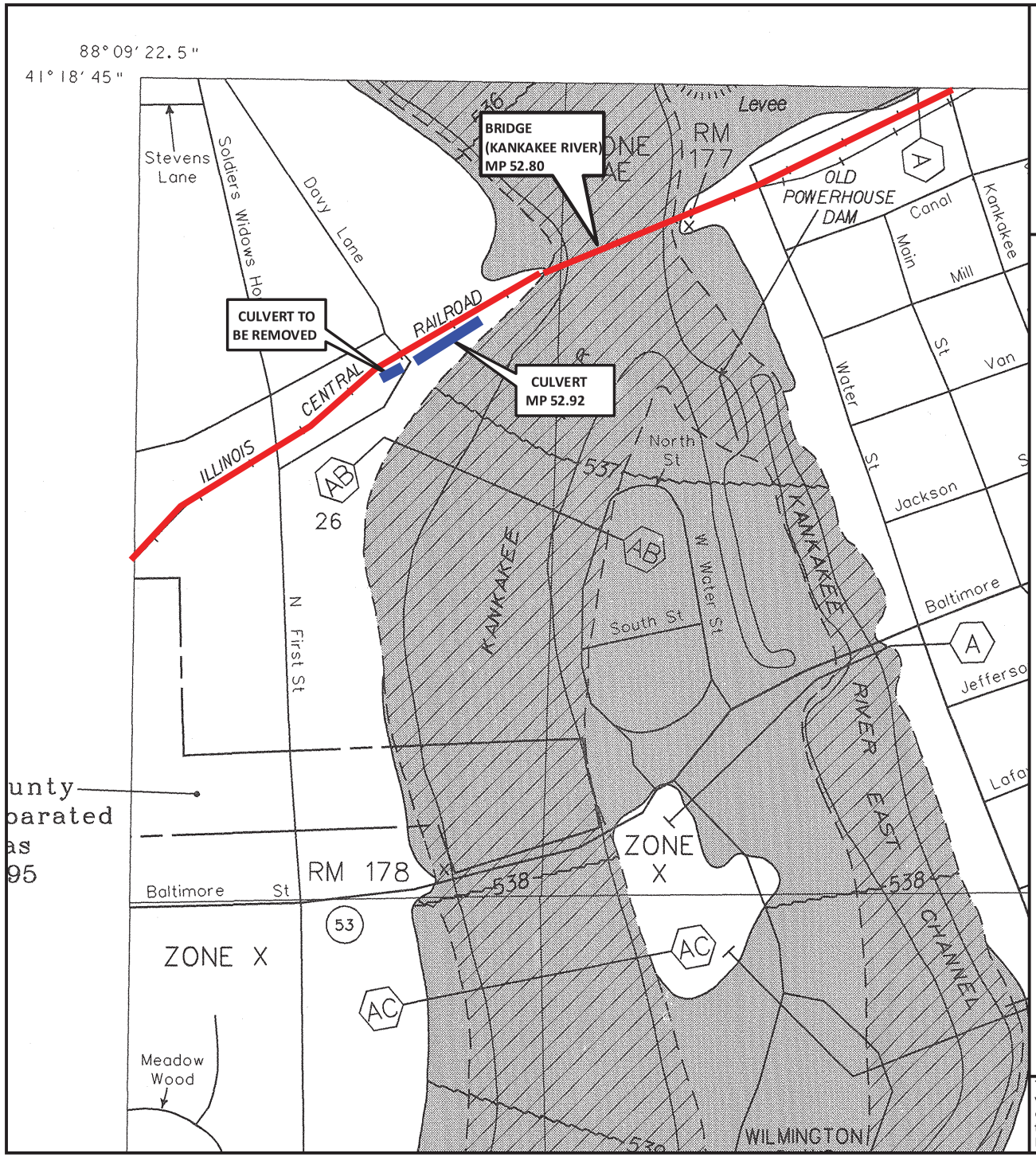
COMMUNITY	NUMBER	PANEL	SUFFIX
WILMINGTON, CITY OF	170715	0409	E
UNINCORPORATED AREAS	170695	0409	E

Notice to User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
17197C0409 E

EFFECTIVE DATE:
SEPTEMBER 6, 1995

Federal Emergency Management Agency



APPROXIMATE SCALE

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NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

WILL COUNTY, ILLINOIS AND INCORPORATED AREAS

PANEL 417 OF 585

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

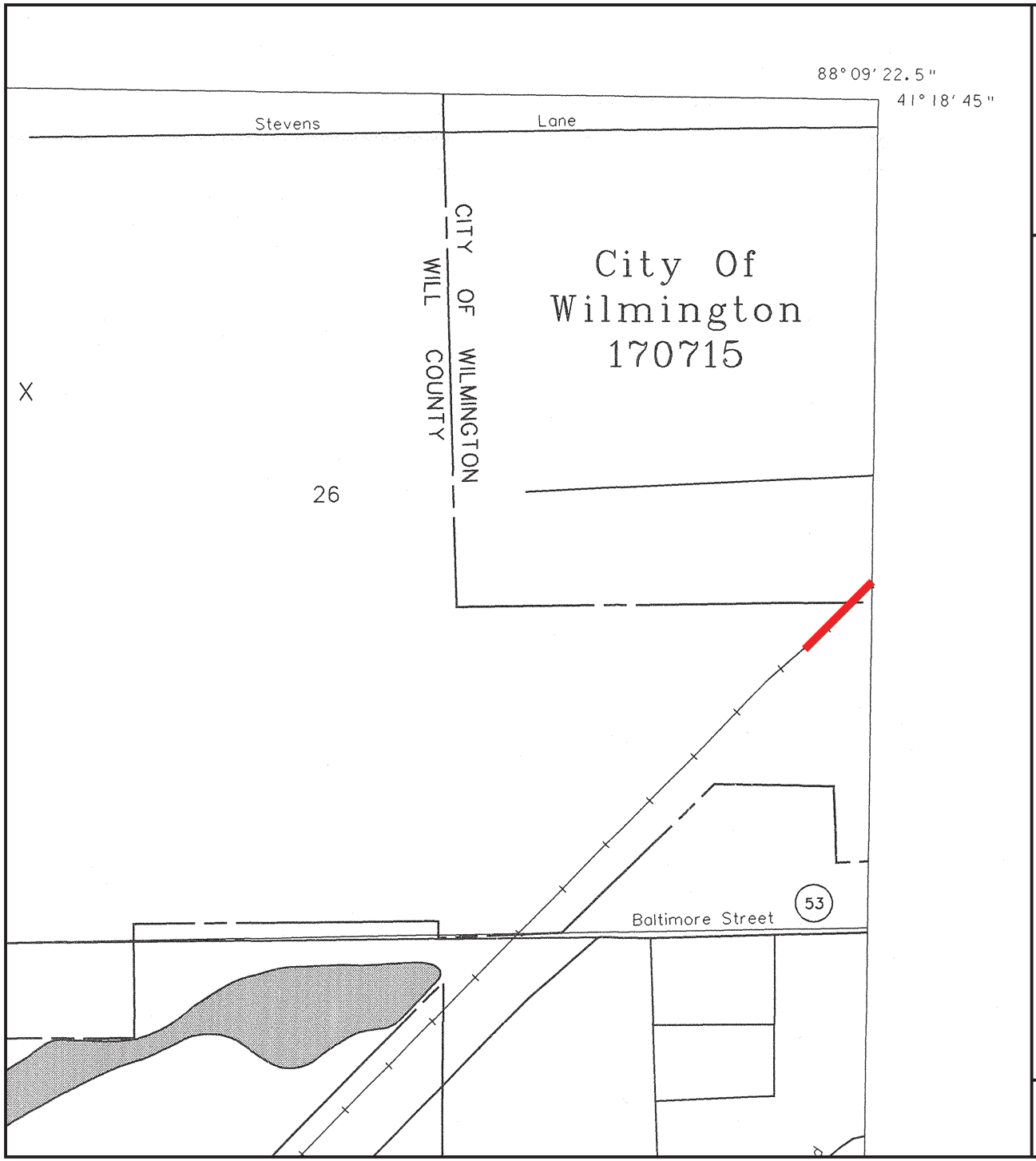
COMMUNITY	NUMBER	PANEL	SUFFIX
WILMINGTON, CITY OF	170715	0417	E
UNINCORPORATED AREAS	170695	0417	E

Notice to User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
17197C0417 E

EFFECTIVE DATE:
SEPTEMBER 6, 1995

Federal Emergency Management Agency



APPROXIMATE SCALE

500 0 500 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

WILL COUNTY,
ILLINOIS
AND INCORPORATED AREAS

PANEL 416 OF 585

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WILMINGTON, CITY OF	170715	0416	E
UNINCORPORATED AREAS	170695	0416	E

Notice to User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
17197C0416 E

EFFECTIVE DATE:
SEPTEMBER 6, 1995

Federal Emergency Management Agency

Appendix B

State Historic Preservation Officer Concurrence Letter

Illinois Department of Transportation

Memorandum

To:	John Oimoen	
From:	John Baranzelli	By: Brad Koldehoff
Subject:	Cultural Resource Concurrence	
Date:	September 30, 2014	

Will County
High Speed Rail – Chicago to Sat, Louis
Wilmington, Kankakee River
Union Pacific Railroad (MP 51.92 – 53.20)
Seq. 18444

The attached letter documents the concurrence of the State Historic Preservation Officer in the following determination by IDOT's professional cultural resources staff: "No Historic Properties Affected." This concurrence completes the necessary cultural resource coordination for the above referenced project.

Brad Koldehoff

Attachment

BK:km

Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

Will County
High-Speed Rail – Chicago to St. Louis
Wilmington, Kankakee River
Bridge & Track Improvements
IDOT Sequence #18444
ISAS Log #14018

September 24, 2014

RECEIVED
SEP 24 2014
PRESERVATION SERVICES

Federal - Section 106 Project

NO HISTORIC PROPERTIES AFFECTED

Ms. Anne Haaker
Deputy State Historic Preservation Officer
Illinois Historic Preservation Agency
Springfield, Illinois 62701

Dear Ms. Haaker:

In coordination with the Federal Railroad Administration (FRA), please find attached for the above referenced project the IDOT Environmental Survey Request form, photo documentation, and the archaeological survey report completed by Illinois State Archaeological Survey (ISAS) personnel.

Within the two-acre project area, one archaeological site was identified. Site 11WI4105 will be minimally impacted by the project. It represent a Euro-American habitation (farmstead) dating from the 1870s to the 1920s with limited information potential because of its long history of occupation. No architectural resources eligible for National Register consideration were identified by IDOT's cultural resources staff.

Therefore, on behalf of the FRA and in accordance with the established procedure for coordination of proposed IDOT projects, we request the concurrence of the State Historic Preservation Officer in our determination that no historic properties subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, will be affected by the project.

Very truly yours,

Brad H. Koldehoff, RPA
Cultural Resources Unit
Bureau of Design and Environment

cc: Andrea Martin, FRA

CONCUR
By: Anne E. Haaker
Deputy State Historic Preservation Officer
Date: 9-24-14