

**Girard Siding and Track Construction Project
Virден to Nilwood, Illinois
Environmental Assessment**

Submitted Pursuant to 64 FR 28545

by the

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

and

ILLINOIS DEPARTMENT OF TRANSPORTATION

5/16/13

Date of Approval

John Oimoen

For Illinois DOT

ABSTRACT: This Environmental Assessment (EA) evaluates the construction of a siding track parallel to the mainline track of the Union Pacific Railroad (UPRR) from the City of Virден south to the Village of Nilwood, in Macoupin County, Illinois. The Preferred Alternative includes: 1.) provision for a parallel siding track to the UPRR mainline track; 2.) reconstruction of the existing mainline track, which includes upgraded signalization; and 3.) improvements to at-grade rail/roadway crossings.

The Preferred Alternative would be of immediate benefit to the rail passenger and freight services using this line today, as well as future use for High-Speed Rail (HSR) trains. The Preferred Alternative would improve fluidity of train movement, decrease delays in passenger trains, and reduce congestion in the area between Virден to Nilwood. The siding track would also improve the efficiency of the railroad by allowing for train meets as well as an area for storing trains during maintenance or other disruptions. No significant impacts to natural, social, or human environments would occur. Approximately 10.36 acres of wetlands would be impacted by the Preferred Alternative, but these wetlands are low quality and impacts would be minimized and mitigated. Temporary impacts to water quality, noise, transportation, and air quality could occur from construction-related activities.

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

John Oimoen, Deputy Director of Railroads
IDOT Division of Public and Intermodal Transportation
James R. Thompson Center
100 West Randolph Street, Suite 6-600
Chicago, IL 60601

ENVIRONMENTAL ASSESSMENT

GIRARD SIDING AND TRACK CONSTRUCTION

Union Pacific Railroad Track Improvement
Project Virden to Nilwood, IL (MP 205.75 to MP
214.52)

MACOUPIN COUNTY, ILLINOIS

Prepared Pursuant to 42 USC § 4332, 49 USC § 303, and 64 FR 28545
by the

Illinois Department of Transportation

May 2013

The following person may be contacted for information on the Environmental Assessment:

Miriam Gutierrez, Bureau Chief
IDOT Bureau of High Speed and Passenger Rail
James R. Thompson Center
100 West Randolph Street, Suite 6-600
Chicago, IL 60601

Contents

1.0	Purpose and Need for Action	1-1
1.1	Introduction	1-1
1.2	Project History	1-2
1.3	Study Area	1-2
1.4	Project Purpose and Need.....	1-4
1.5	Applicable Regulations	1-6
2.0	Alternatives.....	2-1
2.1	Introduction	2-1
2.2	Evaluated Alternatives.....	2-1
2.2.1	No-Build Alternative	2-1
2.2.2	New Siding Track and Track Construction (Build Alternative).....	2-2
3.0	Affected Environment, Environmental Consequences, and Mitigation	3-1
3.1	Physical Environment	3-1
3.1.1	Air Quality.....	3-1
3.1.2	Energy.....	3-2
3.1.3	Floodplains	3-3
3.1.4	Noise and Vibration.....	3-8
3.1.5	Agriculture	3-12
3.1.6	Tree Resources.....	3-14
3.2	Ecological Systems.....	3-15
3.2.1	Wetlands and Waters of the US.....	3-15
3.2.2	Water Quality and Water Resources	3-28
3.2.3	Threatened and Endangered Species	3-29
3.2.4	Special Lands.....	3-33
3.2.5	Section 4(f) Properties.....	3-33
3.3	Human Environment	3-35
3.3.1	Transportation.....	3-35
3.3.2	Land Use.....	3-36
3.3.3	Demographics	3-37
3.3.4	Economics and Employment	3-39
3.3.5	Environmental Justice and Title VI.....	3-40
3.3.6	Barriers and Accessibility	3-41

3.3.7	Public Health and Safety	3-41
3.3.8	Hazardous Materials	3-42
3.3.9	Cultural Resources.....	3-48
3.4	Construction Impacts	3-51
3.5	Indirect and Cumulative Impacts.....	3-51
3.5.1	Indirect Impacts	3-51
3.5.2	Cumulative Impacts.....	3-52
3.6	Preferred Alternative.....	3-53
3.7	Permits.....	3-53
3.8	Environmental Commitments.....	3-53
4.0	Coordination and Consultation.....	4-1
4.1	Meetings.....	4-1
4.2	Agencies.....	4-1
4.2.1	State Historic Preservation Office (SHPO) Consultation	4-1
4.2.2	Illinois Department of Natural Resources (IDNR) Consultation	4-1
4.2.3	U.S. Fish and Wildlife Service.....	4-1
5.0	Distribution List.....	5-1
5.1	Agency Coordination	5-1
5.1.1	Federal Agencies.....	5-1
5.1.2	State Agencies	5-1
5.1.3	Counties.....	5-1
5.1.4	Local Communities and Jurisdictions	5-1
5.1.5	Railroads.....	5-1
6.0	References.....	6-1

Figures

Figure 1 – Project Area Map	1-3
Figure 2 – Proposed Improvements	2-3
Figure 3 – FIRM Map.....	3-5
Figure 4 – FIRM Map.....	3-6
Figure 5 – FIRM Map.....	3-7
Figure 6 – Environmental Inventory.....	3-17
Figure 7 – Environmental Inventory.....	3-18
Figure 8 – Environmental Inventory.....	3-19
Figure 9 – Environmental Inventory.....	3-20
Figure 10 – Environmental Inventory.....	3-21
Figure 11 – Environmental Inventory.....	3-22
Figure 12 – Environmental Inventory.....	3-23
Figure 13 – Environmental Inventory.....	3-24
Figure 14 – Potential REC Impacts.....	3-45
Figure 15 – Route 66.....	3-50

Tables

Table 1 – General Assessment Noise Analysis Results.....	3-9
Table 2 – Ground-borne Vibration General Assessment.....	3-10
Table 3 – Impacted Wetlands and their Characteristics	3-27
Table 4 – Federal and State Threatened and Endangered Species.....	3-30
Table 5 – Population and Households 2000 and 2010 Census	3-38
Table 6 – Population by Race and Ethnicity 2010	3-38
Table 7 – Employment by Major Industry.....	3-39
Table 8 – Median Household Income, 1999 (Census 2000) and 2010 (Estimated).....	3-39
Table 9 – Potential REC Impacts.....	3-46

Appendices

Appendix A	Hazardous Materials
Appendix B	Coordination and Consultation
Appendix C	Wetland Delineation Report
Appendix D	Field Studies Report
Appendix E	Build Alternative Design Drawings
Appendix F	Air Quality Analysis
Appendix G	Noise and Vibration Receptor Locations

ABBREVIATIONS AND ACRONYMS

AAI	All Appropriate Inquiries
ACM	Asbestos-Containing Material
ADA	Americans with Disabilities Act
ADID	Advanced Identification
ASTM	American Society for Testing and Materials
BDE	Bureau of Design and Environment
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe Railway
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CWA	Clean Water Act
dBA	A-Weighted Decibels
DBH	Diameter at Breast Height
DMA	Disaster Mitigation Act
EA	Environmental Assessment
EcoCAT	Ecological Compliance Assessment Tool
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Environmental Site Assessment
ESR	Environmental Survey Request
FEIS	Final Environmental Impact Statement
FEMA	Federal Environmental Management Agency
FHWA	U.S. Department of Transportation, Federal Highway Administration
FONSI	Finding of No Significant Impact
FQI	Floristic Quality Index
FR	Federal Register
FRA	U.S. Department of Transportation, Federal Railroad Administration
HAARGIS	Historic Archaeological/Architectural Resources Geographic Information System
HQAR	High Quality Aquatic Resources
HR	Historic Route
HSR	High-Speed Rail
IAC	Illinois Administration Code
IDNR	Illinois Department of Natural Resources
IDOT	Illinois Department of Transportation
IEPA	Illinois Environmental Protection Agency
IHPA	Illinois Historic Preservation Agency
ILCS	Illinois Compiled Statutes

INAI	Illinois Natural Areas Inventory
INPC	Illinois Nature Preserves Commission
ISGS	Illinois State Geological Survey
ISTEA	Intermodal Surface Transportation Efficiency Act
IWPA	Interagency Wetland Policy Act
LBP	Leas Based Paint
LESA	Land Evaluation and Site Assessment
LRM	Langheim Ready Mix
LUST	Leaking Underground Storage Tank
MP	Milepost (Mile Post)
MPH	Miles per Hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
PCB	Polychlorinated Biphenyl
PESA	Preliminary Environmental Site Assessment
PM	Particulate Matter
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROD	Record of Decision
ROW	Right-of-Way
SFR	Single-Family Residences
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
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
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WOUS	Waters of the United States

1.0 Purpose and Need for Action

1.1 Introduction

The Illinois Department of Transportation (IDOT), in coordination with the Federal Railroad Administration (FRA), has proposed to construct a siding track along the mainline service line of the Union Pacific Railroad (UPRR) from the City of Virden south, through the Village of Girard, to the Village of Nilwood, in Macoupin County, Illinois. No stationhouses are in this stretch and no new stationhouses are planned to be constructed along the limits of the Girard Siding and Track Construction Project. The "Project" spans 8.77 miles from Milepost (MP) 205.75 - just south of the Macoupin/Sangamon County boundary - from the City of Virden south to MP 214.52 in the Village of Nilwood. The Project entails the construction of an additional siding track that runs parallel to the mainline track, which would provide for uninterrupted use of the mainline track for both passenger and freight operations. It provides passing opportunities for trains moving in the opposite direction as well as slower trains moving in the same direction. Additionally, construction of the existing mainline track and improvements to signaling and at-grade rail-roadway crossings are planned. The Project is a section of the Chicago-St. Louis High-Speed Rail (HSR) Corridor Project ("Original Project") approved by FRA under the Final Environmental Impact Statement (FEIS) dated January 2003 (Record of Decision, ROD, dated January 8, 2004).

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 take actions that protect, restore, and enhance the environment (40 CFR § 1500.1).

The purpose of this Environmental Assessment (EA) is to provide FRA and the public with a full accounting of the environmental impacts of the alternatives for the Girard Siding and Track Construction Project. The EA serves as the primary document to facilitate review of the proposed action by federal, state and local agencies, and the public.

The 2003 FEIS included a proposal to construct 22 miles of freight siding as part of the Original Project. However, the exact locations of the sidings were not determined in the 2003 FEIS or the 2004 ROD. As such, the construction and location of a siding specifically in Girard was not considered in the 2003 FEIS or the 2004 ROD for the Original Project, and it must be evaluated to meet the requirements of the National Environmental Policy Act (NEPA). This EA serves as a reevaluation of the environmental information and findings of the Original Project to address impacts related to the Girard Siding and Track Construction Project.

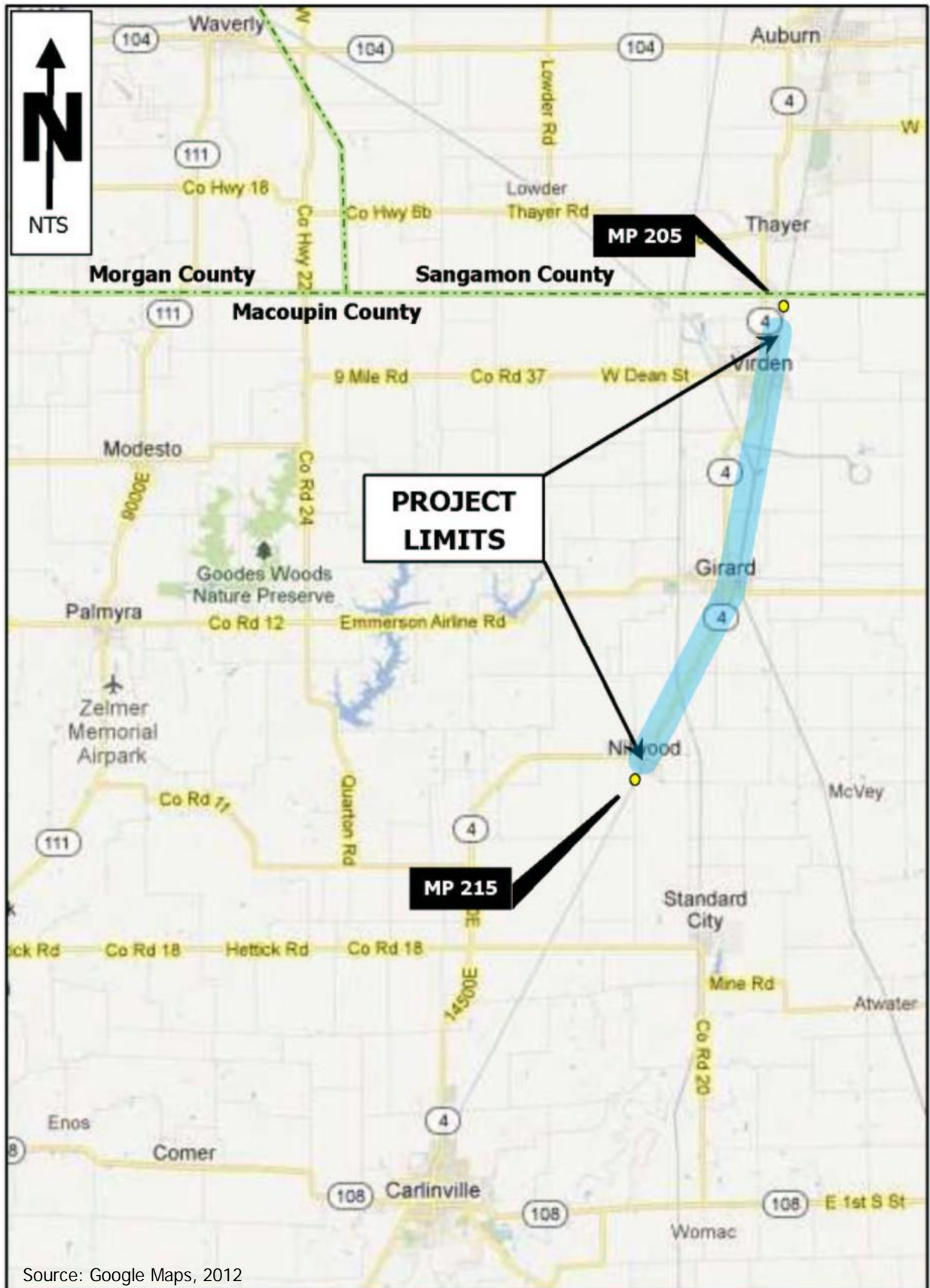
1.2 Project History

In January 2003, IDOT completed a FEIS for the Chicago to St. Louis corridor (“Original Project”). The Preferred Alternative from the FEIS included the provision of high-speed rail service, operating at 110 mph, along the existing Chicago to St. Louis Amtrak route south of Dwight, Illinois. No action was proposed between Chicago and Dwight. The proposed service consisted of three round trips per day. A Record of Decision (ROD) was signed in January 2004. Since the ROD, IDOT has made major progress on the Chicago to St. Louis 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 the Chicago-St. Louis corridor track and signal systems has been undertaken, and four-quadrant gates have been installed at many grade crossings in the corridor.

1.3 Study Area

The study area covers an 8.77 mile corridor in Macoupin County along the UPRR mainline located between the City of Virden at the north terminus and the Village of Nilwood at the south terminus (*see Figure 1*). The City of Girard is located midway in the corridor. Carlinville is the county seat of Macoupin County, located beyond the study area approximately 8 miles south-southwest of Nilwood along the UPRR mainline. Macoupin County adjoins Sangamon County on the south. The Illinois state capital, Springfield, resides in Sangamon County. The development of river, rail and road transportation systems in this part of the state were keys to early settlement and served as a means of traveling to new lands further to the west. The Chicago Mississippi Railroad was this area’s first railroad and it served as a direct link between Chicago and St. Louis. The incorporation of Virden (1852), Girard (1855), and Nilwood (1856) are directly connected to the arrival of the rail line. The underlying structure of the historic transportation systems and associated urban development remains in place and has provided an enduring framework that later systems have incorporated and built upon and that remains important to the present.

Figure 1 – Project Area Map



Source: Google Maps, 2012

1.4 Project Purpose and Need

Original Project Purpose and Need

Under NEPA, purpose and need are closely linked. Need is the definition of a problem, while the purpose is an intention to address the problem. The purpose explains why the sponsoring agency is proposing an action that may have environmental impacts. Further, the purpose provides the basis for selecting reasonable and practicable alternatives for consideration, comparing the alternatives, and selecting the preferred alternative (40 CFR § 1502.13).

For over a decade, IDOT has pursued improvements to passenger rail service between Chicago to St. Louis. 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 need of this Project coincides with the need for the Original Project, which is to provide improved transportation alternatives along this important corridor of commerce between two major cities, Chicago to the north, and St. Louis to the south. According to the ridership estimates prepared in the 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. Over 90 percent of the over 35 million corridor trips have origins or destinations in either Chicago or St. Louis. For there to be a more balanced transportation system in the corridor, trips must be diverted from the predominant modes of automobile and air. To achieve this, either a new transportation mode must be introduced or improvements to an existing, less frequently used transportation mode must be made. The conditions that will attract travelers from automobile and air travel to a new or improved mode of transportation are reduced travel time, service reliability, and safety. In addition to diverting travelers, the new or improved mode, as part of the entire transportation network, must result in improvements to the human environment relative to air pollution and energy consumption. These improvements to the human environment will be realized through the use of modern, state-of-the-art equipment and efficiency. This Project focuses on improving rail transportation by introducing HSR service to replace the existing passenger rail service. Three important needs are reduced travel time/improved service reliability, safety, and improving the human environment.

Reducing travel time and improving service reliability are of paramount importance to increasing the viability of an improved mode of transportation. The HSR service would reduce travel time between Chicago and St. Louis, resulting in travel times that are shorter than can be achieved by automobile or bus. Additionally, downtown-to-downtown travel times by rail would be comparable to air service. Reliability, relative to HSR, is a product of frequency of service, on-time performance, and accessibility. The HSR proposal advanced would include substantial improvements in terms of frequency of service and on-time performance over the existing Amtrak service and would also be more, or as accessible, as existing and future proposed air service. The HSR service would also not be subject to highway congestion near the Chicago and St. Louis downtown areas or airports.

To divert travelers from automobile and air modes, potential HSR passengers must also believe use of the service is safe, as well as faster and more reliable. Safety pertains to passengers getting to and using the Chicago to St. Louis High-Speed Rail Project parking facilities at the HSR stations, walking through the stations to board the service, and traveling on the HSR service. Safety enhancements included as part of the HSR proposal advanced would result in improvements to overall rail passenger safety when compared to existing rail service and the other modes of travel.

Provision of a transportation network with a more balanced use of the different modes would result in benefits to the human environment. The HSR proposal would include modern, state-of-the-art rail equipment that would result in an overall reduction in passenger transportation-related emissions in the corridor when air quality is considered. Emissions from existing rail service, with the exception of nitrogen oxides, are less than either auto or air travel when compared on a passenger-mile basis. As a result, diversions of travel from these modes to HSR service would result in reduced volatile organic compounds (VOC) and carbon monoxide emission levels in the corridor. Additionally, implementation of the HSR proposal advanced would result in an overall reduction in energy consumed by the alternative modes of travel in the corridor. Existing rail passenger service in the corridor is currently more efficient than air and automobile travel, in terms of energy consumption per passenger-mile, and the proposed HSR service would improve upon this efficiency.

Girard Siding and Track Construction Project Purpose and Need

The Girard Siding and Track Construction Project is an important component of the overall Original Project. The purpose of the Project is to make improvements which will reduce passenger train delays that occur because of frequent freight trains and a lack of passing opportunity. A new siding, gate reinforcements, and signal system upgrades are needed in order to accommodate the increase in train speed. Provision of a section of extended second main track (siding) in the vicinity of Girard addresses operational needs. First, it allows for consolidation of the UPRR and BNSF lines through Girard, which will serve to reduce maintenance requirements along with other operational benefits. Secondly, the siding allows for dual track use between freights and both corridor and long-distance trains to occur without impeding the passenger trains' progress. Identification of the need for this track arrangement to be located in the Girard area was determined by UPRR's capacity analysis of the corridor's operation which resulted in optimized locations for sidings/extended second main track sections.

1.5 Applicable Regulations

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

- Endangered Species Act, as regulated at 50 CFR Part 17
- Magnuson-Stevens Fishery Conservation and Management Act, 50 CFR Part 600
- Public Law 91-190, National Environmental Policy Act of 1969, 42 USC § 4321 et seq., signed January 1, 1970
- Public Law 95-217, Clean Water Act 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 (CWA), 33 USC § 1344
- Section 6(f) of the Land and Water Conservation Act of 1965, 16 USC § 460
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 USC § 4601 et seq
- 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 ILCS 5)
- Illinois Interagency Wetland Policy Act of 1989 (20 ILCS 830)
- "Implementation Procedures for the Interagency Wetland Policy Act of 1989" (17 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 with 70 ILCS 405 Soil and Water Conservation Districts Act.

2.0 Alternatives

2.1 Introduction

The alternatives evaluated in this EA include the (1) No-Build Alternative and (2) the Build Alternative. The Build Alternative provides for three main components: (1) provision for a parallel siding track to the UPRR mainline track; (2) construction of the existing mainline track, which includes upgraded signalization; and (3) improvements to at-grade rail/roadway crossings. The Project study area covers an 8.77 miles through the incorporated areas of Virden, Girard, and Nilwood (2010 combined population of approximately 5,800). Virden serves as the north terminus while Nilwood serves as the south terminus of the Project study area. These three developed areas are relatively equidistant from each other: Virden and Girard are approximately 4.25 miles apart and Girard and Nilwood are approximately 3.75 miles apart (center-of-town to center-of-town). The land between these municipal districts is dominated by “rural” land consisting of agricultural land, pastureland, grasslands, forested land, and open fields. The Project study area is located in the northeastern region of Macoupin County close to the Sangamon County border. There are no train stations or grade separated bridge crossings in the Project study area, nor any waterway crossings. The planned improvements require approximately 37.2 acres of additional right-of-way (ROW) and construction easements to accommodate construction of new siding track, reconstruction of the existing UPRR mainline track, and reconfiguration and realignment of at-grade roadway crossings.

Impacts to at-grade road crossings that fall under IDOT’s jurisdiction are being assessed in a separate Tier 2 Categorical Exclusion (CE) Report. However, the Girard Siding EA does include some road crossing improvements that fall within the UPRR’s jurisdiction.

2.2 Evaluated Alternatives

2.2.1 No-Build Alternative

Under the No-Build Alternative, the proposed Project would not be implemented. The existing single mainline track between Virden and Girard would remain unchanged and would receive solely routine maintenance with no track construction/replacement or siding construction. Existing culverts, roadway crossings, crossing gates, pedestrian crossings, and signal equipment would remain unimproved.

The No-Build Alternative would not meet the purpose and need of the Original Project. It would not enhance capacity and increase the fluidity of operations on the UPRR line in the section between Virden to Nilwood, passing through Girard. The No-Build Alternative would not provide the operating flexibility required in view of the growing rail freight traffic and maintenance of existing Amtrak rail passenger service.

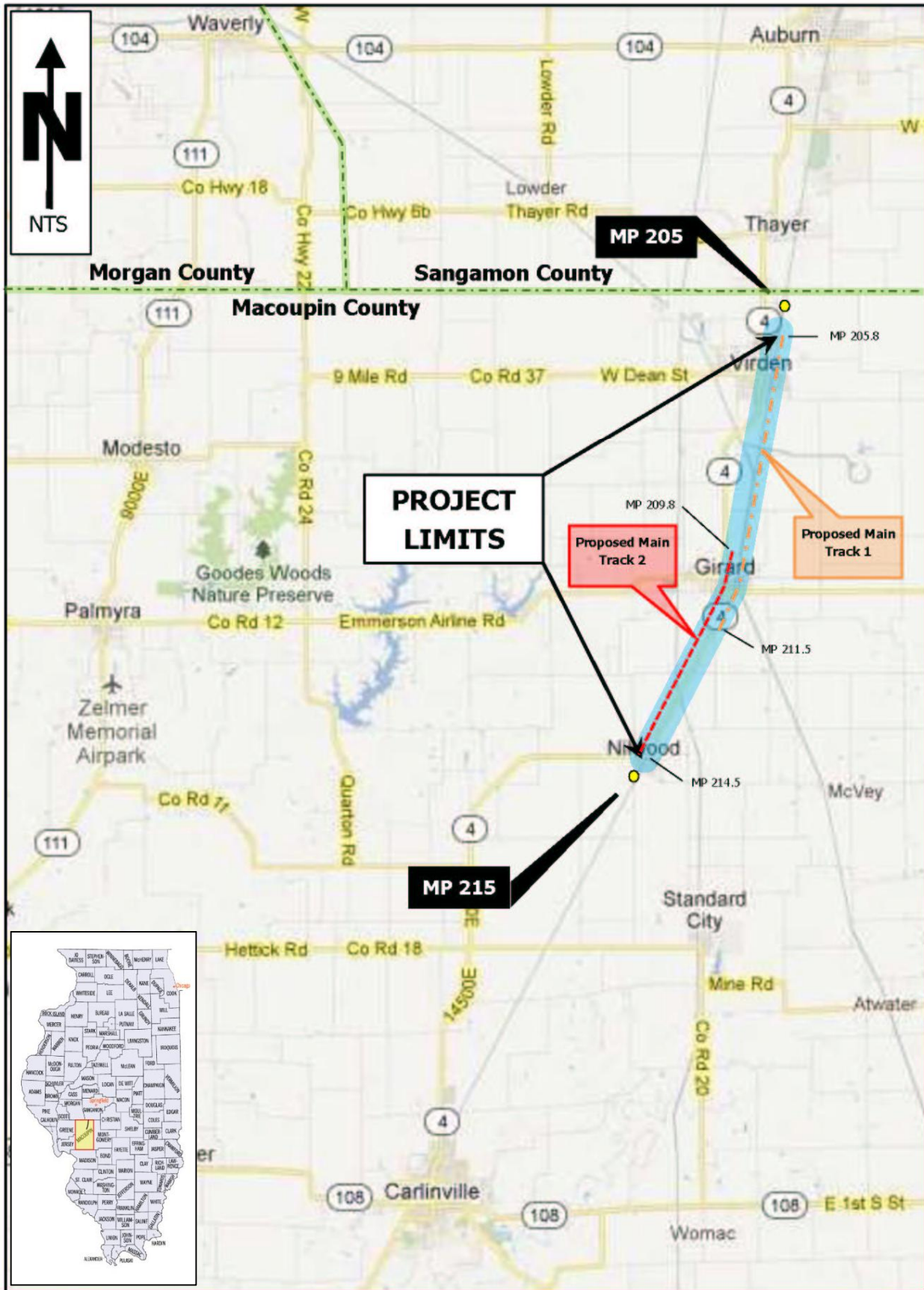
2.2.2 New Siding Track and Track Construction (Build Alternative)

The location of the proposed improvements is shown in *Figure 2*. The two major components of this alternative are the construction of new siding track and the replacement of the mainline track and a third component of improvement at the at-grade crossings. Specific elements of these improvements include: Constructing a new siding track; Constructing and replacing the existing UPRR mainline track; Removing an intersecting BNSF rail; Installing new signal equipment; Installing new crossing gates with associated apparatus; Replacing and/or constructing existing culverts; Installing new switch gears; Reconfiguring turn radii at roadway crossings; Reconstructing pedestrian walkway crossings; Reconstructing and realigning roadway approaches; and Relocating or closing access driveways and pedestrian crossings. The proposed improvement will require the acquisition of approximately 37.2 acres of additional ROW and construction easements.

The Girard Siding and Track Construction improvements, proposed as an integral element of the overall upgrades planned for the Chicago-to-St. Louis HSR Corridor, will enable passenger service up to 110 mph throughout most of the study area. The current schedule of five daily round trip passenger trains is anticipated to be maintained as part of the proposal. Of the five trips, four will be HSR and one is the long-distance Amtrak Texas Eagle service.

There are 12 at-grade rail/roadway crossings in the Project study area, eight of which are located in the three municipal areas of Virden, Girard and Nilwood. The four rail/roadway crossings in the rural areas are noted as primarily being agricultural land, and involve only public road and access crossings. There are no grade-separated crossings with roadways. However, the UPRR mainline passes under a bridge owned by BNSF (Burlington Northern Santa Fe) within the Project study area at MP 208.18. Refer to *Appendix E* for Build Alternative design drawings.

Figure 2 – Proposed Improvements



Source: Google Maps, 2012

3.0 Affected Environment, Environmental Consequences, and Mitigation

This section describes the existing resources within the Project study area and analyzes the potential beneficial and adverse impacts to these resources from the two alternatives under study. The environmental resources have been categorized into three groups: the physical environment, ecological systems, and the human environment. These groups are presented in subsections 3.1, 3.2, and 3.3, respectively.

3.1 Physical Environment

This subsection includes a discussion of the physical environmental resources potentially impacted by the proposed rail siding, track construction and associated improvements throughout the Project corridor. The resource categories of solid waste disposal, timber and mineral resources, and coastal zone management are not applicable to the proposed Project due to the geographic location and physical aspects of the Project study area and are therefore not included in the following sections. Where appropriate, mitigation measures are identified.

3.1.1 Air Quality

Air pollutants are contaminants in the atmosphere. Many man-made pollutants result from the incomplete combustion of fuels including coal, oil, natural gas, and gasoline. The principal factors affecting air pollution concentrations with respect to transportation projects are traffic, emissions, roadway type, terrain, meteorological parameters, and ambient air quality.

In accordance with the federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six pollutants considered harmful to public health and the environment. These are carbon monoxide (CO), lead, nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}), ozone and sulfur dioxide (SO₂). Areas that do not meet the standards for these pollutants are designated as nonattainment areas and states must develop a State Implementation Plan (SIP) to improve the air quality in these areas and bring them into attainment by specific deadlines set by the EPA.

Federal agencies responsible for an action occurring in a nonattainment area are required to determine if the action conforms to the applicable SIP. The U.S. EPA has developed two sets of conformity regulations:

- General Conformity - Other projects [40 CFR Part 93, Subpart B]; and
- Transportation Conformity - Transportation projects developed or approved under the Federal Aid Highway Program or Federal Transit Act [40 CFR Part 93, Subpart A].

This EA focuses on the general conformity regulations because the Project is being funded by the FRA which is subject to general conformity.

3.1.1.1 Existing Conditions

The Girard Siding and Track Construction Project study area is located in Macoupin County. Macoupin County is currently in attainment with the National and Illinois Ambient Air Quality Standards.

3.1.1.2 Potential Impacts

The No-Build Alternative could contribute to a decrease in air quality in the future as a result of a continued imbalance in use of autos in the region.

For the Build Alternative, the total annual estimated emissions generated along the HSR corridor are provided in *Appendix F*. The estimated increases in emissions of each pollutant are less than the general conformity applicability threshold values. General conformity applicability threshold values for both VOC and NO_x emissions are each an increase in 100 tons per year. These estimated increases over the entire Chicago to St. Louis corridor are 2.5 additional tons of NO_x and 0.13 tons of VOCs and are both below the general conformity thresholds.

The Build Alternative may result in temporary construction-related increases in vehicle exhaust and emissions, and airborne particulate matter during equipment operation and the hauling of material. Construction dust associated with exposed soils would be controlled, if necessary, with the application of water and other approved dust palliatives. In addition, any hydrocarbons, NO₂, SO₂ emissions, as well as airborne particulates created by fugitive dust plumes would be rapidly dissipated because the location of the site and prevailing winds allows for good air circulation. Overall, there could be a short-term, temporary degradation of local air quality during construction activities. However, these impacts would be minor and would cease immediately after the construction activity is completed. Standard best management practices (BMPs) would be utilized during the construction process in order to minimize dust. Construction of the Build Alternative could improve air quality in the region in the long-term if fewer autos are utilized in the region and more people choose HSR as a transportation option. Refer to *Appendix F* for Air Quality data.

3.1.2 Energy

The No-Build Alternative would not require construction. Therefore, no changes in energy consumption are expected. Passenger rail service under the No-Build Alternative would be a continuation of the existing five daily round trips between Chicago and St. Louis. Increased ridership resulting from the normal travel growth in the corridor, for the foreseeable future, would be accommodated by adding more cars to existing trains. Construction of the Build Alternative will require consumption of energy for processing materials, construction activities, and maintenance for the miles to new rail being constructed within the Project limits. Energy by vehicles in the Project corridor where the proposed improvements will take place may increase during construction due to possible traffic delays.

During construction of the improvements, additional energy would be expended beyond what would be used for normal operations. This additional energy would be consumed on a short-

term basis as required for construction of the new siding track, construction of the mainline track and associated improvements to existing intersecting roadways. However, once the Project is operational, long-term energy savings are expected from more energy efficient operations throughout the Project corridor.

As with the No-Build Alternative, the Build Alternative would be a continuation of the existing five daily round trips between Chicago and St. Louis. As documented in the 2003 FEIS, travel by rail is more energy efficient than travel by air or private automobile. Since rail capacity can be increased at a relatively small incremental cost, any substantial increase in rail ridership that will arise from implementation of HSR service will result in conservation of travel-related energy. Additionally, new locomotives, as would be used after construction of the Build Alternative, are designed to be more energy efficient than current locomotives.

3.1.3 Floodplains

Federal protection of floodplains is afforded by Executive Order 11988, "Floodplain Management," and by implementation of federal regulations under 44 Code of Federal Regulations (CFR) 9.00. These regulations direct federal agencies to undertake actions to avoid impacts on floodplain areas by structures built in flood-prone areas. In accordance with these federal directives, the Federal Highway Administration (FHWA) has enacted federal-aid policy guidance and regulations under 23 CFR 650.

3.1.3.1 Existing Conditions

The Federal Emergency Management Agency (FEMA) has primary responsibility for identifying flood-prone areas. FEMA conducted flood studies for the project areas in Macoupin County to locate the extent of the flooding from a 100-year storm. There are several small floodplains located within the Project study area that are shown on *Figures 3, 4, and 5*. The exhibits show areas labeled "Area Not Included" because they were not assessed in the studies and there is no FIRM map coverage of these areas to depict in an exhibit. Had there been 100-year floodplains in these areas, they would have been included. Virden, Girard, and Nilwood do not have any floodplain mapping on the county or local level.

3.1.3.2 Potential Impacts

The No-Build Alternative would not require any construction and would therefore not impact any 100-year floodplains.

The Build Alternative would require sixteen (16) culvert crossings allowing for existing surface drainage swales to drain on either side of or underneath the rail line. Six (6) of the sixteen (16) culverts are located in rural areas, dominated by agricultural uses. None of the intermittent stream crossings require bridges in the Project study area. Swale is a technical engineering term for a created, drainage system feature. An intermittent stream is a natural drainage feature that does not have an observable flow during the entire year (subject to fluctuations in precipitation, infiltration versus runoff, and evaporation rates). The Build Alternative also would not impact any 100-year floodplains. All proposed improvements would be outside 100-year floodplain

limits. The intermittent streams that are crossed by the Build Alternative do not have FEMA mapped 100-year floodplains, as indicated in *Figures 3 through 5*.

Permits

A local stormwater permit will be required for all hydraulic structures. A permit will also be required from the U.S. Army Corps of Engineers and the Illinois Department of Natural Resources (IDNR) Office of Water Resources (OWR) for all structure replacements/extensions within federal and state jurisdictional streams and waterways. Culverts located within the study area are anticipated to comply with the IDNR OWR Statewide Permit, which does not require the permit application to be filed if certain requirements are met.

Figure 3 – FIRM Map

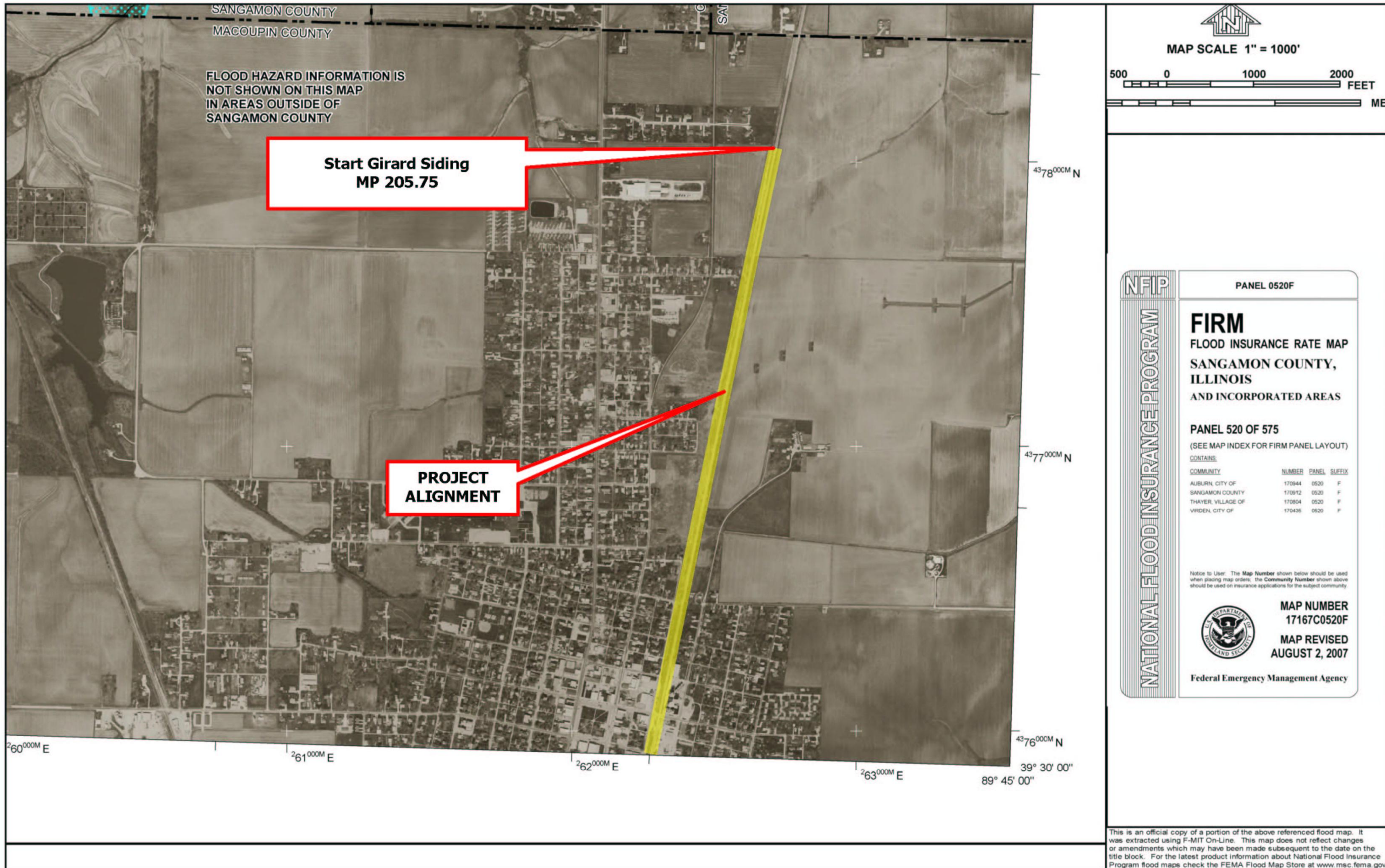


Figure 4 – FIRM Map

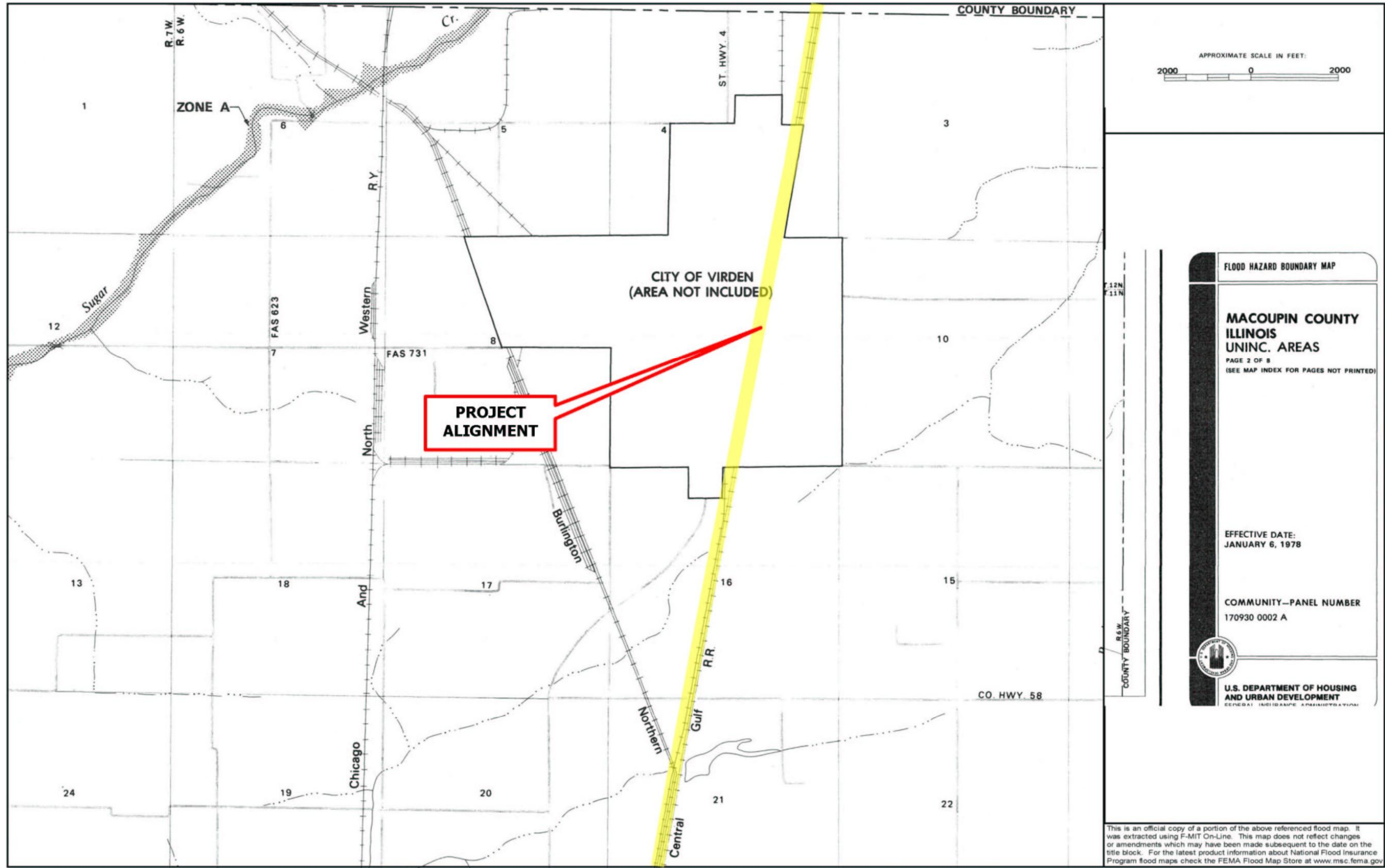
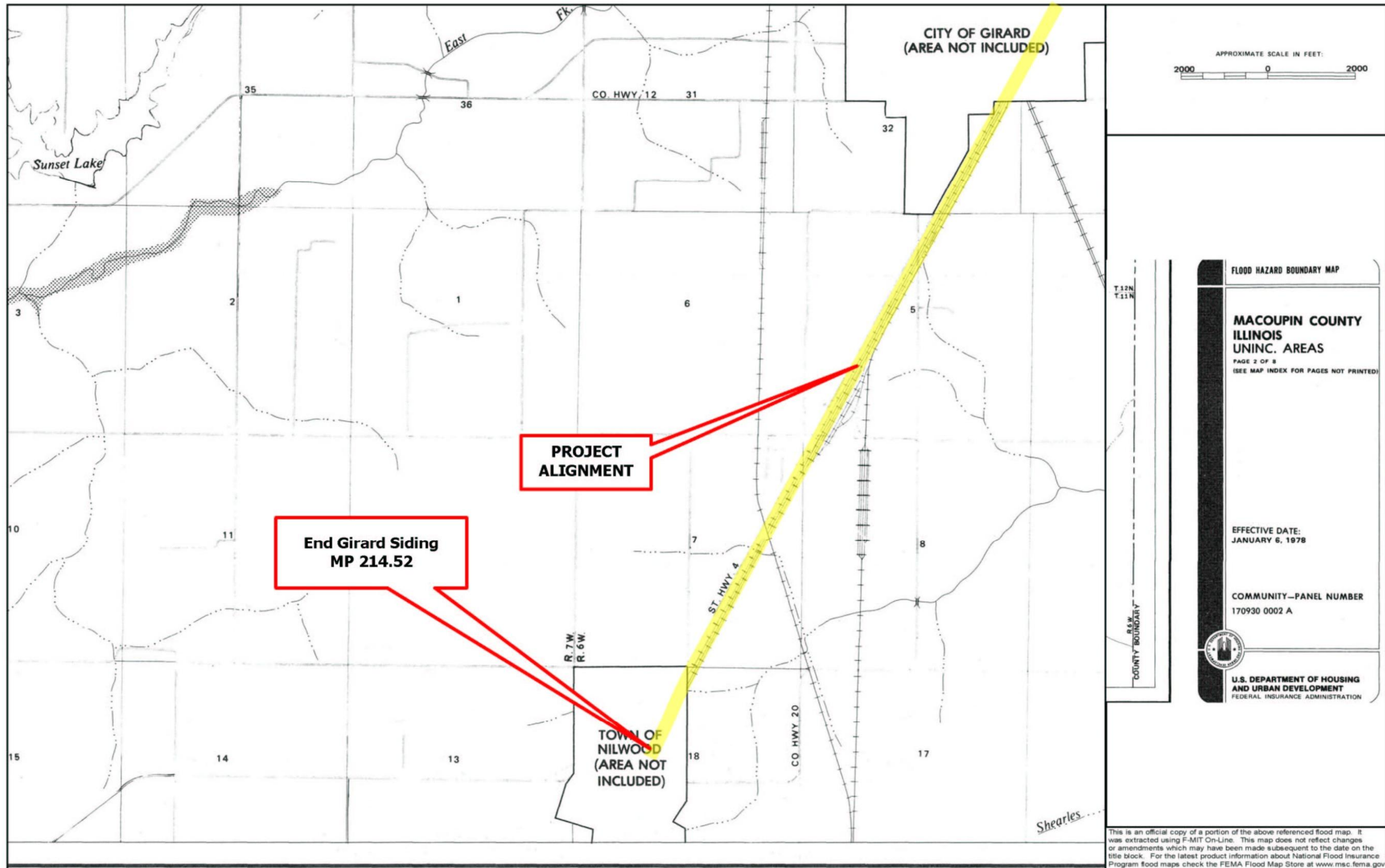


Figure 5 – FIRM Map



3.1.4 Noise and Vibration

3.1.4.1 Existing Conditions

The assessment of the potential for the Project to cause noise and vibration impacts was accomplished by applying the procedures provided by the FRA *High-Speed Ground Transportation Noise and Vibration Impact Assessment* guidance manual (U.S. Department of Transportation [USDOT] Federal Railroad Administration, September 2012). The assessment included evaluating noise and vibration from train operations.

The FRA screening procedure is used to identify sensitive receptors where the next level of analysis is appropriate. Using the FRA screening procedure approach, sensitive receptors with the potential for noise and vibration impacts are identified. Receptor locations within the screening distance are then evaluated using the general assessment level of analysis. If impacts are identified in the general assessment, a detailed analysis would be warranted.

Noise

The Project study area covers an 8.77 mile corridor, most of which is located in rural areas. However, the rail line passes through three municipalities: City of Virden, City of Girard, and Village of Nilwood. Of the three categories used for screening distances in assessing noise impacts – urban/noisy suburban, unobstructed (300 feet from center of mainline track); urban/noisy suburban, intervening buildings (200 feet from center of mainline track); and quiet suburban/rural (500 feet from center of mainline track) – only single-family residences within these municipalities are within the FRA’s urban/noisy suburban, unobstructed screening distances per the *High-Speed Ground Transportation Noise and Vibration Impact Assessment* guidance manual (U.S. Department of Transportation [USDOT] Federal Railroad Administration, September 2012). The overall noise levels receive contributions from vehicular traffic, passenger train traffic, and freight train traffic. Existing noise levels for the Project study area can be found in *Table 1*. The location of the noise receptors may be found on exhibits in *Appendix G*.

Table 1 – General Assessment Noise Analysis Results

Receptor No.	RR MP (Approx.)	Side of Track	Distance to Existing Track, feet (Approx.)	Receptor Type* (Urban/Rural)	Project Noise Levels, dBA		Build Increase Over Existing, dBA	Allowed Increase (Moderate Impact), dBA	Impact Determination
					Existing/No-Build	Build			
R1	205.72	W	480	SFR, R	45	43	-2	3	No Impact
R2	205.73	W	310	SFR, R	48	46	-2	3	No Impact
R3	205.98	W	290	SFR, U	48	46	-2	3	No Impact
R4	206.30	W	260	SFR, U	49	47	-2	3	No Impact
R5	206.68	E	275	SFR, U	49	47	-2	3	No Impact
R6	206.70	E	280	SFR, U	49	47	-2	3	No Impact
R7	206.71	E	275	SFR, U	49	47	-2	3	No Impact
R8	206.74	E	270	SFR, U	49	47	-2	3	No Impact
R9	206.76	E	270	SFR, U	49	47	-2	3	No Impact
R10	206.78	E	275	SFR, U	49	47	-2	3	No Impact
R11	207.79	E	285	SFR, U	49	47	-2	2	No Impact
R12	206.81	E	275	SFR, U	49	47	-2	3	No Impact
R13	206.82	E	285	SFR, U	49	47	-2	3	No Impact
R14	206.83	E	280	SFR, U	49	47	-2	3	No Impact
R15	206.85	E	280	SFR, U	49	47	-2	3	No Impact
R16	206.87	E	275	SFR, U	49	47	-2	3	No Impact
R17	206.93	E	270	SFR, U	49	47	-2	3	No Impact
R18	206.99	E	260	SFR, U	49	47	-2	3	No Impact
R19	207.01	E	265	SFR, U	49	47	-2	3	No Impact
R20	207.00	E	280	SFR, U	49	47	-2	3	No Impact
R21	207.03	E	275	SFR, U	49	47	-2	3	No Impact
R22	207.05	E	270	SFR, U	49	47	-2	3	No Impact
R23	207.08	E	270	SFR, U	49	47	-2	3	No Impact
R24	207.12	E	270	SFR, U	49	47	-2	3	No Impact
R25	207.14	E	275	SFR, U	49	47	-2	3	No Impact
R26	207.17	E	275	SFR, U	49	47	-2	3	No Impact
R27	207.22	E	255	SFR, U	49	47	-2	3	No Impact
R28	207.25	E	260	SFR, U	49	47	-2	3	No Impact
R29	207.28	E	265	SFR, U	49	47	-2	3	No Impact
R30	207.30	E	275	SFR, U	49	47	-2	3	No Impact
R31	207.33	E	270	SFR, U	49	47	-2	3	No Impact
R32	207.36	E	270	SFR, U	49	47	-2	3	No Impact
R33	207.38	E	270	SFR, U	49	47	-2	3	No Impact
R34	207.40	E	260	SFR, U	49	47	-2	3	No Impact
R35	207.41	E	275	SFR, U	49	47	-2	3	No Impact
R36	207.43	E	265	SFR, U	49	47	-2	3	No Impact
R37	207.45	E	255	SFR, U	49	47	-2	3	No Impact
R38	207.46	W	260	SFR, U	49	47	-2	3	No Impact
R39	208.52	W	290	SFR, R	48	46	-2	3	No Impact
R40	210.55	E	250	SFR, U	50	48	-2	3	No Impact
R41	210.64	E	275	SFR, U	49	47	-2	3	No Impact
R42	210.68	E	260	SFR, U	49	47	-2	3	No Impact
R43	210.73	E	250	SFR, R	50	48	-2	3	No Impact
R44	210.78	E	290	SFR, U	48	46	-2	3	No Impact
R45	210.63	W	280	SFR, U	49	47	-2	3	No Impact
R46	210.70	W	255	SFR, U	49	47	-2	3	No Impact
R47	210.94	W	255	SFR, U	49	47	-2	3	No Impact
R48	211.60	W	425	SFR, R	46	44	-2	3	No Impact
R49	214.48	W	250	SFR, U	50	48	-2	3	No Impact
R50	214.51	W	250	SFR, U	50	48	-2	3	No Impact

*SFR = Single-Family Residence, dBA = A-Weighted Decibels

NOTE: All receptors have a Noise Metric of L_d

Vibration

The screening assessment for potential vibration effects is based on land use coupled with very general assumptions for screening distance obtained from the FRA *High-Speed Ground Transportation Noise and Vibration Impact Assessment* guidance manual (U.S. Department of Transportation [USDOT] Federal Railroad Administration, September 2012). The screening distance for residential land uses with infrequent events along a corridor with speeds less than 100 mph is 60 feet. For speeds between 100 and 200 mph the screening distance is 100 feet. The FRA general assessment procedures for vibration were used to analyze existing vibration levels. *Table 2* includes information for existing vibration levels, which are the same as the No-Build Alternative. The location of the vibration receptors may be found on exhibits in *Appendix G*.

Table 2 – Ground-borne Vibration General Assessment

Receptor No.	Distance to Existing Track, feet	Existing Vibration Level, VdB ¹	Build Vibration Level, VdB	Increase in Vibration Level, VdB	FRA Criteria (Infrequent Events, VdB)	Impact Determination
Virден: R1	90	71	74	3	80	No
Virден: R2	70	73	76	3	80	No
Virден: R3	70	73	76	3	80	No
Girard: R4	50	75	78	3	80	No
Girard: R5	100	70	73	3	80	No
Nilwood: R6	60	74	77	3	80	No
Nilwood: R7	100	70	73	3	80	No
Nilwood: R8	50	75	78	3	80	No

¹ VdB is a logarithmic scaling of vibration magnitude

3.1.4.2 *Potential Impacts*

Noise

The No-Build Alternative would not create any change in noise impacts from the existing conditions since there would be no change in passenger train operations.

The 2004 ROD noise analysis used the distance of 250 feet as the limit of the analysis. In October 2005 the Federal Railroad Administration published an updated “High-Speed Ground Transportation Noise and Vibration Impact Assessment” (the original was published in 1998 and subsequently update in September 2012). Only those sensitive receptors greater than 250 feet, and less than 300 feet for urban/noisy suburban areas with steel-wheeled trains and 500 feet for quiet suburban/rural areas with steel-wheeled trains, from the centerline of the track were considered for analysis in this EA. The proposed Girard Siding and Track Construction improvements were evaluated for noise impacts associated with the construction of the Build Alternative, as previously detailed in Section 2.2. *Table 1* includes the existing noise levels and the noise levels for the Build Alternative.

While vehicular traffic contributes to the overall noise level, the construction of new siding track and reconstruction of the existing mainline track would not change vehicular traffic substantially since the existing traffic flow is expected to change minimally with the Build Alternative. Therefore, vehicular traffic was not considered in the impact evaluation. Also, the Build Alternative should not re-distribute or change vehicular traffic patterns and would not

add capacity to the overall highway/street system. However, due to the study area being within an active rail corridor, at the three municipal locations, with the trains being the dominant noise source, the passenger train traffic and freight train traffic were taken into consideration. The impact evaluation is based on the comparison of the existing train noise and the train noise under the Build Alternative condition.

There would be no noise impacts on sensitive receptors since the current five daily round-trip trains traveling between Chicago and St. Louis would continue to pass through the Project study area as those trains currently do. However, the freight train noise is the dominant noise source in the Project study area and therefore the overall noise levels would remain similar since no changes in freight noise level is expected between the No-Build and Build Alternatives. Since there are no stops in any of the urban areas in the Project study area, only slow-downs to conform to speed limits in populated areas, the No-Build Alternative and the Build Alternative are not expected to adversely impact any of the noise receptors. As shown in *Table 1*, the Build Alternative would be two dBA levels lower than the existing noise levels. An impact to a noise receptor would only occur if there had been an increase in dBA levels of three dBA or more. It should be noted that a difference of two dBA is not considered a discernable/noticeable difference.

Trucks and machinery used for construction produce noise which may affect some land uses and activities during the construction period. Residents adjacent to the study area corridor would at some time experience perceptible temporary construction noise from implementation of the Build Alternative. During construction, all equipment will be in good working order and maintenance, including the exhaust systems. Additionally, any temporary impacts would cease immediately after the construction activity is completed.

Vibration

Sensitive receptors identified within the 60-foot and 100-foot screening distance were evaluated for potential vibration impacts. Three sensitive receptors were identified for the No-Build Alternative within the screening distance. The same three sensitive receptors were identified for the Build Alternative along with an additional five sensitive receptors falling between the 60-foot and 100-foot distance.

Since passenger trains would not be stopping in any of the population centers, there would be no alterations in vibration impacts for both the No-Build and Build Alternative as train speeds would be virtually the same under either scenario. Therefore, only vibration effects for freight trains were included in the analysis in *Table 2*. As shown in *Table 2*, the change in speed for the Build Alternative, in relation to calculating the VdB, did not result in great differences between the existing and the build conditions. Even with the increase of 3 VdB for the Build Alternative, the increases were still considerably below the threshold criteria of 80 VdB.

Based on the ground-borne vibration analysis for the study, vibration impacts are not anticipated as part of the proposed Project for either the No-Build or Build Alternative. There are no ground-borne noise impacts associated with vibration as the ground-borne noise levels are less than the FRA impact criteria. Refer to *Appendix G* for Noise and Vibration data.

Mitigation

UPRR will ensure that all equipment will be in good working order and maintained, including the exhaust systems.

3.1.5 Agriculture

3.1.5.1 Existing Conditions

Agriculture is the primary land use in the Project corridor except for the urban areas of Virden, Girard, and Nilwood. Along the Project corridor, the main agricultural crops are row crops primarily corn and soybeans. Agricultural lands surround each of the three urban areas, but are in close proximity to the rail line where the rail line enters/exits each urban area where there is a transition in land uses. Refer to *Appendix D* Field Studies Report for field surveys from 2011 and 2012 which include vegetation cover types along the Project corridor including agricultural land. Note on field surveys, the reports include areas outside of the scope of this EA.

Soil types located within the Project study area include Virden, Harrison, Herrick, Oconee, Coatsburg, and Ipava. Herrick, Ipava, and Oconee are considered prime farmland soils.

Prime and Important Farmlands

Illinois soils fall into one of three categories: (1) Prime Farmland; (2) Important Farmland; and (3) Other Land as defined by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. It may exist as cropland, pastureland, rangeland, forest land, or other land, but is not designated in urbanized areas or in bodies of water. Farmland of statewide importance is land, other than prime farmland, that is also highly productive but generally less productive than prime farmland and/or possesses greater restrictions that negatively affect its use for agricultural purposes. Other land may have the potential for use as farmland, but some restriction(s) prevents its use for agriculture.

Coordination with NRCS is not required because the proposed right-of-way and proposed easements, outside municipal limits, total 1.5 acres per mile, which is less than the three acres per mile stipulated in the IDOT Bureau of Design and Environment (BDE) manual (June 2011) as the trigger point in which coordination is required. Additionally, Macoupin County does not have an approved Land Evaluation and Site Assessment (LESA) system necessary to evaluate prime farmland impacts.

Agricultural Zoning

There is no agricultural zoning in Macoupin County.

Private Farm Crossings

There are no identified private farm crossings in the Project study area.

3.1.5.2 Potential Impacts

Severed Farm Units

A farm unit is defined as one or more parcels of land that are farmed as a single operation. It is farmed under one management, although it may be under multiple ownerships. A severed farm operation is an operation in which the farmland is bisected either laterally or diagonally by proposed railroad right-of-way or highway grade separations, thereby dividing a parcel of land into two or more individual plots. The limits of farm properties were obtained from tract maps provided by the Macoupin County Tax Assessor's Office for the townships where the Project area is located. By definition, there are no severed farm units resulting from the proposed improvements under the Build Alternative.

Severance Management Zones

Severance management zones are those areas of a farm, which, after being diagonally intersected by a proposed improvement (such as new railroad right-of-way), are adversely affected by the resulting triangular shape. These zones often cause problems for continued farming. The resulting triangular design makes it difficult to turn a tractor and farm implements without damaging or removing plants or a causing misapplication of farm chemicals, which often result in production loss. Since no one parcel under the same ownership exceeds the minimum five acres, it has been determined there will be no severed management zones in the Project area resulting from the proposed improvements under the Build Alternative.

Uneconomic Remnants

There are no severed farm parcels being created by the planned improvements in the Project study area.

Landlocked Parcels – No Access

There are no landlocked farm parcels being created by the planned improvements in the Project study area.

Agricultural Protection Areas

The Agricultural Areas Conservation and Protection Act, enacted in 1980, allow for parcels of land greater than 350 acres in size to be designated as agricultural protection areas. No known agricultural protection areas in the Project area will be affected by the proposed improvements under the Build Alternative.

Agricultural Income Loss

Based on limited right-of-way land acquisition required to implement the proposed improvements under the Build Alternative in the Project study area, the loss in agricultural income will be negligible. The amount of agricultural land affected by high-speed rail in the Project corridor will be kept to a minimum by proposing to acquire land within 50 feet of rights-of-way adjacent to existing railroad right-of-way. No farm residences or agricultural buildings

will be affected by the Build Alternative. The No-Build Alternative would not impact any agricultural area.

Prime Farmland

Although Herrick, Ipava, and Oconee soils are considered prime farmland soil types, the areas within the Project study area that have these soils are located within developed areas of land and not on land utilized for crops/farms.

For the No-Build Alternative, there would be no changes to the agricultural land along the Project study area.

For the Build Alternative, there would be minimal impacts to agricultural land along the Project area resulting in no measurable losses in crop productivity. A total of 8.34 acres of agricultural land will be converted from agricultural use to a developed land use. Proposed ROW would be narrow strips of land that are parallel to the mainline tracks and would not create severed, landlocked, or uneconomic remnant farms.

3.1.6 Tree Resources

3.1.6.1 Existing Conditions

As documented in the Report of Fall 2011/Spring 2012 Field Studies Union Pacific Mile Posts 200.76 to 236.00 Sangamon and Macoupin Counties May 2012, a screening evaluation of forest and tree resources was conducted for the Girard Siding and Track Construction Project corridor. As the proposed improvements are located primarily within the existing railroad right-of-way, there are limited trees that would potentially be impacted. The 2012 field studies report indicated that technically there are no forested areas within the proposed Girard Siding area as forest is defined as cover type consisting of trees taller than 16.5 feet that has a tree canopy cover of at least 25 percent. In general, the dominant cover types along the Project area are hedgerow, developed land, and agricultural land. The general condition of the forested area located within the Project corridor was determined during a field visit conducted in 2012.

Limited pockets or areas of trees located along fence-rows or in developed areas were identified in the study Project corridor. The one exception is a grove of trees associated with a floodplain wetland located on either side of the mainline at approximately MP 208.80 to MP 209.10, just south of Virden. Small stands of high quality trees are generally located in residential yards. Larger stands of trees are primarily associated with wetlands or dry bed culverts. The predominant tree species in this area of Macoupin County, and potentially found within the limits of planned improvements of Project study corridor, are:

- silver maple (*Acer saccharinum*)
- cottonwood (*Populus deltooides*)
- wild black cherry (*Prunus serotina*)
- American elm (*Ulmus americana*)
- hackberry (*Celtis occidentalis*)
- black locust (*Robinia pseudoacacia*)

- red cedar (*Juniperus virginiana*)
- glossy buckthorn (*Frangula alnus*)
- Amur honeysuckle (*Lonicera maackii*)
- black walnut (*Juglans nigra*)
- white oak (*Quercus alba*)
- red mulberry (*Morus rubra*)
- staghorn sumac (*Rhus typhina*)

Sections of the right-of-way are heavily disturbed considering the routine vegetative maintenance that occurs to ensure that trees do not encroach upon the tracks. Therefore, the majority of the trees present within the right-of-way are small (less than 8 inches, diameter at breast height, DBH).

3.1.6.2 Potential Impacts

The No-Build Alternative would not impact trees as there would be no proposed work or construction.

The Build Alternative's proposed improvements are planned to occur primarily within or adjacent to existing railroad right-of-way. Tree impacts as a result of the proposed Project are anticipated to be minimal. Tree removal and mitigation is also discussed in Section 3.2.3.2, under the Mitigation subsection of the Threatened and Endangered Species section, specifically in regard to the Indiana bat (*Myotis sodalis*).

3.2 Ecological Systems

This section describes the ecological systems to be served or affected by the proposed Project. Included in this section is a discussion of the water quality and resources, threatened and endangered species, and special lands as they relate to the Build Alternative. Where appropriate, mitigation measures are identified. The inventory of environmental resources may be found in *Figures 6 through 13*.

3.2.1 Wetlands and Waters of the US

Wetlands are defined by the US Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (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 CFR Section 328.3 (b) and Section 404 of the Clean Water Act).

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.

For purposes of the Clean Water Act, "Waters of the United States" (WOUS) means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate "wetlands"; (c) All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as waters of the United States under this definition; (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) The territorial sea; and (g) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Section 10 of the Rivers and Harbors Act of 1899 (Title 33 United States Code [USC] Section 403) and Section 404 of the Clean Water Act (Title 33 USC Section 1344) authorize permits for placement of structures, dredged, or fill material into the "Waters of the U.S." Section 3.2.2 includes information on surface waters for the Project study area. The below sections discuss the wetlands found within the Project study area.

3.2.1.1 Existing Conditions

Wetlands in the Project study area were identified using the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping combined with aerial photography review and field confirmation including wetland delineations and surveys. Wetlands encountered just south Virden at approximately MP 207.75, and further south, fall within the Macoupin Creek watershed. Wetlands encountered north of approximately MP 207.75, which includes Virden, fall within the Sangamon River watershed. Refer to Figures 6 through 13 for locations of the NWI mapped wetlands. Refer to *Appendix C* for the Wetland Delineation Report for additional wetlands that were not previously mapped in the NWI. Note that the Wetland Delineation Report includes areas outside of the Girard Siding Project limits of MP 205.75 to MP 214.52 and serves as reference for more than one HSR project.

Figure 6 – Environmental Inventory

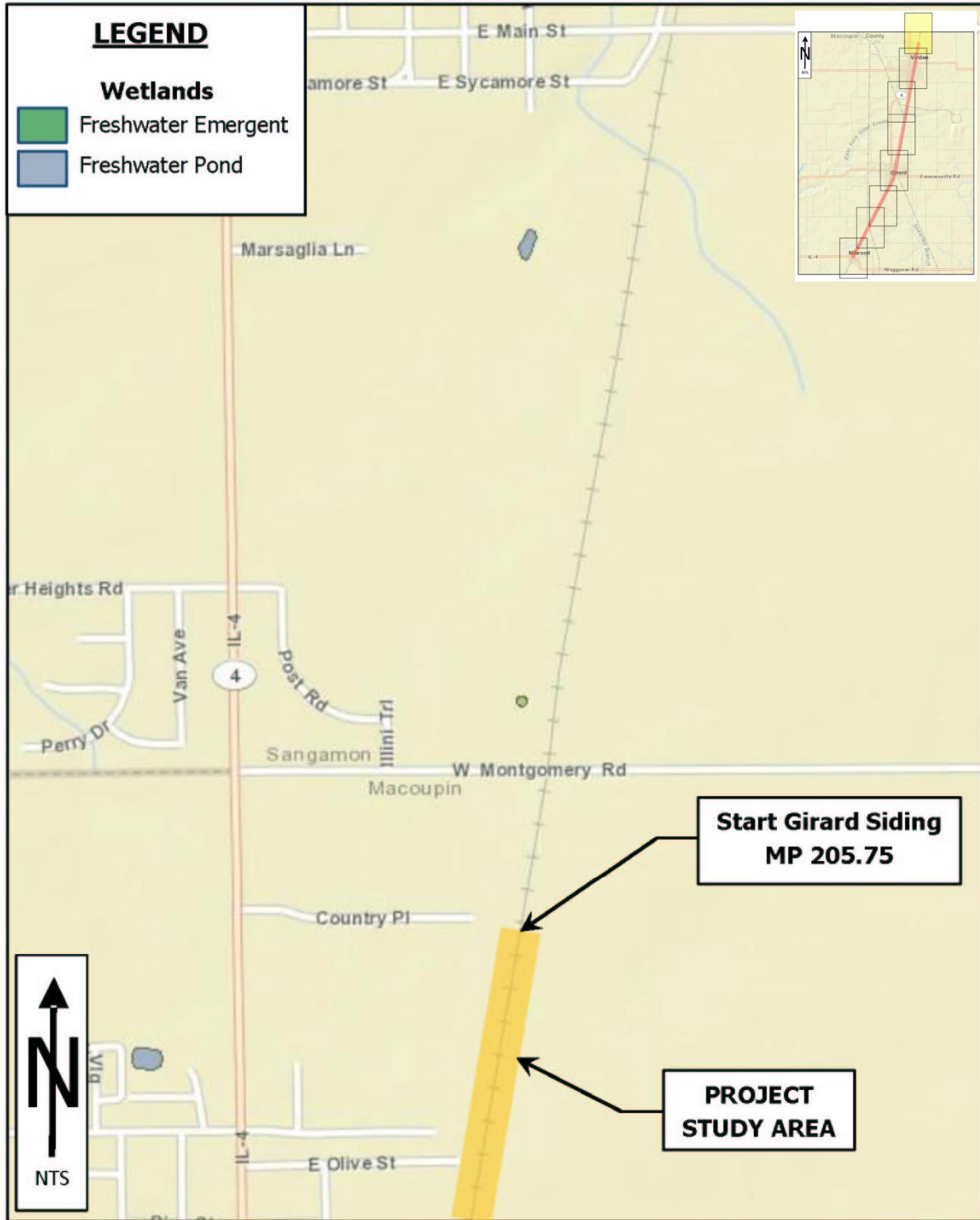


Figure 7 – Environmental Inventory



Map base: USF&WS NWI Mapping, 2012

Figure 8 – Environmental Inventory

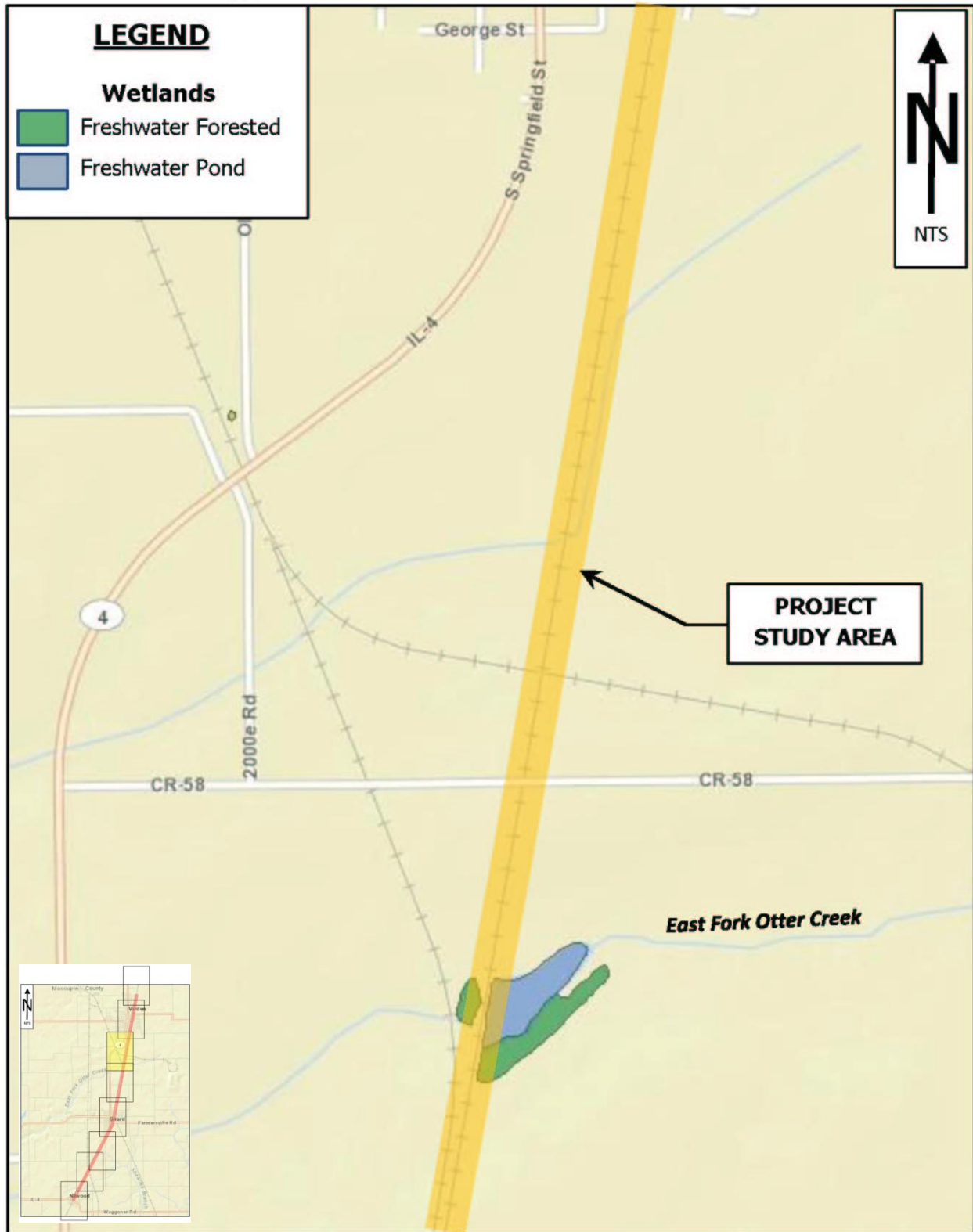
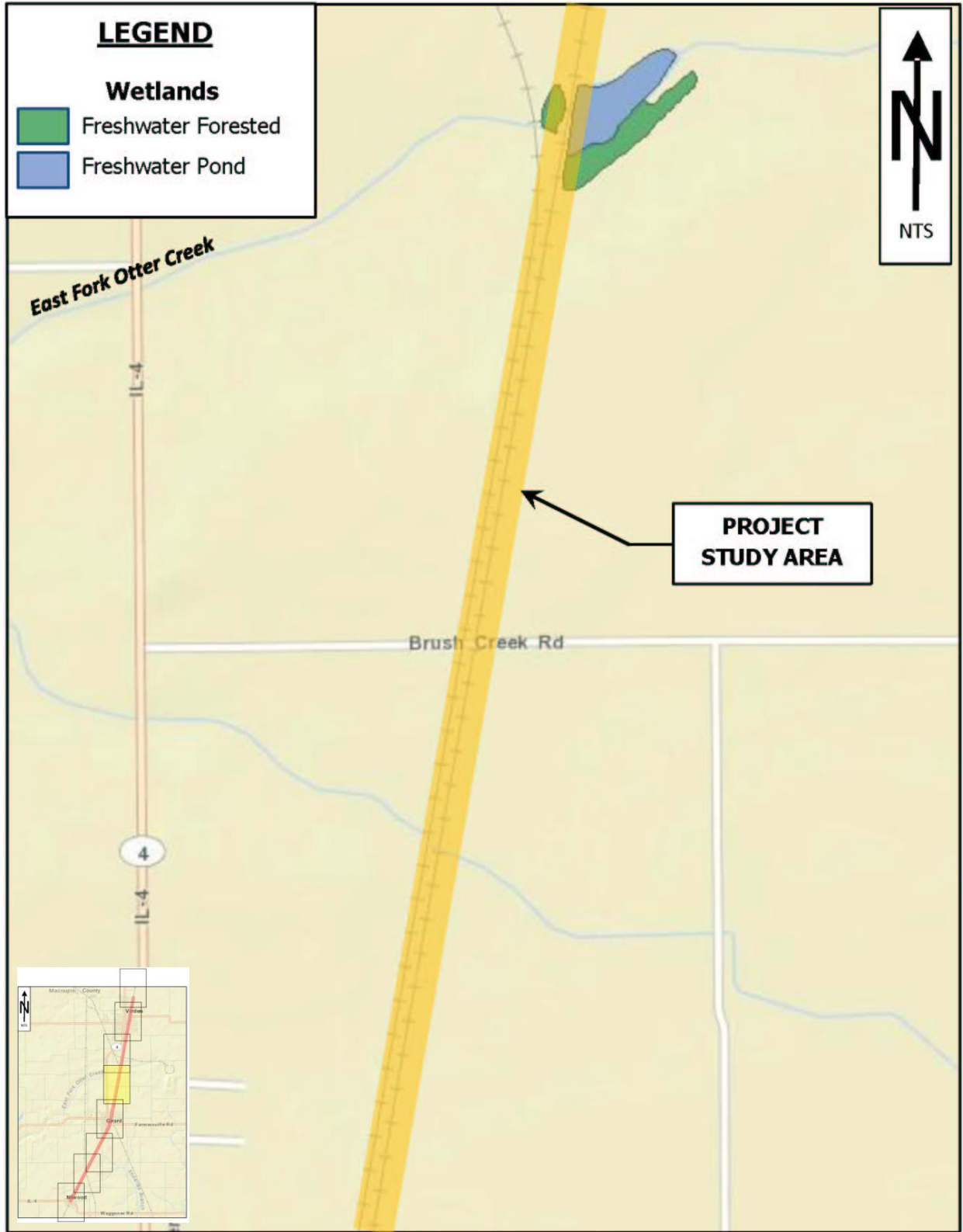


Figure 9 – Environmental Inventory



Map base: USF&WS NWI Mapping, 2012

Figure 10 – Environmental Inventory

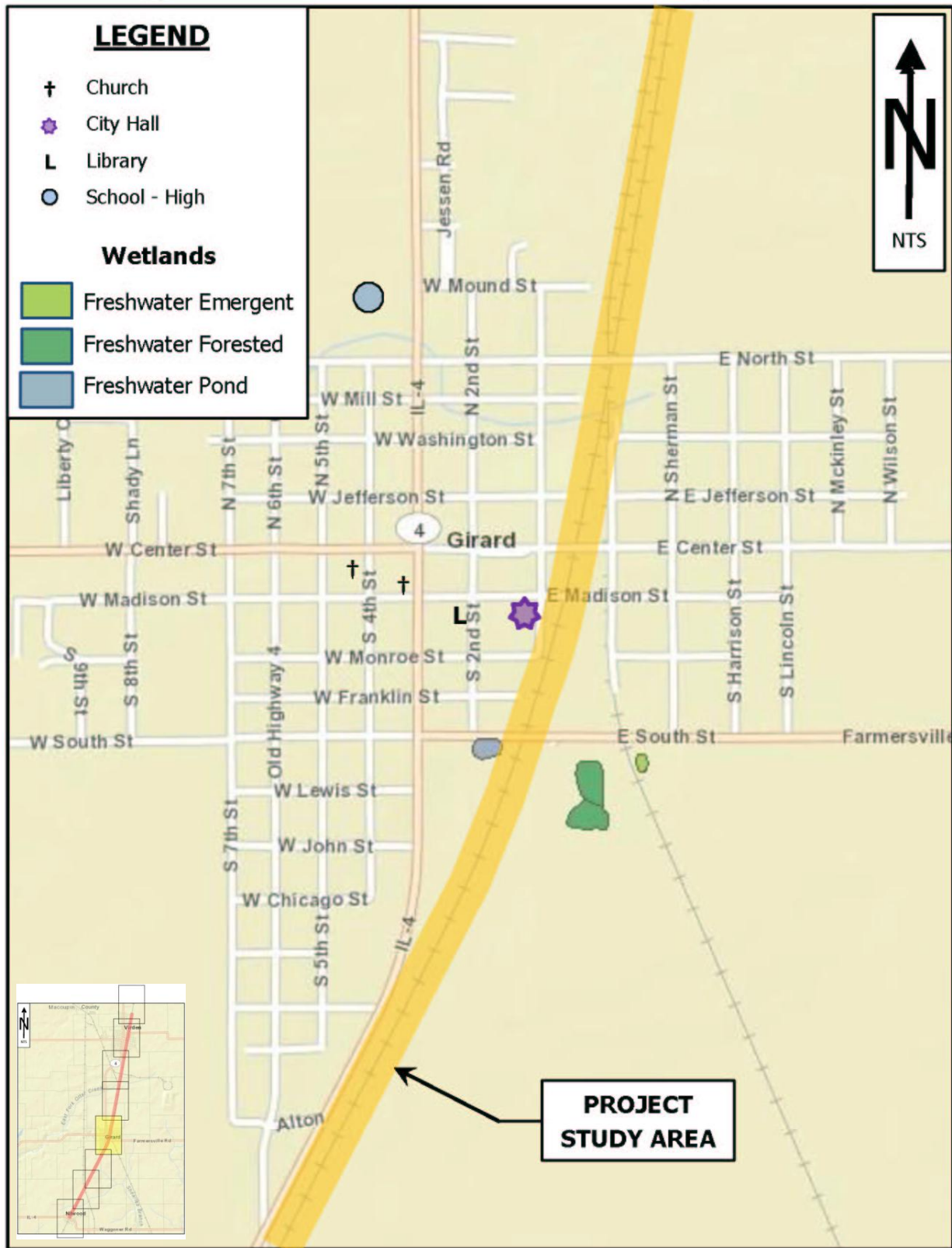


Figure 11 – Environmental Inventory

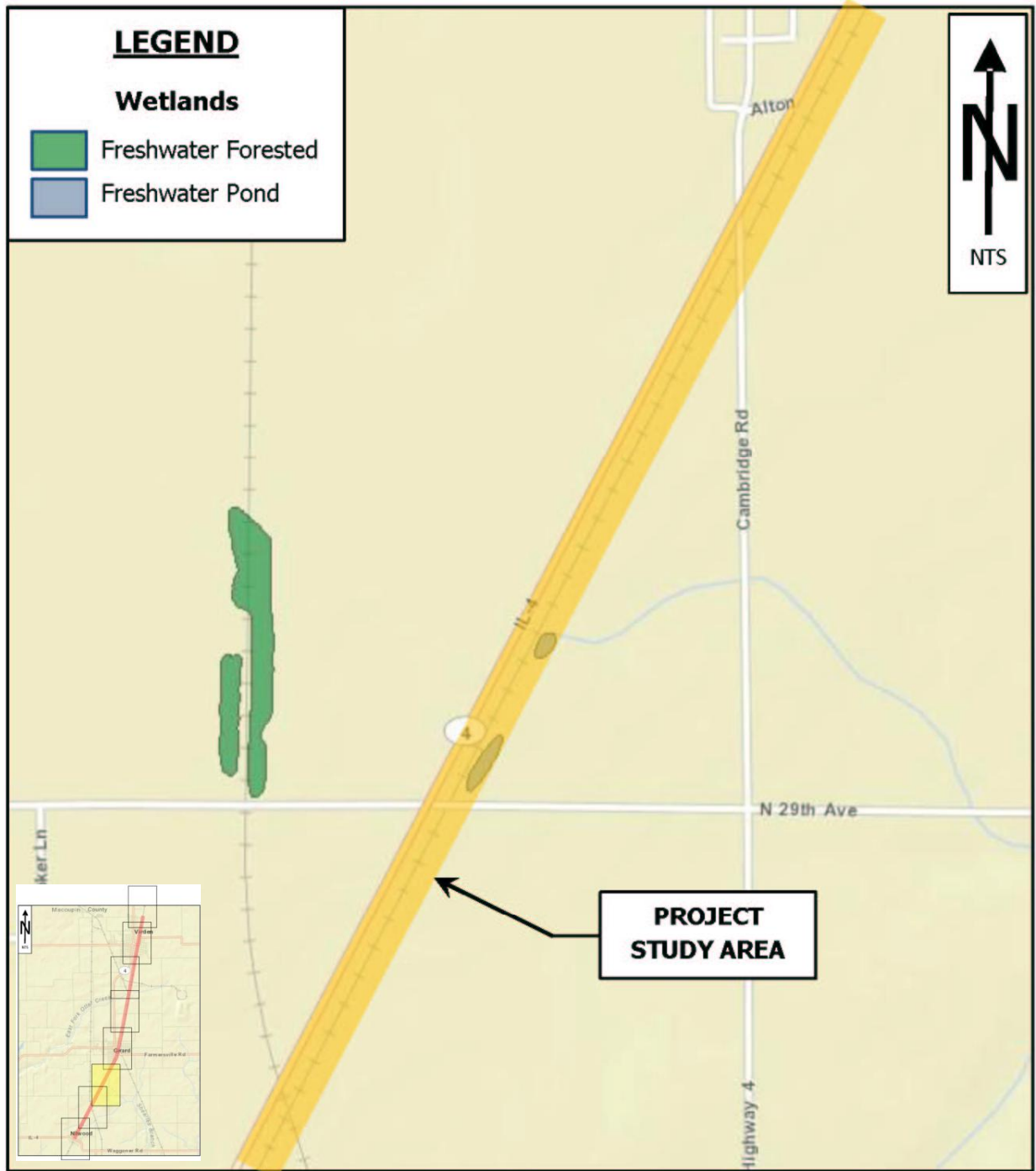


Figure 12 – Environmental Inventory

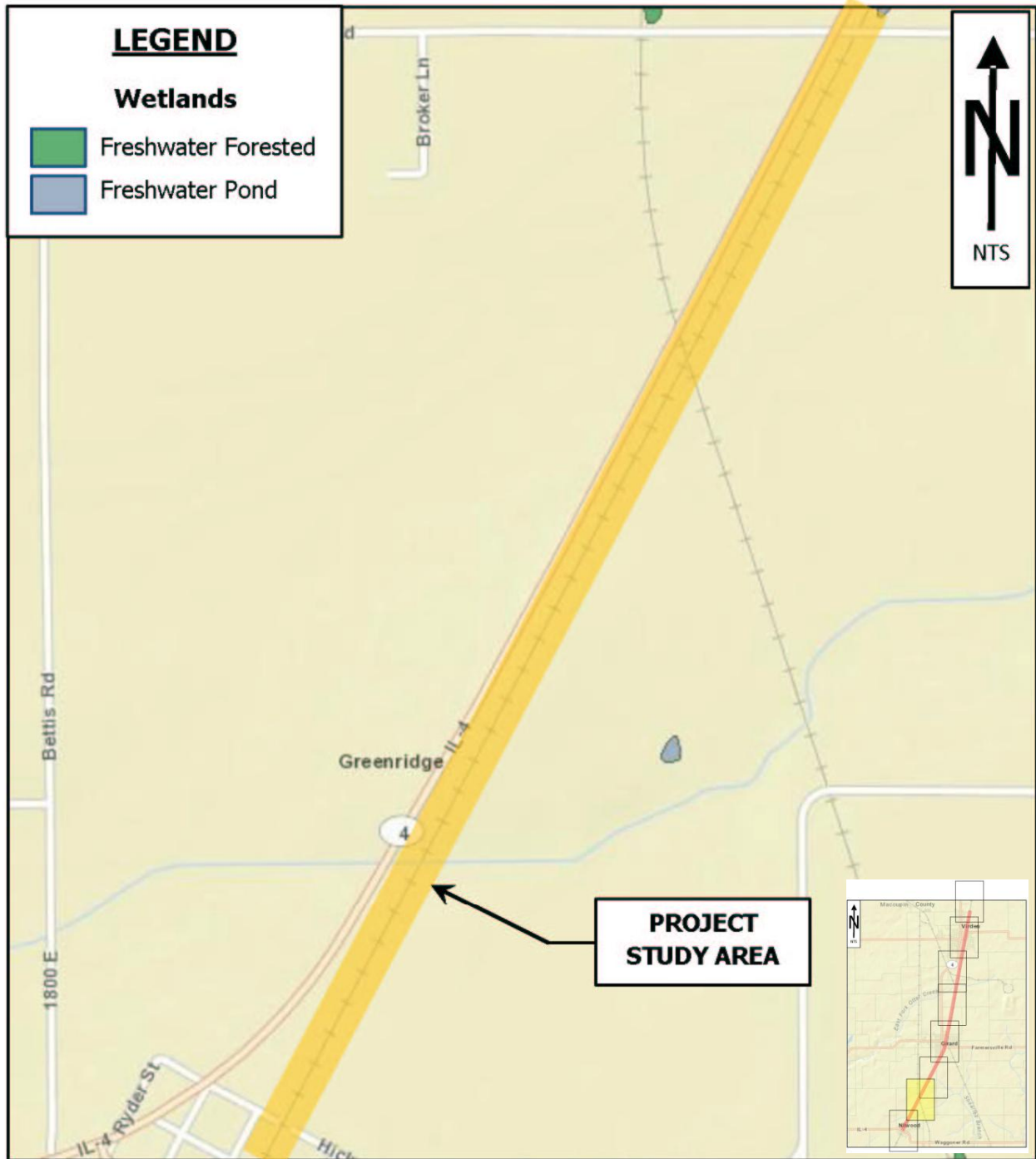
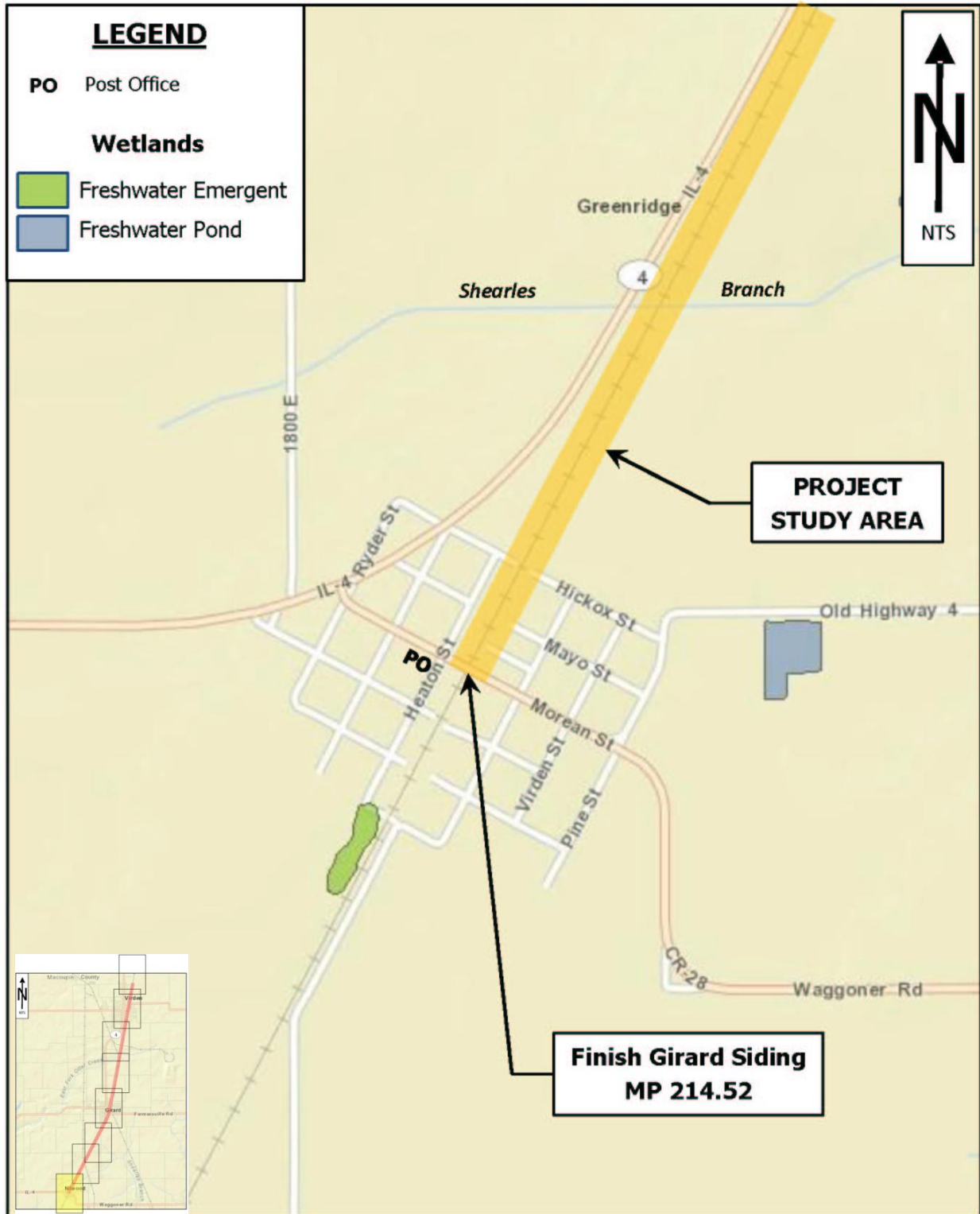


Figure 13 – Environmental Inventory



wetland conditions were assessed throughout the study area and were delineated in the field during field investigations conducted in fall 2011. The wetland delineations associated with these locations are contained herein as these are locations with a high potential for right-of-way acquisition and/or work within WOUS. Improvements within the remaining areas of the corridor and not anticipated to include work outside the right-of-way or in areas not already disturbed were evaluated through screening only.

Four types of wetland plant communities were identified in the Project corridor. These include open water, emergent, shrub, and forested. Open water habitats include Waters of the US (WOUS). Emergent wetlands were generally herbaceous dominated wetlands in depression areas or along the banks of the creek. The shrub and forested wetlands are primarily along the banks of dry-bed creeks. The shrub and forested wetlands are primarily along the banks of creeks. Forested wetlands are dominated by trees and include depression and riparian areas. Refer to Section 3.2.2 for surface water information, including intermittent streams located within the Project boundary limits for the siding. Refer to *Table 3* for wetlands that would be impacted by the Build Alternative.

None of the wetlands found within the Project study area are considered to be High Quality Aquatic Resources (HQAR). Macoupin County has not adopted the USEPA Advanced Identification (ADID) program, which inventories high quality areas. Therefore, no ADID wetlands are located within the Project limits or within the entire county.

There were no areas within the Project limits that met the criteria for farmed wetlands as defined by the Food Securities Act of 1985 (Title 16 U.S.C. Sections 3801-3862).

3.2.1.2 Potential Impacts

The assessment of potential wetland impacts is based upon direct and indirect impacts related to the construction of the Build Alternative which includes areas within the proposed right-of-way and environmental survey limits. Construction would include placement of fill for new bridge abutments or piers and embankment for new track adjacent to the existing tracks. Wetland impacts related to construction would include vegetation removal, placement of clean fill, and changes to the wetland hydrologic regime. Besides the loss of wetland acreage, some wetland functions and values could be affected by the proposed Project. Approximately 10.36 acres of wetlands would be impacted by the Build Alternative. *Table 3* shows anticipated wetland impacts from the proposed improvements. Impacts are assumed to occur only in areas where known additional ROW may be necessary. Under the implementing regulations of the Illinois Interagency Wetland Policy Act of 1989 (IWPA), impacts to wetlands having a Floristic Quality Index (FQI) rating of 20 or greater require 5.5 to 1.0 mitigation ratios. There are no high quality wetlands within the Project study area and therefore no high quality wetlands would be impacted by the Build Alternative. An FQI score below 10 suggests a site of poor natural quality; below five, a highly disturbed site of very poor natural quality. Conversely an FQI value of between 10 and 20 suggest a site of fair natural quality and an FQI of 20 or more suggests that a site has evidence of native character and may be considered an environmental asset. As indicated in *Table 3*, the FQI ratings for all but one of the wetlands were below 6; with one wetland rated a 9. Refer to *Appendix C* for the Wetland Delineation Report. Note on

Wetland Delineation Report, the report includes areas beyond the scope of this EA and is a reference for additional HSR projects.

Recognizing the conceptual engineering detail of the Project, further efforts will be made in future phases of work to avoid and minimize additional wetland impacts. Avoidance and minimization can be accomplished by narrowing the railroad cross-section with the use of retaining walls, steeper embankments, and bridging critical wetland resources. Avoiding and minimizing impacts to wetland resources may be constrained by other critical resources or local issues. Objectives for mitigation will be established in consultation with regulatory and resource agencies.

The wetland sites and WOUS come under jurisdiction of the St. Louis District of the USACE. The northern two miles of the 8.77 mile study corridor falls within the USACE Rock Island District. This includes, but is not limited to the Section 404 permit from the USACE, Section 401 Water Quality Certification from the Illinois Environmental Protection Agency (IEPA), or other permits that may be required. Prior to construction and as part of the wetland permitting process, the UPRR will coordinate with IDOT and USACE to secure the necessary wetland permits and mitigation as required for the Section 404 Permit and in compliance with the Interagency Wetland Policy Act of 1989.

The 2004 ROD states that all practical measures to minimize wetland impacts will be taken. The ROD further states that compensation for wetland impacts will be provided through purchase of credits in an approved wetland mitigation bank. If an approved wetland mitigation bank is not available at the time of permitting, then mitigation will occur by conversion of non-wetland areas into wetlands. Monitoring will occur for wetlands great than 0.25 acres and will be monitored according to IDOT's Wetland Action Plan and any conditions stipulated by the USACE.

Table 3 – Impacted Wetlands and their Characteristics

Wetland Number	MP (Approx.)	Side of RR	Wetland ID	Wetland Sampling Points	Cowardin Classification ¹	Size Acres ²	Acres Impacted ³	FOA ⁴		Figure Reference	Wetland Report Pg. #
								Mean C	FQI		
1	205.9	E	KS_47A	KS40	PFO1A/PEMA	0.138	0.04	2.00	2.83	Girard Siding (Fig. 2A & 2B)	149
2	208.0	W	KR_43	18-CT, 19-CT, 20-CT, KR36	PEMC	2.113	1.31	3.00	4.00	Girard Siding (Fig. 2D & 2E)	152
3	208.0	E	KS_45	KS38	PFO/PEMC	0.716	0.54	2.25	4.50	Girard Siding (Fig. 2D & 2E)	152
4	208.5	E	KS_44	KS37	PEMA	0.014	0.001	0.00	0.00	Girard Siding (Fig. 2E)	153
5	208.5	E	MP-4	KS37, MP7	PEMC	0.044	0.06	2.67	4.62	Girard Siding (Fig. 2E)	153
6	208.8	E	KR_42	KR35	PF1A/PFOC/PUB	2.969	1.11	1.00	1.41	Girard Siding (Fig. 2F)	154
7	209.0	E	KR_41	KR34	PEMA	0.034	0.04	0.00	0.00	Girard Siding (Fig. 2F)	154
8	209.6	E	KR_33	KR26, KR27, MP7	PEMA/PEMC	1.308	0.82	0.00	0.00	Girard Siding (Fig. 2G & 2H)	155
9	209.6	W	KR_34	KR27	PEMA/PEMC	0.048	0.01	3.00	4.24	Girard Siding (Fig. 2G)	155
10	210.0	W	KR_36	KR29	PFO1A/PSSA/PEMA	0.988	1.25*	1.00	1.41	Girard Siding (Fig. 2G & 2H)	155
11	210.0	W	KR_37	KR30	PFO1A	0.196	0.18*	1.67	2.89	Girard Siding (Fig. 2H)	156
12	210.0	W	KR_30	KR23	PFO1A/PEMA	0.041	0.05	1.67	2.89	Girard Siding (Fig. 2H)	156
13	211.0	E	KR_31	KR24	PEMA	1.197	0.06	4.00	4.00	Girard Siding (Fig. 2I)	157
14	211.0	W	KR_26	KR19	PFO1A/PFOC/PEMF	1.217	1.00	0.00	0.00	Girard Siding (Fig. 2I & 2J)	157
15	212.0	W	KR_16	KR9	PFO1A/PEMA	0.968	0.96	0.00	0.00	Girard Siding (Fig. 2J & 2K)	158
16	213.0	W	KR_15	KR8, NVM46	PFO1A/PEMC	1.888	1.89*	2.60	5.81	Girard Siding (Fig. 2K & 2L)	159
17	213.0	W	KR_24	KR17	PEMC/PEMA	1.225	0.11*	2.33	4.04	Girard Siding (Fig. 2K & 2L)	159
18	213.3	W	KR_12	KR5	PFO1A/PEMA	0.342	0.39*	4.50	9.00	Girard Siding (Fig. 2L)	160
19	213.5	W	KR_11	KR4	PFO1A/PEMA	0.108	0.12*	2.75	5.50	Girard Siding (Fig. 2L)	160
20	214.0	W	KR_7	KR1	PFO1A/PEMC	0.378	0.42*	1.80	4.02	Girard Siding (Fig. 2M)	161
TOTAL ACRES						15.93	10.36				

¹ PEMA = Palustrine Emergent Temporarily Flooded

PEMF = Palustrine Emergent Semi-permanently Flooded

PSSC = Palustrine Scrub Shrub Seasonally Flooded

PFOC = Palustrine Forested Seasonally Flooded

PUB = Palustrine Unconsolidated Bottom

PEMC = Palustrine Emergent Seasonally Flooded

PSSA = Palustrine Scrub Shrub Temporarily Flooded

PFOA = Palustrine Forested Temporarily Flooded

PFO1A = Palustrine Forested Broad-Leaved Deciduous Temporarily Flooded

² Acreage within Project area, some wetlands continue beyond the Project boundary limits

³ Source for impacted acreage calculations are preliminary design drawings not the wetland delineation report (Olsson, 2012)

⁴ FOA reported values include the mean coefficient of conservatism (Mean C) and the Floristic Quality Index (FQI)

* Preliminary design drawings assigned larger impact acreage than the wetland report delineation size; and in the case of KR_15 and KR_24, the two wetlands were identified as one impacted wetland in the preliminary design drawings.

3.2.2 Water Quality and Water Resources

This subsection provides an overview of surface and groundwater resources and the water quality of those resources along the Project corridor. It focuses on resources with the potential to be affected by the Build Alternative.

3.2.2.1 Existing Conditions

Surface Water Resources

The Project study area lies predominately within the Macoupin Creek watershed, a drainage area of 961 square miles. Macoupin Creek is a tributary of the Illinois River and its confluence is located near Hardin, Illinois in Greene County. The watershed encompasses portions of four counties and Macoupin County composes 61 percent of the watershed. The Project study area crosses or parallels one (1) intermittent unnamed tributary of Brush Creek and five (5) intermittent unnamed tributaries of Otter Creek, that is, in turn, a tributary of Macoupin Creek. The intermittent unnamed tributary of Brush Creek is located in Virden near MP 207. Four of the intermittent unnamed tributaries are located between MP 207.50 and MP 210, and the fifth is in Girard near MP 211. The northern two miles of the study corridor fall within the Sangamon River watershed, however, it does not cross any tributaries from this watershed.

Section 303(d) of the Clean Water Act requires states to identify waters that do not meet applicable water quality standards and submit a list of impaired waters to the USEPA for review and approval. The Project study area lies in a portion of the Macoupin Creek watershed that does not contain 303(d) listed waters, as set forth in the federal Clean Water Act and the Water Quality Planning and Management regulation in 40 CFR Part 130.

None of the streams are Class I streams or National Wild and Scenic Rivers. They are not listed as Biologically Significant Streams, nor have they received an integrity rating.

Groundwater Resources

Groundwater quality is dependent in large part on the physical and chemical composition of overlying geologic materials. The risk for groundwater contamination through the corridor is low to moderate except where the corridor crosses alluvial deposits. In such alluvial formations the potential for groundwater contamination is rated as high (Berg, Kempton, and Cartwright, 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. Within the study area, there are no principal shallow sand-and-gravel aquifers. There are no sole source aquifers in Illinois. 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 no well or boring locations within 200 feet of the Project study limits.

3.2.2.2 *Potential Impacts*

Surface Water Resources

The No-Build Alternative would not impact waterways or water quality since there would be no change from existing conditions. The Build Alternative will result in minor impacts to waterways and water quality resulting from culvert replacement and modifications. Minor impact would occur from in-stream bank work and construction activity. A small amount of stream substrate may be permanently removed to accommodate the culvert replacements at four intermittent stream locations in the study area. Impact minimization is provided through the use and enforcement of Erosion and Sediment Control Policy, and National Pollutant Discharge Elimination System (NPDES) permits, that employ Best Management Practices (BMPs) (e.g. silt fences, check dams, and appropriately sized sediment basins). Permanent BMPs installed following construction (e.g. permanent seeding and use of native vegetation) would further reduce impacts.

Groundwater Resources

The No-Build Alternative and the Build Alternative would not have any impact on groundwater resources, such as existing wells or borings. The HSR trains will not transport any freight that may be a potential contaminant of groundwater resources with the exception of the on-board fuel and other petroleum based products. The UPRR has an established Spill Prevention, Control, and Countermeasure Plan to address any potential spill from a locomotive.

3.2.3 Threatened and Endangered Species

The U.S. Endangered Species Act of 1973, as amended, provides protection for species that are listed as threatened or endangered under this act.

3.2.3.1 *Existing Conditions*

Threatened and endangered species potentially occurring in the Project corridor were identified from information supplied by the Illinois Department of Natural Resources (IDNR, 2011) and the USFWS Section 7 Consultation (USFWS, 2011). 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.

Two federal threatened or endangered species are found in Macoupin County. The Indiana bat (*Myotis sodalis*) is an endangered species and the eastern prairie fringed orchid (*Platanthera leucophaea*) is a threatened species. The habitat for the Indiana bat is caves, mines (hibernacula), small stream corridors with well-developed riparian trees/woods, and upland forests (foraging). Summer habitat includes woodlands, especially riparian areas with mature, dead trees with exfoliated bark. Roosting sites may be used by pregnant and lactating bats, which frequently utilize tree cavities and loose bark on living trees. The habitat for the eastern prairie fringed orchid is moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairies.

Neither species has habitat found within the Project limits based on the field survey of the proposed Project site conducted in May 2012.

Using the IDNR's Ecological Compliance Assessment Tool (EcoCAT), a review of the Illinois Natural Heritage Database identified the potential for the following Illinois threatened or endangered plant and animal species in the Project study area:

- Plants – Nieuwland's blazing star (*Liatris scariosa var. nieuwlandii*); bunchflower (*Melanthium virginicum*); large ground plum (*Astragalus crassicaarpus var. trichocalyx*); and ear-leafed foxglove (*Tomanthera auriculata*).
- Animals – Franklin's ground squirrel (*Spermophilus franklinii*)

The habitat found within the Project limits includes developed land, agricultural land, pastureland, grasslands, forested land and open fields. A field survey conducted in May 2012 determined that no suitable potential habitats were found for the federal or state listed threatened or endangered species. Suitable habitat is an area that is capable of providing individuals or populations of a species with food, shelter, protection (from human and animal predators), breeding sites, and sites for nesting and rearing young. To be suitable habitat, it may have to contain certain types of geological features, particular types of water bodies, particular types of trees or plants or other species of wildlife. *Table 4* summarizes federal and state endangered and threatened species in Macoupin County, their habitats, and their occurrence within the Project limits.

Table 4 – Federal and State Threatened and Endangered Species

Name	Species	Designation	Habitat	Presence/Available Habitat in Study Area
Indiana bat	<i>Myotis sodalis</i>	Federal Endangered Animal Species	Caves, mines, small stream corridors, riparian woods/trees, upland forests	Not found within project limits for Girard Siding
Franklin's ground squirrel	<i>Spermophilus franklinii</i>	State Threatened Animal Species	Grasslands, shrublands and woodlands	No evidence of burrows or squirrel activity
eastern prairie fringed orchid	<i>Platanthaera leucophaea</i>	Federal Threatened Plant Species	Mesic prairie, wetlands, sedge meadows, edges of marshes	Not found in surveyed areas
Nieuwland's blazing star	<i>Liatris scariosa var. nieuwlandii</i>	State Threatened Plant Species	Prairies, savannas, woodland edges	Not found in surveyed areas
bunchflower	<i>Melanthium virginicum</i>	State Threatened Plant Species	Wet, mesic prairieland	Not found in surveyed area
large ground plum	<i>Astragalus crassicaarpus var. trichocalyx</i>	State Endangered Plant Species	Dry rocky prairies, gravel prairies, open woods, bluff tops	Not found in surveyed area
ear-leafed foxglove	<i>Tomanthera auriculata</i>	State Threatened Plant Species	Dry to moist prairies in open uplands and woods	Not found in surveyed area

Sources: Illinois Department of Natural Resources (IDNR) and Illinois Nature Preserves Commission (INPC).

A review of the IDNR's corridor wide natural resource assessment from September 2011, for the entire HSR corridor from Chicago to St. Louis indicated that there were no state listed threatened or endangered species occurring within the Project study area for this EA.

Remnant Railroad Prairie Species

Two prairies were identified during a field survey of the proposed Project site in May 2012. The first prairie is located between Nilwood and Girard, between MP 211.91 and 213.66. This degraded prairie is 1.5 miles in length, occurring between Illinois Route 4 and UPRR right-of-way. This prairie remnant overlaps south into areas identified as hedgerow cover type, where it tapers out. The prairie had been mowed in the IDOT right-of-way making species identification and quantification difficult. The prairie is assigned a C grade (Site 2, Handel 2012), as referenced in the field survey report found in *Appendix D*.

The natural quality grading system of Illinois prairies dates back to the Illinois Natural Areas Inventory and was developed by White (1978). The grading system is a measure of the degree of disturbance to soils and vegetation. There are five classifications, A through E. They are defined as follows in White, 1978:

- Grade A: Natural Prairie – Species composition is natural or nearly so, with a full diversity of forbs and without an overabundance of weedy species. Soil is undisturbed by earthmoving; or it may have been lightly disturbed but the vegetation appears natural.
- Grade B: Disturbed Prairie – Species composition is altered from the original natural condition. Some characteristic prairie plants are absent; others are overly abundant. There may be patches of native weeds and many exotic species. Soil is typically light graded or otherwise disturbed.
- Grade C: Degraded Prairie – Species composition is unnatural. There may be only scattered clumps and irregular, discontinuous patches of grass, with a dominance of weedy vegetation.
- Grade D: Occasional prairie plants grow on soil that is either disturbed or undisturbed.
- Grade E: Prairie plants are essentially absent because of disturbance.

Grade A and B are considered high quality prairie. Grade C is degraded and Grades D and E are low/no quality. Subsequent to the INAI, refinement of the grading system have added a + or – modifier to the grade, similar to the method used for designation of the wetland indicator status for plant species. A discussion of the methodology and application of the grading system for the HSR is on p. 2-94 of the DEIS, with more detail in the Native Prairie Technical Report (March 1999, Federal Highway Administration and Illinois Department of Transportation) – particularly page 2. As stated in the FEIS, the criterion used in determining whether prairie remnants with impact would have design and construction actions to maximize avoidance, impact minimization measures and compensatory mitigation applied was a grade of C+ or higher.

The second prairie is located at a utility substation at Crown 2 Mine Road in Virden. The prairie remnant at this location is highly degraded and would most likely be assigned a D rating. The area is 225 feet long and 25 feet wide. Species identified include big bluestem, foxtail, and fescue. This remnant was not identified the field survey report.

Small isolated prairie remnants containing endangered or threatened species may persist along the railroad right-of-way, though exhaustive surveys were not conducted throughout the Project corridor. An INHS botanical survey identified four prairie remnants along the UPRR ROW from just south of Girard to just north of Nilwood. The remnants were categorized as low quality, with three categorized as Class 3 and one as Class 2/3. Class 3 includes Grade C- to D native plant community; disturbances include those of Class 2 together with extensive soil disturbance (e.g., scraping); and in the 2/3 class, greater than 50 percent cover of native species including some conservative taxa. Class 3 sites are prairies with less than 50 percent cover of native species and few or no conservative species. The right-of-way and adjacent edge has been significantly disturbed for over a century by railroad construction and maintenance in most places. Sensitive prairie remnant habitats are being evaluated for this Project in coordination with IDNR as environmental studies will continue as engineering plans are developed during final design stages.

3.2.3.2 Potential Impacts

The No-Build Alternative would not impact threatened or endangered species since there would be no change from existing conditions.

The location of the Girard Siding did not contain the habitat or activity evidence of federal or state listed threatened or endangered species, therefore the Build Alternative would not impact federal or state threatened or endangered animal or plant species. At MP 209, woodland habitat will be removed in an area of open water surrounded by mature floodplain forest with mature trees. Remnant prairies have the potential to be impacted but are considered low quality prairies and would not require replacement as a mitigation measure.

The IDOT biological resource review, dated December 2012, determined that there would be no additional impacts to biological resources including threatened or endangered species. See *Appendix B* Coordination and Consultation for the determination letter.

In a March 14, 2013 letter (found in *Appendix B*), the USFWS determined that the trees proposed for removal are found at the edges of forested areas and are located along the edges of railroad tracks which are a part of an existing linear transportation corridor. Further, the USFWS stated that large areas of potential suitable forested habitat for the Indiana bat remain in the greater project vicinity and will not be impacted by this Project (the Build Alternative). The USFWS findings state that the Project (Build Alternative) is not likely to adversely affect the Indiana bat (*Myotis sodalis*). The letter discusses the entire area from Auburn to Shipman, Illinois, MP 203 to MP 230, and includes the Project study area for the Build Alternative. See *Appendix B* Coordination and Consultation for the USFWS letter.

Mitigation

Per Council on Environmental Quality (CEQ) policy, restoring and enhancing environmental quality is proposed for all impact areas (40 CFR 1500.2, 1502.14, and 1502.16). All disturbed areas not occupied by Project facilities will be immediately revegetated and mulched to stabilize disturbed soils, minimize erosion, and enhance the productivity and aesthetics.

As part of the 2004 ROD, prairie mitigation will occur for sites with a quality of C+ or higher. As such, the prairies and prairie remnants within the Project area do not meet that minimum classification. However, the Project will minimize temporary impacts to prairies during construction, staging and access to the Project site. Where avoidance is not possible, the area of disturbance (direct and indirect, temporary and permanent) will be minimized through the use of BMPs, such as exclusionary fencing.

The USFWS letter dated March 14, 2013 requested that survey crews are to flag construction limits and environmental scientist will review for potential habitat and mark trees for removal prior to April 1, 2013. An environmental scientist will be present during tree removal to document the size, type, and habitat quality of trees removed. As stated in the letter, a tree replacement plan will be implemented.

3.2.4 Special Lands

A review of the Illinois Natural Heritage Database was conducted to determine if any Illinois Natural Areas Inventory (INAI) sites, Illinois Nature Preserves, or Illinois Nature Preserves Commission (INPC) protected lands are located within the Project study area. The review indicated that there are no INAI sites, Illinois Nature Preserves, or INPC protected lands within the Project study area.

The No-Build Alternative would not impact special lands since there would be no change from existing conditions. Since there are no INAI or INPC sites, the Build Alternative would not impact special lands.

3.2.5 Section 4(f) Properties

Section 4(f) properties include publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places (NRHP).

3.2.5.1 Existing Conditions

An inventory of Section 4(f) properties within 1,000 feet of the Project study corridor was conducted. There are two parks near the Project study area which are under the jurisdiction of the City of Virden Park Board: Town Square Park and an unnamed park. Town Square Park is located approximately 350 feet west of the Project, bounded by S. Dye, E. Jackson, S. Masterson, and E. Dean Streets. The unnamed park is approximately 1,000 feet west of the Project, bounded

by N. Hobson, W. Waverly, N. Blair, and W. Prairie Streets. Route 66, which is listed on the NRHP, is the only historic resource in the Project area

3.2.5.2 Potential Impacts

The No-Build Alternative would not affect Section 4(f) resources.

The No-Build Alternative will not affect the two parks since the parks are outside the limits of project construction. The Build Alternative intersects Historic Route 66 at Morean Street in Nilwood and at Cambridge Road in Girard. However in an IDOT letter dated 13 February 2013, with concurrence from the Illinois State Historic Preservation Office (SHPO) dated 19 February 2013, IDOT stated that “no Historic Properties subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, will be affected by this project”. A separate road improvement project at the same intersections is mentioned in the same letter as having an adverse effect on the historic property; however that project is not within the proposed work or scope of this EA and will be addressed in a separate report.

3.2.6 Aesthetic Environment and Scenic Resources

This section identifies any significant changes likely to occur in the natural landscape and in the developed environment. The section also includes the consideration given to design quality, art, and architecture in project planning and development.

3.2.6.1 Existing Conditions

The proposed Girard Siding is located parallel to the existing mainline track and in an area of developed land use with some agricultural land use and grassland habitat. There are no forested areas within the proposed siding location, although there are trees located throughout the Project area. There are no historic properties within the viewshed of the Project area with the exception of at-grade crossings with Historic Route 66.

3.2.6.2 Potential Impacts

The No-Build Alternative would not have any impacts on aesthetic or scenic resources, as the conditions would not change from the existing views.

Under the Build Alternative, there will be some impacts to visual resources as there will be tree removals. Also, temporary easements would need to be obtained by UPRR for construction access and to stage materials; however, these easements will not require the relocation of residences, or permanently impact scenic resources. As discussed further in the Cultural Resources section, the State Historic Preservation Office (SHPO) has determined that the Historic Route 66 will not be adversely affected by the Build Alternative. Refer to Section 3.3.9 Cultural Resources for additional information on Route 66.

3.3 Human Environment

The purpose of this section is to describe the characteristics of the Human Environment within the area that is to be served or affected by the proposed Project. Included in this section is a discussion of the anticipated transportation, socioeconomic, environmental justice, barriers to the elderly and disabled, public health and safety, hazardous materials, and cultural resource effects of the Build Alternative. Where appropriate, mitigation measures are identified.

3.3.1 Transportation

This section summarizes the transportation impacts expected under the No-Build and Build Alternatives.

3.3.1.1 Existing Conditions

Under the current schedules, there are about 15 trains per day operating over this section of line, including five daily round-trip Amtrak passenger trains and five UPRR freights (a combination of local and through trains). There are 12 at-grade rail/roadway crossings within the Project study area: Nilwood (1), Girard (4), Virden (3), and rural Macoupin County (4). Two of the at-grade crossings are part of historic Route 66. Illinois Route 4 runs parallel to the UPRR alignment.

3.3.1.2 Potential Impacts

There are no proposed changes in the number of Amtrak trains in the study area. There are no new stations proposed in this section of the route. Under the Build Alternative it has been projected that there will be an increase in ridership over time as a direct result of infrastructure improvements, including this siding Project, that will increase HSR passenger rail viability as presented previously in Section 1.0 Purpose and Need for Action.

Projected freight operations will increase with construction of new intermodal facilities proposed in Joliet and Alton. The cities of Joliet and Alton are not in the Project area included in the EA and although they are removed by a great distance from the Girard Siding, they have an influence on the volume of freight traffic experienced in the Project area. Rail operations would be affected without siding tracks in this portion of the route to allow through movement, affecting freight and passenger rail.

The Project would result in temporary impacts to vehicular operations during construction of the additional siding track, replacement/construction of the mainline track and at-grade roadway crossovers, and the installation of the new four-quadrant gates with vehicle detection equipment at roadway crossings. In some cases, temporary diversion of traffic to adjacent crossings could be required. Minor and temporary impacts to vehicular traffic could affect emergency services, schools, businesses, and other local activities requiring vehicular access, but only on a short term basis during Project construction.

The Project would result in improvements to on-time rail performance on the existing route and provide for shorter trip times; thus, the Project would have a beneficial effect on other railway operations. Temporary delays during construction would be experienced, affecting operating speeds in construction zones and affecting schedules due to the necessity of temporary track shutdowns.

The proposal has no additional permanent impacts to vehicular traffic or parking and there are no changes to access. There are no additional grade crossing closures subject to this re-evaluation. The identification and process by which grade crossing closures will occur associated with the alignment have been previously cleared in the Grade Crossing Closure and Enhancement CE signed on October 18, 2011. There are 12 grade crossings within the limits of this proposal that will require temporary closings. Since there are no changes to access and no grade crossing closures, there are no impacts to bicyclists or pedestrians. The Project is expected to have a positive impact on bicycle and pedestrian transportation through design improvements at the at-grade crossings that will accommodate crossing pedestrians and bicycles. Design elements include the dimensions, flatness, height, surface, and flangeway design (depth and width) of the crossing and also the crossing angle. Fencing installed in the municipalities of Nilwood, Girard and Virden will channel pedestrians to access locations at cross roads where crossings incorporate design features specifically considering pedestrian movement. These design improvements also have safety benefits, as discussed in Section 3.3.6.

3.3.2 Land Use

3.3.2.1 Existing Conditions

Macoupin County is designated a non-metropolitan area and is primarily rural. IDOT coordinates transportation planning activities with local agencies in Macoupin County. The Illinois State Transportation Plan was completed in December 2012.

The Macoupin County Multi-Hazard Mitigation Plan (November 2010) addresses long-term risk reduction/elimination to human life and property from hazards in adherence to FEMA goals and objectives pursuant to requirements of the Federal Disaster Mitigation Act of 2000 (DMA 2000). Macoupin County has no land use plan and has no zoning in non-urban areas. The City of Carlinville addresses land use within its zoning ordinance. There is no zoning or comprehensive land use plan for Virden, Girard, and Nilwood.

3.3.2.2 Potential Impacts

The No-Build Alternative would not impact land use as there would be no change in the existing land use designations.

The Build Alternative will impact land use with the acquisition of approximately 37.2 acres of additional ROW. The land use categories and percentages for the proposed additional ROW are as follows:

- Grassland: 25%
- Agricultural Land: 23%

- Hedgerow: 20%
- Shrubland: 17%
- Developed Land (Urban): 11%
- Forested Land: 4%

Displacements

No displacements of residences or businesses are anticipated as a result of the Build Alternative. Three structures are identified on preliminary plans as potentially being displaced and may require relocation: a grain elevator and a dilapidated barn-like structure at (MP 210.67) and a wooden shed (MP 214.31). Construction would require temporary road closures. Temporary easements or purchase of right-of-way needed for construction access and to stage materials staging by the UPRR would not require the relocation of businesses or residences. Right-of-way purchases will be conducted following the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Uniform Relocation Act) (Title 42 USC Sections 4601-4655), as amended. 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 businesses. IDOT will implement the provisions of the State of Illinois Relocation Assistance Plan in accordance with the Uniform Relocation Act.

Community Services and Facilities

Schools, medical centers, and fire and police stations serve the daily needs of residents near the three municipal areas of Virden, Girard, and Nilwood in the Project corridor for the Build Alternative. Streets in each of these incorporated areas in the Project study area provide access to and from educational and medical facilities and play a critical role in providing these services, and in serving the health, safety, and general welfare of those who use them. As mentioned in Section 3.2.5, there are two parks near the Project study area which are under the jurisdiction of the City of Virden Park Board: Town Square Park and an unnamed park. Town Square Park is located approximately 350 feet west of the proposed siding location. The unnamed park is approximately 1,000 feet west of the proposed siding location. Because there will be no alteration to the existing street grid, except for short-term temporary closures during construction, impacts to these services and facilities will be minimal. In some cases, temporary diversion of traffic to adjacent crossings could be required, causing minor affects to emergency services, schools, businesses, and other local activities requiring vehicular access.

3.3.3 Demographics

3.3.3.1 Existing Conditions

Macoupin County is primarily agricultural, with a 2010 population density of 55.4 persons per square mile. The population from 2000 to 2010 declined by over six percent from 49,019 to 47,765 for Macoupin County. The City of Virden declined by 1.8 percent, the City of Girard declined by 6.3 percent, and the Village of Nilwood declined by 15.8 percent, all far below the Illinois statewide increase of 3.3 percent, as shown in *Table 5*.

Table 5 – Population and Households 2000 and 2010 Census

Community	Population			Households		
	2000 Census	2010 Census	Percent Change (2000-2010)	2000 Census	2010 Census	Percent Change (2000-2010)
State of Illinois	12,419,293	12,830,632	3.3	4,591,779	4,836,972	5.3
Macoupin County	49,019	47,765	-2.6	19,253	19,371	6.1
City of Virden	3,488	3,425	-1.8	1,455	1,442	-0.9
City of Girard	2,245	2,103	-6.3	864	856	-0.3
Village of Nilwood	284	239	-15.8	107	93	-13.1

Source: Census 2000 and Census 2010

The number of households in Illinois increased 5.3 percent during the same ten years. The percentage change in Macoupin County households was 6.1 percent, however, the municipalities in the Project study area remained essentially unchanged or decreased: City of Virden (-0.9%), City of Girard (-0.3%), and Village of Nilwood (-13.1%).

Racial and Ethnic Composition

Table 6 shows that minority populations in Macoupin County are not concentrated in the cities or village within the Project study area. Approximately 2.5 percent of the combined population of Virden, Girard, and Nilwood are minorities.

Table 6 – Population by Race and Ethnicity 2010

Community	White	Black/ African American	Am. Indian and Alaska Native	Asian	Pacific Islander	Other	Two or More Races	Hispanic or Latino (of any race)
State of Illinois	9,177,877	1,866,414	43,963	586,934	4,050	861,412	289,982	2,027,578
Macoupin County	46,596	359	126	129	11	118	426	418
City of Virden	3,375	5	2	19	0	4	20	27
City of Girard	2,068	3	7	5	0	3	17	27
Village of Nilwood	232	2	0	0	1	0	4	3

Source: Census 2010 and community profile websites for each city and township.

3.3.3.2 *Potential Impacts*

The No-Build Alternative would not impact demographics for the Project area as it is assumed the current demographic numbers and composition would remain unchanged.

Under the Build Alternative, no impacts to demographics would occur as there are no displacements of homes or businesses as a result of the Project. Therefore there are no disproportionate impacts to minority groups either as a result of the Project.

3.3.4 Economics and Employment

3.3.4.1 Existing Conditions

Though Macoupin County is primarily agricultural, farming is not one of the major employers in the county. The top four employers in Macoupin County are in Carlinville: Carlinville Area Hospital, Karmak, Inc., Macoupin County Government, and M&M Farm Service.

Table 7 lists the employment in Macoupin County by industry. The top three industries are educational services, health care and social assistance, retail trade, and manufacturing.

Table 7 – Employment by Major Industry

Industry	Percent in County
Educational Services, Health Care and Social Assistance	25.4
Retail Trade	12.5
Manufacturing	11.4
Construction	8.6
Arts, Entertainment and Recreation	6.5
Professional, Technical Services	6.1
Transportation, Warehousing and Utilities	5.9
Public Administration	5.8
Finance, Insurance, Real Estate and Rental/Leasing	4.9
Agriculture, forestry, fishing, hunting and mining	4.5

Source: U.S. Bureau of the Census: American Fact Finder, 2000

Table 8 shows 1999 (from Census 2000) and 2010 median household incomes for areas along the Project corridor. The percent change in median income is higher in Macoupin County, the cities of Virden and Girard, and the Village of Nilwood than the percent change for the State of Illinois. For municipalities in the Project corridor, median income is lower than the statewide and Macoupin County median household income for 2010.

Table 8 – Median Household Income, 1999 (Census 2000) and 2010 (Estimated)

Community	Median Household Income		
	1999 (2000 Census)	2010 Estimated	Percent Change (1999-2010)
State of Illinois	\$46,635	\$60,254	29.2
Macoupin County	\$36,190	\$47,178	30.4
City of Virden	\$31,905	\$45,460	42.5
City of Girard	\$31,806	\$43,651	37.2
Village of Nilwood	\$32,386	\$45,279	39.8

Source: 2000 and 2010 U.S. Bureau of the Census and Macoupin Economic Development Partnership.

The 2010 Census includes percentages of households below the poverty threshold at state and the municipal track level. The 2010 Census includes 48 possible poverty thresholds that could be assigned to each person or family. For a household with a family of four including two

children the poverty threshold level is \$22,113 for the household income. For a household with a family of two, with no children and the adults are over the age of 65 the poverty threshold level is \$13, 180 for the household income. The following percentages for the population within the Project study area that are below poverty threshold levels are:

- State of Illinois: 13.1%
- Virden: 13.2%
- Girard: 19.0%
- Nilwood: 9.1%

As the percentages indicate, Girard has higher than the state average of households below poverty threshold levels.

3.3.4.2 Potential Impacts

The No-Build Alternative would not impact employers or industries as there would be no change to the existing conditions. The Build Alternative would have no direct impact on industry type or employers in the Project area, as there will be no station proposed as part of the Girard Siding and no businesses will be displaced by the Build Alternative.

However, the Original Project promotes both the short and long-term creation and preservation of jobs while promoting new opportunities during its construction. Millions of dollars will be invested in construction of the 110 mph mainline track, construction of a new siding track, signal improvements, reconfiguration and realignment of intersecting at-grade roadway crossings in the Girard Siding and Track Construction Project. New and expanded business opportunities will be indirectly created by enhancing the capacity and increasing the fluidity of freight rail operations on the UPRR.

3.3.5 Environmental Justice and Title VI

Title VI of the Civil Rights Act of 1964 addresses discrimination issues associated with federally funded projects. No groups or individuals have been or will be excluded from participation in public involvement activities, denied the benefit of the Project, or subjected to discrimination in any way on the basis of race, color, age, sex, national origin, disability, or religion.

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (EO 1994), directs federal agencies to "promote nondiscrimination in federal programs substantially affecting human health and the environment, and provide minority and low-income communities access to public information on, and an opportunity for public participation in matters relating to human health or the environment." The Council on Environmental Quality (CEQ) responded to this order by issuing guidance for agencies on how to address environmental justice under the National Environmental Policy Act (NEPA). The Department of Transportation (DOT) issued an update to Departmental Order 5610.2(a) (Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) (originally published April 15, 1997) on May 2, 2012. The Order updates and clarifies environmental justice procedures for the Department in response to the Memorandum

of Understanding on Environmental Justice signed by heads of Federal agencies on August 4, 2011, DOT's revised environmental justice strategy issued on March 2, 2012, and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994.

The No-Build Alternative would not have disproportionate adverse impacts on minority or low impact populations.

As first mentioned in Section 3.3.3, approximately 2.5 percent of the combined population of Virden, Girard, and Nilwood are minority populations. Of the three municipalities, Girard does have a higher than state average percentage, at 19 percent, of households at or below the poverty level. However, as the Build Alternative would not result in any property acquisitions of residences or businesses or relocations; it therefore would not disproportionately affect minority or low-income residents or populations in the Project study area. The 2003 FEIS listed at-grade crossing closures as the activity associated with the Original Project to have the greatest potential to impact minority or low-income populations. There are no permanent closures proposed for the Build Alternative and therefore would have no disproportionate or adverse impact on minority or low-income populations. Construction related closures of at-grade crossings would occur but are considered temporary and existing vehicular and pedestrian access would be restored after construction has been completed.

3.3.6 Barriers and Accessibility

The No-Build Alternative will perpetuate any existing barriers to mobility for elderly and disabled persons. The Girard Siding Project will have no impact regarding station- and platform-oriented issues related to Americans with Disabilities Act (ADA) accessibility or access for elderly because no stations are proposed. Design features for pedestrians at at-grade crossing improvements in Virden, Girard, and Nilwood, where pedestrians and disabled persons may cross the tracks, will have a positive effect in removing or preventing barriers to their mobility. The pedestrian crossing escape gates are four feet in width (exceeding the recommended 32- to 36-inch width for wheelchair accommodation), thereby assuring adequate room for passage of a wheelchair through the gate.

3.3.7 Public Health and Safety

The No-Build Alternative would not impact public health and safety. Fire, police and medical response time would not be affected.

The Build Alternative would also not impact public health and safety because there would be no permanent change in the existing traffic flow patterns due to the proposed improvements. Minor temporary impact due to construction at grade crossings has been presented previously and has potential impact on emergency response times from delays at crossings and temporary closures. All measures would be taken during the construction phase to coordinate with emergency service providers in order to mitigate any potential impacts due to construction activity conflicts.

Two aspects of the Project will have a positive safety impact: installation of four-quadrant crossing gates (12 at-grade crossings in Nilwood [1], Girard [4], Virden [3], and rural Macoupin County [4]) and installation of fencing along the tracks in the municipalities of Nilwood, Girard, and Virden. The design improvements at the at-grade crossings will have a positive safety impact on pedestrians and bicyclists. Fencing at the edge of roadway crossings without dedicated sidewalks will be extended to the crossing signal preventing pedestrians and bicyclists from circumventing the crossing arm when it is down. Ornamental fencing will have 16-foot double swing gates. In addition, a separate sidewalk crossing gate for pedestrians with a pedestrian crossing escape pad swing gate will be part of the crossing improvements at Jackson St. in Virden, Center and Madison Sts. in Girard and Morean Street in Nilwood. The swing gate alerts pedestrians to the tracks and requires them to pause, thus deterring them from running freely across the tracks without unduly restricting their exit from the right of way. The swing gate requires pedestrians to pull the gate to enter the crossing and push the gate to exit the protected track area; therefore, a pedestrian cannot physically cross the track area without pulling and opening the gate. There are no pedestrian crossing locations other than at the roadway crossings.

3.3.8 Hazardous Materials

Potential hazardous materials affecting the Project study area were evaluated in a Draft Preliminary Environmental Site Assessment (PESA) prepared on December 10, 2012, which included an electronic search of local, state and federal environmental databases, as performed by FirstSearch Technology Corporation (FirstSearch). Results of the database search are incorporated into the findings of the PESA found in *Appendix A*. The databases and search distances were performed in accordance with the U.S. EPA's All Appropriate Inquiries (AAI) regulations and American Society for Testing and Materials (ASTM) E 1527-05 Standard Practice for Environmental Site Assessments. The PESA report conforms to the methods described in the Illinois Department of Transportation (IDOT) Memorandum #04-09, dated July 22, 2004 entitled "*Special Waste Procedures for Local Highway Improvements.*" In addition, the Illinois State Geological Survey (ISGS) Open File Series Publication No 2012-1 entitled "*A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Highway Projects*" is referenced in preparation of the PESA.

3.3.8.1 Existing Conditions

In the PESA, thirty (30) locations were identified as recognized environmental conditions (REC's), and thirty-eight (38) other locations were identified as *de minimis* conditions. The evaluation process included onsite as well as offsite observations, historical records research, interviews with local government officials and review of the regulatory database findings. Some of the identified REC's fall within the UPRR right-of-way. Generally, the areas of concern identified in the PESA fall into the following categories: (1) Historical storage of chemicals or petroleum products on properties in which spills or releases could have occurred; (2) Electrical transformers on adjoining properties that possibly contain polychlorinated biphenyl's (PCB's); (3) Possible presence of Asbestos-Containing Materials (ACM) and/or Lead-Based Paint (LBP); (4) Possible creosote in railroad ties; (5) Potential for application of agricultural chemicals on

farmland prior to development; (6) Close proximity to natural gas pipelines; and (7) Potential impact from database listings. However, of the 30 identified REC's, only four of the sites were due to database concerns.

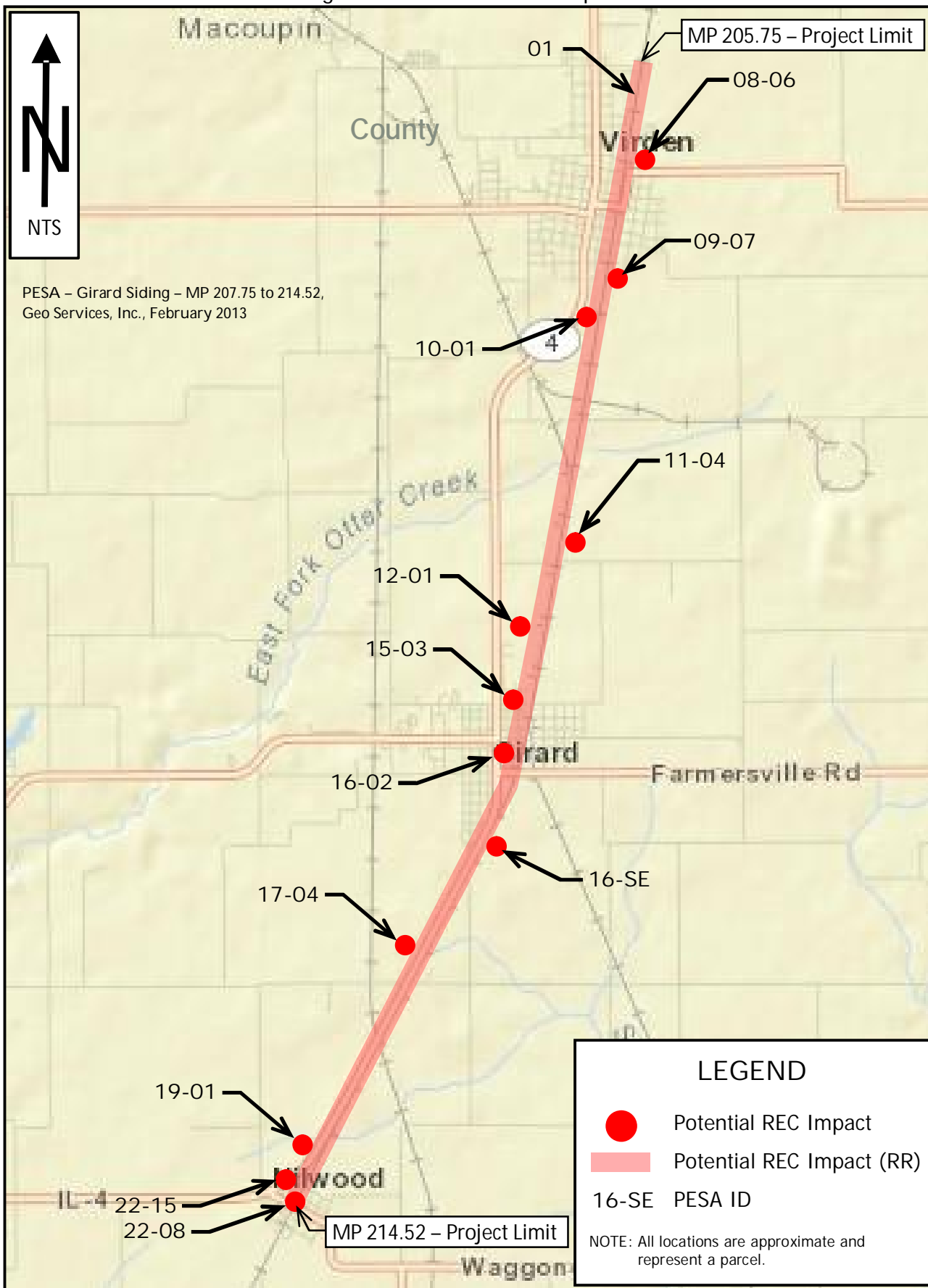
Thirteen of the identified RECs have been determined as impacting upon the proposed ROW or construction easement of planned improvements. A summary of these RECs are found in Table 9. Descriptions of the REC sites listed below correspond with the PESA ID REC sites presented in *Figure 14*:

- PESA ID No. 01 - UPRR Rail Line: Due to long time usage as a rail line, spills or releases of chemicals, petroleum products or hazardous materials could exist; Listing of a documented LUST incident; possible presence of LBP and ACM on the signal/switchboxes and on other structures built prior to 1979.
- PESA ID No. 08-06: The presence of several large ASTs with their contents unknown; possible presence of LBP and ACM on structures built prior to 1979; possible long term application of agricultural chemicals prior to development.
- PESA ID No. 09-07: Presence of drums with unknown contents; possible presence of LBP and ACM in structures built prior to 1979; transformers on adjoining residences with no indication of spillage.
- PESA ID No. 10-01: Presence of numerous drums with unknown contents; a pump/dispenser island associated with a diesel AST; presence of several old ASTs with unknown contents; possible long term application of agricultural chemicals prior development; electrical transformer with no indication of spillage; possible presence of LBP and ACM in structures built prior to 1979.
- PESA ID No. 11-04: Possible former coal mining operations near pond area; possible fill/excavation near pond area; possible presence of LBP and ACM in structures built prior to 1979; possible long term application of agricultural chemicals prior to development.
- PESA ID No. 12-01: Railroad switch/signal boxes may contain batteries and metals; past uses of rail line could have resulted in spills or releases of chemicals, petroleum products or hazardous materials; possible ERNS listing; possible creosote on wooden railroad ties.
- PESA ID No. 15-03: Presence of drums with unknown contents; past uses of rail line could have resulted in spills or releases of chemicals, petroleum products or hazardous materials; presence of ASTs; miscellaneous debris and equipment; possible presence of LBP and ACM in structures built prior to 1979.
- PESA ID No. 16-02: Presence of drums with unknown contents; presence of an auto repair service facility with likely use of petroleum products; past use of brick and tile

manufacturer; presence of fill materials; possible presence of LBP and ACM in structures built prior to 1979.

- PESA ID No. 16-SE: Unknown conditions associated to past filling operations; possible long term application of agricultural chemicals prior to development.
- PESA ID No. 17-04: Miscellaneous dumping of asphalt piles; presence of propane AST will visible staining and distressed vegetation.
- PESA ID No. 19-01: Possible former coal mining operations; dumping of miscellaneous materials.
- PESA ID No. 19-01: Possible former coal mining operations; dumping of miscellaneous materials.
- PESA ID No. 22-15: Protruding pipes of unknown use; presence of drums with unknown contents; possible presence of LBP and ACM in structures built prior to 1979.
- PESA ID No. 22-08: Railroad switch/signal box may contain batteries and metals; possible presence of LBP and ACM in structures built prior to 1979; electrical transformer on adjoining site with no indication of spillage.

Figure 14 – Potential REC Impacts



3.3.8.2 Potential Impacts

Table 9 indicates each PESA identified in the Project study area and the potential impacts resulting from construction of the Build Alternatives.

Table 9 – Potential REC Impacts

No.	Mile Post (Approx.)	Side of RR	PESA ¹ ID	Acres Potentially Impacted (Approx.)	Potential Impact Due To	PESA ¹ Appendix A Figure Reference
1	205.75 to 214.52	N/A	01	106.30	UPRR Existing ROW	ESR Sheets 6-17
2	206.00	W	07-02	0	N/A	ESR Sheets 7-8
3	206.60	W	08-02	0	N/A	ESR Sheet 8
4	206.65	E	08-06	0.09	Proposed ROW	ESR Sheet 8
5	206.80	E	08-04	0	N/A	ESR Sheet 8
6	206.90	E	08-03	0	N/A	ESR Sheet 8
7	206.97	W	09-05	0	N/A	ESR Sheet 9
8	207.08	E	09-10	0	N/A	ESR Sheet 9
9	207.30	W	09-04	0	N/A	ESR Sheet 9
10	207.35	E	09-07	0.09	Construction Easement	ESR Sheet 9
11	207.45	E	09-10	0	N/A	ESR Sheet 9
12	207.50	W	10-01	0.69	Proposed ROW	ESR Sheets 9-10
13	208.55	E	11-04	6.42	Proposed ROW	ESR Sheets 11-13
14	208.55	W	11-03	0	N/A	ESR Sheets 11-12
15	208.90	W	12-01	5.46	Construction Easement	ESR Sheets 12-15
16	210.60	W	15-03	0.24	Proposed ROW	ESR Sheet 15
17	210.65	E	16-01	0	N/A	ESR Sheets 15-16
18	210.85	W	15-01	0	N/A	ESR Sheet 15
19	210.90	W	16-04	0	N/A	ESR Sheets 15-16
20	210.95	W	16-03	0	N/A	ESR Sheet 16
21	210.98	W	16-02	0.03	Construction Easement	ESR Sheet 16
22	211.03	E	16-SE	0.21	Construction Easement	ESR Sheets 16-17
23	211.80	W	17-04	4.21	Proposed ROW	ESR Sheets 17-19
24	211.85	E	17-05	0	N/A	ESR Sheets 17-19
25	212.75	W	19-01	8.27	Proposed ROW	ESR Sheets 19-22
26	214.48	W	22-15	0.09	Proposed ROW	ESR Sheet 22
27	214.52	N/A	22-08	0.25	Morean St. Existing ROW	ESR Sheet 22
TOTAL ACRES IMPACTED (No. 2 - No. 27)				26.05		

¹ PESA (Preliminary Environmental Site Assessment) Girard Siding – MP 207.75 to 214.52, Geo Services, Inc., February 2013

One of the locations identified as a REC in the PESA, Langheim Ready Mix (LRM), PESA ID No. 15-03, located on an adjoining parcel to the UPRR right-of-way in Girard, had been previously assessed in a separate Phase I Environmental Site Assessment (ESA) in September, 2012. Historical research performed in the Phase I ESA identified this property as being previously occupied with spur tracks and a turn table. The findings reached in the Phase I ESA determined that this property qualifies as a REC due to the likely presence of petroleum products that could

have impacted the surrounding soils adjoining the UPRR right-of-way. In the Phase I ESA, it is recommended that soil samples should be collected from the soil on the central and northern portions of the property to determine if contamination is present. This report is found in *Appendix A*.

The regulatory database report prepared by FirstSearch for the entire length of the Tier 2 Project study area, which encompasses the study limits of the Girard Siding EA, was reviewed in the PESA. Of the 123 listed sites captured on the database report, which searches ASTM databases from the target property to ½ mile of the railroad tracks proposed right-of-way limits, only 29 mappable sites were identified in Virden (19) and Girard (10). There were no listings in the database search for Nilwood or the rural stretches between the municipal boundaries of Virden and Girard, and therefore were not mapped. It could not be determined if any of the listed sites pertain to those areas. However, for Virden, eleven (11) Underground Storage Tank (UST) facilities were found within the ASTM minimum search distance of 0.25 miles from the rail line property. Five of the UST facilities are co-listed with the Leaking Underground Storage Tank (LUST) database. Of the seven (7) LUST facilities found within 0.25 miles of the rail line limits in Virden, five are listed as “case closed” (No Further Action/No Further Remediation) as ruled by the Illinois Environmental Protection Agency (IEPA). In the PESA, two LUST facilities listed as “active” were assessed in terms of potential impact to the rail line limits in the PESA. There are 12 Resource Conservation and Recovery Act (RCRA) small-quantity generator listings assigned to nine (9) facilities in Virden, all within 0.25 miles of the rail line property limits. In Girard, eight (8) UST facilities were found within 0.25 miles of the rail line property limits. Three of the UST facilities are co-listed with the only three (3) LUST facilities identified in Girard, all indicated as “active.” The proximity to the rail line proposed right-of-way, which includes a determination of gradient relationship and review of open LUST case files, were assessed in the PESA. In addition, two RCRA small-quantity generator facilities were identified in Girard in which one of the facilities is listed twice. The potential impact of any of these regulatory-listed facilities was assessed in the PESA. No other ASTM databases were identified in Virden or Girard.

De minimis conditions, as used by ASTM, generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions determined to be *de minimis* are not Recognized Environmental Conditions. In the PESA, *de minimis* conditions were identified in the following categories: (1) The potential for structures to contain ACM and/or LBP; (2) The potential long-term usage of agricultural chemicals, such as fertilizers, pesticides and herbicides; and (3) The possibility of creosote in railroad ties; and (4) Presence of propane aboveground tanks (no indications of spillage).

It does not appear from the listed database listings that there would be any adverse impacts under the Build Alternative or No-Build Alternative. A summary of findings in the PESA, as presented in the table above, notes that 12 of the 27 RECs fall within approximately 26.05 acres of the proposed right of way or proposed construction easements. An assessment of these potential impacts still needs to be determined, which may require performing a Preliminary Site

Investigation (PSI). Therefore, under the Build Alternative, the potential exists for impacts from the 12 REC sites listed in the PESA.

Mitigation

Regarding hazardous materials and the potential REC site impacts, the following commitments will occur for the Build Alternative:

- 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 resources.
- Further environmental studies would be conducted if the proposed improvements require excavation, including subsurface utility relocation, on a property with an easement. A Preliminary Site Investigation (PSI) would be conducted for state and state jurisdiction roadway ROW prior to acquisition of any contaminated parcel, and/or required temporary or permanent easements.
- In some cases, the portion of the Project that involves an REC can be risk managed and not require additional assessment. If risk managing is not possible, further environmental study is required, specifically a PSI, to determine the nature and extent of possible contamination.
- Special waste issues encountered during construction will be managed in accordance with UPRR standard specifications and special provisions.
- In the case of an emergency involving hazardous materials, UPRR would enact a hazardous materials emergency response plan.

3.3.9 Cultural Resources

This subsection provides an evaluation of historic, architectural and archeological resources within UPRR right-of-way. Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) requires federal agencies to consider the impacts of their project undertakings on historic architectural and archeological resources that are either listed in or have been determined eligible for listing in the National Register of Historic Places (NRHP) (36 CFR 800). If projects are federally permitted, licensed, funded, or partially funded, the Project must comply with Section 106. Under Section 106, federal agencies are required to provide the public with information about a proposed 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).

3.3.9.1 Existing Conditions

Route 66 was designated in the NHPA as a historically significant roadway, protecting it from any alterations to its original design in all states it passes through. In Illinois, the Illinois Historic Preservation Agency (IHPA) designated portions of Route 66 as "Historic" Route 66, including a section located in the Girard Siding study area. The Historic Route (HR) 66 crosses the UPRR mainline at two locations: in Nilwood at MP 214.52 (Morean Street) and south of Girard at approximately MP 211.78 (Old Highway 4/Cambridge Road) (see *Figure 14*).

Route 66 originally followed the already existing Illinois Route 4 north of Hamel. The route navigates through Staunton, Sawyerville, Benld, Gillespie, and Carlinville to Nilwood. Route 4/Route 66 from Nilwood to Girard (within the Girard Siding Project corridor) was listed on the U.S. National Register of Historic Places on May 23, 2002. Route 66 continues along IL Route 4 north through Virden, Thayer, to Auburn.

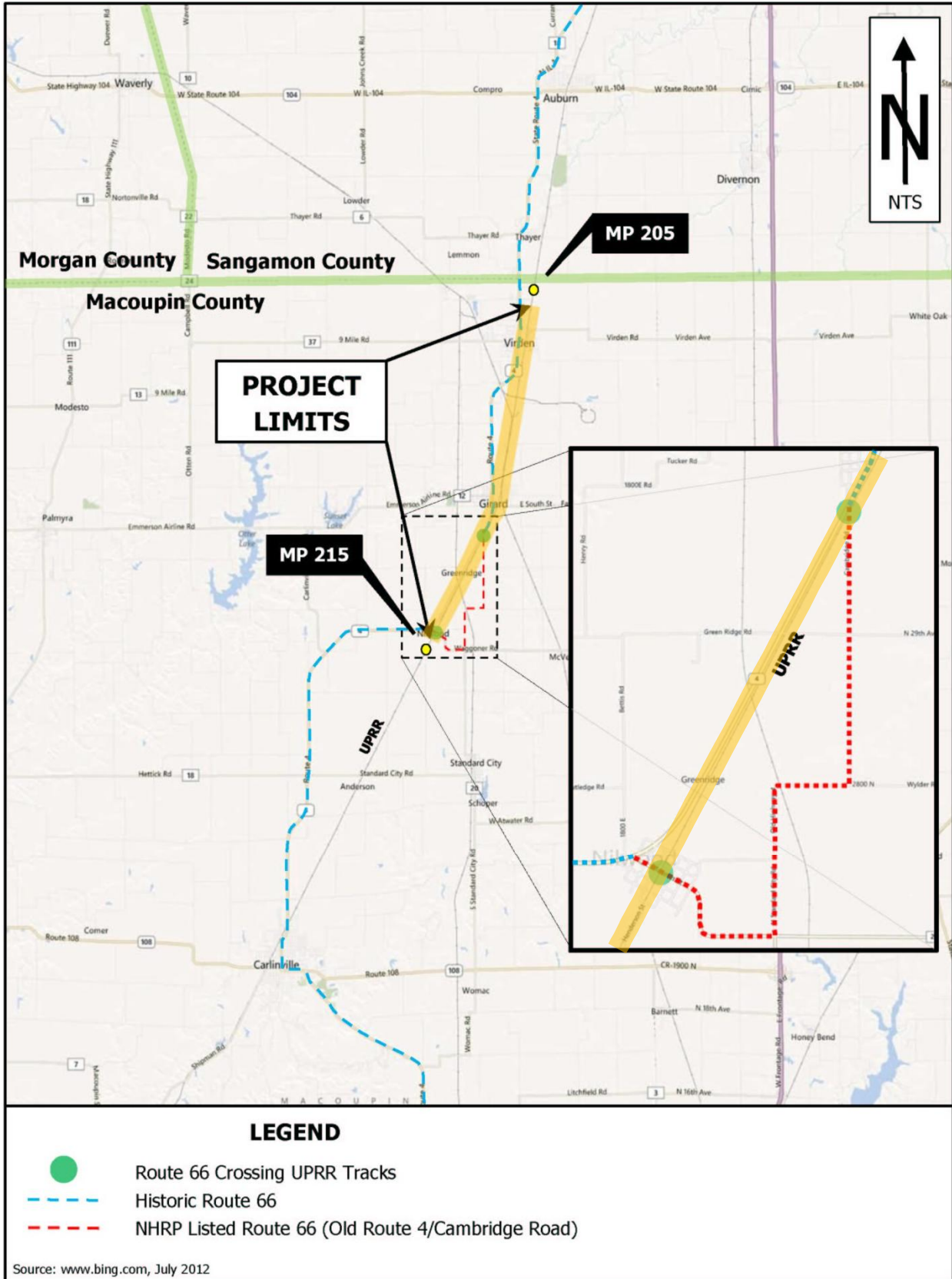
3.3.9.2 Potential Impacts

Under the No-Build Alternative, there would be no impacts to historic resources as no construction work would occur.

In a letter dated October 10, 2012, the SHPO concurred that the Girard to Nilwood section of Route 66, which is listed on the NRHP, is the only historic resource in the Project area. The Build Alternative will intersect this historic resource at Morean Street in Nilwood and at Cambridge Road in Girard. However, the SHPO concurred that impacts to this resource will be minimal and also states that subsequent grade crossing improvements at both locations will likely cause an adverse impact. However, these impacts will be evaluated in another report submittal, and are not under the scope of this EA. The letter also states that no other cultural resources worthy of the National Register consideration were identified by IDOT's Cultural Resources staff. In a letter dated February 19, 2013, the SHPO concurs that no historic properties will be adversely affected by the proposed action of the Project. See *Appendix B* for copies of the SHPO letters.

The Build Alternative would not adversely affect historic properties.

Figure 15 – Route 66



3.4 Construction Impacts

Impacts associated with construction of the improvements would be local and temporary noise, vibration, dust, and traffic disruptions. Noise and vibration impacts are discussed in detail in Section 3.1.4. There is also the potential for impacts to intermittent streams and wetlands.

These temporary impacts would occur from operation of equipment for the construction of an additional siding track, construction of the existing mainline track, installation of new crossing gates and signal devices and equipment, and reconfiguration and realignment of at-grade roadway crossings. Normal traffic may be flagged at various times to allow entry and exit of construction equipment to the Project sites using adjacent or nearby rail/highway grade crossings. Such occurrences are expected to be perceived by motorists as an inconvenience. However, these impacts would be temporary, and existing vehicular travel would be restored after construction has been completed.

The Project may require periodic reduction in the operating speed of trains that pass through construction zones. Also, there may be a need to adjust the schedule of rail operations if activities require temporary shutdown of selected track sections. Such schedule and/or operations adjustments would be necessary when there is a potential safety risk due to the proximity of moving trains and construction activities that are incompatible with ongoing train traffic. Such delays or disruptions may be similar to normal maintenance activities under existing conditions.

Construction could cause temporary impacts to wetlands, streams, and surrounding stream banks as the track improvements are made (replacement of rail, crossties and track ballast, removal and replacement of trackside equipment). In the section where the siding track is being constructed, culverts or bridge structures will be extended or replaced. These procedures are primarily restricted to the existing right-of-way, although there are also wetlands located within the additional ROW necessary for the Build Alternative.

Measures that are available to minimize temporary construction impacts could include requiring contractors to 1) avoid wetlands during the establishment of construction staging areas and other construction activities and 2) employ erosion, sedimentation and bank stabilization practices at or near creeks or creek crossings. Additionally, debris and spoil disposal, if generated, would be removed according to state and local regulations.

3.5 Indirect and Cumulative Impacts

3.5.1 Indirect Impacts

Indirect impacts are defined as reasonably foreseeable future consequences to the environment that are caused by the proposed action, but that would occur either in the future (later in time) or near, but not in the same location as, direct impacts associated with implementation of a build alternative. Under the Council on Environmental Quality (CEQ) regulations, indirect impacts are defined as those that are "caused by the action and are later in time or farther

removed in distance but are still reasonably foreseeable. Indirect effects would 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 ecosystem" (40 CFR 1508.8b).

Indirect impacts can be associated with the consequences of land use change and development that would be indirectly supported by changes in local access or mobility. Indirect impacts differ from those directly associated with the construction and operation of a project itself and are often caused by what is commonly referred to as "induced development." Induced development would include a variety of alterations such as changes in land use, economic vitality, property values and/or population density. The potential for secondary impacts to occur is determined in part by local land-use and development-planning objectives and the physical location of a proposed action.

3.5.2 Cumulative Impacts

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. Under the CEQ regulations, cumulative effects are defined as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). The cumulative effects analysis considers the aggregate effects of direct and indirect impacts – from federal, non-federal, public, or private actions – on the quality or quantity of a resource.

The intent of a 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. Contributions to cumulative effects associated with the Build Alternative on the resources analyzed would be limited to those derived from the direct and secondary impacts of the action.

As with any new construction, there will be additional energy expended that will contribute to the cumulative impact as a result of the Build Alternative. This is also true with the loss of agricultural land and trees and this will also contribute to the cumulative impact as a result of the Build Alternative.

A minor cumulative loss to wetlands and/or WOUS may occur over time in conjunction with the Build Alternative, and other developments that may occur within the Project study area. These impacts, however, are expected to be minimal as these resources are protected by federal and state regulations, requiring mitigation for any impacts to be unavoidable.

The Build Alternative would provide some beneficial contributions to cumulative impacts. The proposed improved operability of freight and passenger rail service by the construction of

expanded and new siding is expected to provide an overall benefit to air quality. Air quality benefits are also expected as potential motorists move to the faster Amtrak service that will be using energy efficient equipment. The improvements to the grade crossing treatments will benefit the safety of motorists crossing the railroad.

3.6 Preferred Alternative

The Preferred Alternative for this project is the Build Alternative. The proposed Build Alternative would be of immediate benefit to the rail passenger and freight services using this line today, as well as future use for HSR trains. The Build Alternative would improve fluidity of train movement, decrease delays in passenger trains, and reduce congestion in the area between Virden to Nilwood. The siding track would also improve the efficiency of the railroad by allowing for train meets and sorting of cars for freight trains as well as an area for storing trains during maintenance incidents. The upgrade improvements would enhance the safety of train operations through the zone, including those grade crossings within the Project limits.

3.7 Permits

The UPRR would be required to obtain approvals and or permits under the following authorities:

- Section 401 of the Clean Water Act, Water Quality Certification from the IEPA.
- Coverage under the National Pollutant Discharge Elimination System (NPDES) Storm Water discharge permit, which is administered by the Illinois Environmental Protection Agency (IEPA). Section 402 of the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Construction Permit from the IEPA. Because the proposed Project would potentially disturb more than one acre, it would be subject to the requirement for an NPDES permit for stormwater discharges from the construction site. Permit coverage would be obtained under the IEPA General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit No. ILR10). A Stormwater Pollution Prevention Plan would be prepared and implemented, in accordance with requirements under the NPDES permit(s).
- An approved operating soil erosion and sedimentation control program which ensures compliance with 70 ILCS 405 Soil and Water Conservation Districts Act.
- USACE Section 401/404 and state wetlands and waterways permit to authorize fill in wetlands and WOUS associated with project construction.

3.8 Environmental Commitments

The following commitments will occur for the Preferred Alternative:

- Prior to construction, erosion control fencing will be placed at the limits of construction. Zones of fill, grading, compaction, or equipment movement will be restricted to areas outside the protective fencing. Impacts from silt and sedimentation will be minimized through adherence to erosion control measures.
- Prior to construction and as part of the wetland permitting process, necessary wetland mitigation as required for the Section 404 permit would be secured.
- The Project will minimize impacts to prairies during construction, staging, and access to the Project site. Where avoidance is not possible, the area of disturbance (direct and indirect, temporary and permanent) will be minimized. Where avoidance is not possible, the area of disturbance (direct and indirect, temporary and permanent) will be minimized through the use of BMPs, such as exclusionary fencing.
- Accidental spills of hazardous materials and wastes during construction or operation of the transportation system require special response measures. Occurrences will be handled in accordance with local government response procedures. Refueling, storage of fuels, or maintenance of construction equipment will not be allowed within 100 feet of wetlands or water bodies to avoid accidental spills impacting these resources.
- Further environmental studies would be conducted if the proposed improvements require excavation, including subsurface utility relocation, on a property with an easement. A Preliminary Site Investigation (PSI) will be conducted for state and state jurisdiction roadway ROW prior to acquisition of any contaminated parcel, and/or required temporary or permanent easements.
- In some cases, the portion of the Project that involves an REC can be risk managed for state and state jurisdiction ROW, and not require additional assessment. If risk managing is not possible, further environmental study is required, specifically a PSI, to determine the nature and extent of possible contamination.
- Special waste issues encountered during construction will be managed in accordance with UPRR standard specifications and special provisions or the "IDOT Standard Specifications for Road and Bridge Construction and Supplemental Specifications and Recurring Special Provisions."
- In the case of an emergency involving hazardous materials, UPRR would enact a hazardous materials emergency response plan.
- Further efforts will be made in future phases of work to avoid and minimize additional wetland impacts. Avoidance and minimization may be accomplished by narrowing the railroad cross-section with the use of retaining walls, steeper embankments, and bridging critical wetland resources. Avoiding and minimizing impacts to wetland resources may be constrained by other critical resources and local issues. Objectives for mitigation will be established in consultation with state and federal regulatory and resource agencies.
- BMPs for dust will be followed. Debris and spoil disposal, if generated, will be removed according to state and local regulations.
- UPRR will ensure that all equipment will be in good working order and maintained, including the exhaust systems.

4.0 Coordination and Consultation

Public involvement is an important part of any IDOT project planning process. In addition to working with the requisite federal and state agencies, IDOT efforts for this Environmental Assessment included outreach to a wide variety of stakeholders along the Project corridor. A printed copy of this EA will be in the local public library in Girard; and electronic copies will be available on IDOT and FRA websites for the public to review and provide comments.

4.1 Meetings

The Draft Chicago-St. Louis High-Speed Rail Project Environmental Impact Statement (EIS) was completed in May 2000, and a Notice of Availability appeared in the *Federal Register* on June 23, 2000. Comments on the Draft EIS were solicited from regulatory agencies, local units of government, operating railroads and interested citizens. Formal Public Hearings for the Original Project were held in the cities of Alton, Bloomington, Chicago, Joliet, Kankakee, and Springfield, Illinois, from July 24, 2000, through August 1, 2000. The Notice of Availability of the Final EIS was published in the *Federal Register* on January 31, 2003. The notice specified March 10, 2003, as the end of the wait period. By written request, this period was extended to April 15, 2003, for Macoupin County. A Record of Decision was issued by FRA and FHWA in 2004.

UPRR and IDOT will offer a public meeting opportunity for this EA through a notice in the local paper. The EA will be available for public review and comment in both a printed copy, found in local libraries, and an electronic copy found on IDOT and FRA websites.

4.2 Agencies

Letters sent to agencies are shown in *Appendix B*. This appendix includes letters sent by FRA regarding this EA. All coordination will be conducted in accordance of FRA procedures.

4.2.1 State Historic Preservation Office (SHPO) Consultation

The SHPO was contacted for this Project. A letter of concurrence that states no historic properties will be adversely affected by the Preferred Alternative is included in *Appendix B*.

4.2.2 Illinois Department of Natural Resources (IDNR) Consultation

Consultation with the IDNR was initiated through IDOT's Biological Resource Review (BRR). The BRR is included in *Appendix B*.

4.2.3 U.S. Fish and Wildlife Service

The USFWS was contacted for this Project about threatened and endangered species, of specific concern is the Indiana bat (*Myotis sodalis*). A letter stating that the Project (the Preferred Alternative) is not likely to adversely affect the Indiana bat (*Myotis sodalis*) is included in *Appendix B*.

5.0 Distribution List

5.1 Agency Coordination

5.1.1 Federal Agencies

Advisory Council on Historic Preservation
Federal Highway Administration, Illinois Division
National Park Service
U.S. Army Corps of Engineers, St. Louis District
U.S. Army Corps of Engineers, Rock Island District
U.S. Department of the Interior, Fish & Wildlife Service, Marion, IL Field Office
U.S. Environmental Protection Agency, Region 5

5.1.2 State Agencies

Illinois Department of Agriculture
Illinois Department of Natural Resources
Illinois Environmental Protection Agency
Illinois Historic Preservation Agency
Illinois Natural History Survey

5.1.3 Counties

Macoupin

5.1.4 Local Communities and Jurisdictions

City of Virden
Virden Township
City of Girard
Girard Township
Town of Nilwood
Nilwood Township

5.1.5 Railroads

Union Pacific Railroad Company
BNSF Railway Company

6.0 References

- Berg, R.C., J.P. Kempton and K. Cartwright, 1984. *Potential for contamination of shallow aquifers in Illinois*. Illinois State Geological Survey Circular 532.
- Geo Services, Inc., Preliminary Environmental Site Assessment – *Draft Report, for IDOT High-Speed Rail (HSR) Tier 2, MP 203.00 to MP 230.00*, Geo Services Job No. 11104-C, December 10, 2012.
- Illinois Environmental Protection Agency, 2010. Illinois Integrated Water Quality Report and Section 303(d) LIST – 2010. Clean Water Act Sections 303(d), 305(b) and 314 Water Resource Assessment Information and Listing of Impaired Waters. Appendix B. Draft.
- Illinois Department of Natural Resources, 2011. Natural Resource Assessment High-Speed Rail Corridor.
- Olsson Associates, 2012. Union Pacific Railroad Company, Springfield Subdivision, SPCSL A (HSR) Tier 2 (MP 203 to MP 230), Macoupin and Sangamon Counties. *Wetland Delineation Report*. May 5, 2012.
- Parsons Brinckerhoff, Inc., Phase I Environmental Site Assessment, Langheim Ready Mix, 110 East Jefferson Street, Girard, IL, for IDOT Bureau of High Speed and Passenger Rail, Project # 16873A, September 6, 2012.
- Quigg Engineering, Inc., 2012. Chicago to St. Louis High Speed Rail Project Tier 2 South – Auburn to Shipman, Illinois. *Report of Fall 2011/Spring 2012 Field Studies Union Pacific Mile Posts 200.76 to 236.00 Sangamon and Macoupin Counties*. May 2012.
- Swallow, Ann V., 1991. Summarized Illinois Historic Landmarks Survey
- Swink and Wilhelm, 1994. *Plants of the Chicago Region*, Indiana Academy of Science, 4th Edition
- U.S. Department of Agriculture, Census Bureau, 2009. 2007 Census of Agriculture, February 2009, updated September 2009. Illinois State and County Data, Volume 1 – Geographic Area Series – Part 13.
- U.S. Department of Agriculture, National Resources Conservation Service, 2004. *Soil Survey of Macoupin County, Illinois*.
- U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov>.

- U.S. Department of Commerce, United States Census Bureau, 2010 and 2000 Census, www.census.gov
- U.S. Department of Homeland Security, Federal Emergency Management Agency, Flood Insurance Rate Maps (FIRM), FIRMeete, <https://msc.fema.gov> .
- U.S. Department of the Interior, Fish and Wildlife Service, National Wetland Inventory Map, Wetlands Mapper, www.fws.gov/wetlands.
- U.S. Department of Transportation, Federal Highway Administration, Federal Railroad Administration, and Illinois Department of Transportation, 2003. *Final Environmental Impact Statement, Chicago-St. Louis High-Speed Rail Project*. January 2003. <http://www.dot.il.gov/hsrail/pdf/cover.pdf>
- U.S. Department of Transportation, Federal Railroad Administration, 2005. *High-Speed Ground Transportation Noise and Vibration Impact Assessment* guidance manual. (September 2012).
- U.S. Geological Survey, The National Map Viewer, <http://viewer.nationalmap.gov/viewer> .