

ENVIRONMENTAL ASSESSMENT
FOR THE ILLINOIS HIGH SPEED RAIL
SHIPMAN, ILLINOIS (MP 230) TO GODFREY, ILLINOIS (MP 253)
JERSEY, MACOUPIN AND MADISON COUNTIES, ILLINOIS

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

by the Illinois Department of Transportation
Bureau of High Speed & Passenger Rail

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Shipman, Illinois (MP 230) to Godfrey, Illinois (MP 253)
Environmental Assessment
Jersey, Macoupin and Madison Counties, Illinois
Submitted Pursuant to 64 FR 28545

by the
US DEPARTMENT OF TRANSPORTATION FEDERAL RAILROAD ADMINISTRATION
and
ILLINOIS DEPARTMENT OF TRANSPORTATION

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ABSTRACT: This Environmental Assessment (EA) evaluates the construction of double tracking along the mainline service line of the Union Pacific Railroad (UPRR) from north of Shipman (Milepost 230) to Godfrey (Milepost 253), in Jersey, Macoupin and Madison Counties, Illinois. The Preferred Alternative includes: 1.) upgrading existing tracks; 2.) adding a second mainline track; 3.) constructing turnouts; 4.) fencing; 5.) adding Positive Train Control (PTC) signaling; and 6.) improving and modifying existing at-grade 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 section from Shipman to Godfrey. The sidings 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. No significant impacts to natural, social, or human environments would occur.

The Preferred Alternative would impact the following resources; however impacts would be minimized to the greatest extent possible and mitigated as required: 1.) approximately 5.529 acres of wetlands; 2.) approximately 1.59 acres of prairie remnants; and 3.) acquisition of approximately 14.75 acres of agricultural land, 15 acres of additional permanent and temporary easements, involving 25 buildings and structures.

Temporary impacts to water quality, noise, transportation, and air quality could occur from construction-related activities.

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1.0 Purpose and Need

1.1 Introduction

The Federal Railroad Administration (FRA) and the Illinois Department of Transportation (Department) have proposed to provide a double track railroad on the Union Pacific Railroad (UPRR) from Shipman to Godfrey, Illinois (the Shipman to Godfrey Track Improvement Project or “the Project”). The improvements generally provide for upgrading existing tracks, adding a second mainline track and Positive Train Control (PTC) signaling, constructing turnouts, fencing, and improving and modifying existing at-grade crossings.

The Shipman to Godfrey Track Improvement Project is a component of the Chicago to St. Louis High Speed Rail (HSR) Improvements to enhance existing passenger transportation and create a more balanced use of the transportation network.

A Final Environmental Impact Statement (FEIS) was completed for the Chicago to St. Louis HSR Improvements Project by the Department in 2003, with a Record of Decision (ROD) issued by FRA and the Federal Highway Administration (FHWA) in 2004 approving the action. The proposed improvements included in the Final EIS and ROD will be referred to as the “Original Project”.

As part of the continuing efforts, the Project is re-evaluating the Original Project 2003 EIS for modifications to the Shipman to Godfrey Section of the Chicago to St. Louis HSR Corridor. The features in this section that have been modified or added on since the Original Project conditions were evaluated include: 1.) A change in the composition of passby trips per day from ten passenger service to two passenger service and eight HSR service; 2.) Providing wider spacing between the tracks from 13.5 feet to 20 feet to facilitate maintenance; 3.) Providing an access roadway alongside the track; and 4.) Installing a Positive Train Control (PTC) signaling system on the main track and passing track. The proposed Project would reduce travel time and improve service reliability, which are vital to increasing the viability of intercity passenger rail transportation between Chicago and St. Louis. This document has been prepared and made available for public and agency comment consistent with FRA’s Procedures for Considering Environmental Impacts, 64 FR 28545, and the National Environmental Policy Act (NEPA) and its implementing regulations.

1.2 Study Area

The study area includes a nearly 22-mile section of the UPRR from Shipman, Illinois to Godfrey, Illinois, within the counties of Jersey, Macoupin and Madison. The UPRR Mileposts (MP) are MP 230 to MP 253. See Appendix A for the Project Location Map.

1.3 Project Purpose and Need

As set forth in the 2003 FEIS and approved in the 2004 ROD, the primary purpose of the Original Project is to complete the improvements necessary to enhance the passenger transportation network in the Chicago to St. Louis corridor. The existing transportation network consists of highway (automobile and bus), air and rail (Amtrak) travel. Currently, 99 percent of the 35 million annual trips in the

Chicago to St. Louis corridor are accomplished through automobile and air travel. Enhancements to passenger rail service would include reduced travel times, improved service reliability, increased frequency of trips, and increased capacity. Increased use of passenger rail would result in an overall improvement in traveler safety in the corridor, as well as a reduction in air pollutant emissions and energy consumption. A more balanced use of the network will provide benefits to the human environment over the existing network use.

The need of the Original Project is to improve on-time performance on the existing Chicago to St. Louis route and to provide for an increase in average speeds and shorter trip times. According to ridership estimates, the 2010 mode split for annual person trips in the corridor is 97.3 percent for automobile, 1.1 percent for air, 1.3 percent for rail (Amtrak), and 0.3 percent for bus. Over 90 percent of the over 50 million corridor trips have origins or destinations in either Chicago or St. Louis. To achieve a more balanced transportation system in the corridor, trips must be diverted from the predominant mode of automobiles.

As part of this effort, the Shipman to Godfrey Track Improvement Project (Project) is proposed as part of a subsequent reevaluation of the 2003 FEIS. The Project would reduce passenger train delay that occurs because of a lack of passing opportunity when freight trains are present. Reducing travel time and improving service reliability are paramount to increasing the viability of intercity passenger rail transportation between Chicago and St. Louis.

2.0 Alternatives

2.1 Introduction

There were two alternatives considered for this Project: a No-Build Alternative and a Build Alternative, which would provide a double track operation from Shipman to Godfrey, Illinois. The following describes each of these alternatives.

2.2 No-Build Alternative

The No-Build Alternative represents future conditions in the Project area as a single track operation between MP 236.27 to MP 252.11. The No-Build Alternative would include the existing UPRR route. As part of the Original Project, now being designed and constructed as authorized by the 2004 ROD, the existing main track is being brought up to 110 mph standards to allow high speed trains to operate in the corridor. This includes the installation of four quadrant gates at public crossings, upgrading farm crossings, and Positive Train Control (PTC) signaling. Completion of this work is anticipated in 2014. The No-Build Alternative would retain the existing sidings at Shipman (2.3 miles long) and Godfrey (2.6 miles long), without upgrade to main track standards (keeping the existing 13.5-foot track centers rather than the wider 20-foot track centers), and would not construct the second main track for the 10.9 miles between them. The No-Build Alternative assumes that passenger trains would operate on a single track using the limited sidings and serves as the baseline against which the Build Alternative is compared.

2.3 Build Alternative

The section of the Chicago to St. Louis HSR route, covered in this Environmental Assessment referred to as the “Build Alternative”, extends from Shipman (UPRR MP 230) to Godfrey (MP 253) and is located in Macoupin, Jersey, and Madison Counties. There are two existing freight/passing sidings in this section:

- At the north end, Shipman siding (2.3 miles long, MP 236.3 to 238.6)
- At the south end, Godfrey siding (2.6 miles long, MP 249.5 to 252.1)

The Build Alternative generally includes upgrading existing tracks, adding a second mainline track, constructing turnouts and fencing, adding Positive Train Control (PTC) signaling, and improving and modifying existing grade crossings. In addition, the track in the existing two sidings will be upgraded to main track standards (providing 20-foot track centers, concrete ties, and heavier welded rail). The enhanced standards are being applied to the existing Shipman and Godfrey sidings which are being incorporated in the new section of double track. The two sidings will be connected with 10.9 miles of new second main track to create a section of continuous double track totaling 15.8 miles. See Appendix B, Proposed Improvements, which shows the Build Alternative and locations of the sidings.

To construct the Build Alternative, approximately 15 acres of right-of-way (ROW) acquisition and 15 acres of temporary and permanent easements would be required. In some locations, constructing the second main track and the access roadway would extend the fill and cut sections beyond the existing

ROW and additional ROW and access easements would be needed for grading and re-establishing ditch flow-lines. See Appendix B, Proposed Improvements for locations of the proposed ROW.

To accommodate the new second mainline track, the Build Alternative also includes the widening of the railroad bridge over Illinois Route 16 (W. Railroad Street) in Shipman, and may involve modifications and extensions to various existing culverts and one bridge over a small waterway. No major waterways are located along this route.

To facilitate maintenance, the Project would include wider spacing between the tracks (20-foot centers vs. the original 13.5 feet as previously described in the 2003 FEIS) and an access roadway alongside the track. The PTC signaling system would need to be installed on the added main track and some crossing gates may need to be relocated to permit installation of the additional track. Crossovers between the northbound and southbound tracks are proposed to be installed approximately at the middle of the new double track section, at approximately MP 242.

3.0 Affected Environment, Environmental Consequences and Mitigation

This section describes the existing environmental resources within the Project study area and analyzes the potential beneficial and adverse impacts to these resources from the two alternatives retained for detailed study pursuant to FRA's Procedures for Considering Environmental Impact (64 FR 28545 (May 26, 1999)).

3.1 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. The Clean Air Act (CAA) directed the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS), and later amendments reinforced their attainment and maintenance. The goal of air quality monitoring and actions is to ensure that the air quality levels of various pollutants do not exceed the set standards in order to protect the public health and welfare.

The distance between Shipman, Illinois and Godfrey, Illinois is approximately 22 miles and the Project is located in Jersey, Macoupin and Madison counties. Table 1 shows the NAAQS attainment status for the counties in the Shipman-Godfrey corridor. All three counties are in attainment for carbon monoxide and PM₁₀. Madison County is in nonattainment for the 1997 annual PM₂₅ standard, but in attainment for the 2006 24-hour PM₂₅ standard. Both Madison and Jersey counties are in nonattainment for 8-hour ozone. Based on the existing status of nonattainment for ozone in Jersey and Madison County, particular attention needs to be paid to any increase in emissions of ozone precursors such as VOC and NO_x.

Table 1. Attainment Status for Counties in Shipman-Godfrey Corridor¹

Pollutant	Counties in Nonattainment	Counties in Maintenance Areas
PM ₁₀	None	None
PM ₂₅	Madison (1997 standard)	None
8-hour Ozone	Jersey, Madison	None
Carbon Monoxide	None	None

¹ U.S. Environmental Protection Agency Greenbook., August 2011 Update. <http://www.epa.gov/oaqps001/greenbk/>

Attracted Vehicle Travel

This new high speed rail (HSR) line is expected to attract additional vehicle traffic to railway stations. However, this will not have any meaningful impact in the Shipman-Godfrey corridor, because there are no stops within this study area.

Short-Term Air Quality Impacts

With the construction of the HSR tracks, there will be some immediate local air quality impacts. These potential impacts include fugitive dust emissions, direct emissions from construction equipment and truck exhausts, increased emissions and dust from construction vehicles on the streets, and emissions from re-routed vehicular traffic. Construction activities can result in short-term increases in fugitive dust and equipment-related particulate emissions in and around the Project area. (Equipment-related particulate emissions can be minimized if the equipment is well maintained.) The potential air quality impacts will be short-term, occurring only while construction work is in progress and local conditions are appropriate. The potential for fugitive dust emissions typically is associated with ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and transportation of materials. The potential is greatest during dry periods, periods of intense construction activity, and during high wind conditions.

Long-Term Air Quality Impacts

An analysis of future mobile source emissions (VOC, CO and NO_x) was conducted for the Original Project 2003 FEIS of the entire HSR corridor. Results of the 2003 analysis indicated that future annual emissions would decrease under both the No-Build and HSR Build Alternative as compared to existing conditions. Additionally, no increases (in the annual VOC and carbon monoxide (CO) emissions) were projected for the Build Alternative. The lower projected annual emissions with HSR were attributed to diversions from buses and automobiles to HSR. NO_x emissions were projected to increase under the HSR Build Alternative, when compared to the No-Build Alternative.

This Original Project was originally categorized as “exempt” under the general conformity regulations because no net increases in VOC or NO_x emissions are projected in the ozone nonattainment or maintenance areas that exceed the rates set forth in Illinois’s general conformity regulations. Under the Build Alternative for the Original Project, emissions from new high speed rail trains would be lower than baseline emissions, because the proposed number of passbys per day was being reduced from ten Amtrak trains to eight HSR trains and two Amtrak trains. Emissions from new state-of-the-art HSR trains will be lower than from Amtrak trains. The net condition in VOC or NO_x emissions would be lower than baseline emissions as a result of the passby composition of trains (Amtrak vs. HSR) and additional passengers diverting from other modes of travel to HSR.

The results of the Original Project 2003 FEIS air quality analysis indicate that neither the No-Build Alternative nor the Build Alternative will result in CO concentrations in excess of the one-hour or eight-hour NAAQS of 35.0 ppm and 9.0 ppm, respectively. Under the Build Alternative, one-hour and eight-hour CO concentrations will increase slightly near grade crossings that will have traffic diverted to them from an adjacent grade crossing proposed for closure. However, this increase will be negligible. The other modifications of the Project will likely decrease concentrations as they are aimed to improve operational efficiencies and train functions.

There is no discussion of changes in PM (particulate matter) emissions within the Original Project 2003 FEIS. Because the Shipman to Godfrey corridor does not include any stations, it is unlikely that there would be any substantial change on PM₂₅ or PM₁₀ emissions. In the Build Alternative, the number of daily passbys is expected to remain the same at ten passbys per day but would now be comprised of eight HSR and two Amtrak trains rather than ten Amtrak trains. Any direct PM emissions from the trains would likely decrease as new HSR locomotives would provide less emissions and be more efficient than the No-Build Alternative. In addition, any PM emissions from vehicle idling at railroad crossings will likewise be reduced. There is no indication of any increase in long-term PM emissions as a result of this Project.

Mitigation

Construction of this component of the HSR corridor would be consistent with both the Federal Clean Air Act and its amendments and the provisions of the current State Implementation Plan (SIP).

3.2 Water Quality

3.2.1 Surface Water

The study area lies within two watersheds, the Lower Illinois/Macoupin Creek Watershed and the Mississippi South Central River Watershed as identified by the Illinois Environmental Protection Agency. The Macoupin Creek watershed, excluding the Lower Illinois River, encompasses 624,318 acres, discharging to the lower Illinois River. The Mississippi South Central River watershed encompasses 746,111 acres, including the Mississippi River and its tributaries between the lower Illinois River Watershed and the mouth of the Kaskaskia River.

Macoupin Creek Watershed

The Macoupin Creek watershed, can be characterized as a rural system influenced by human activity. TMDL (Total Maximum Daily Load) is a value of the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards per the Clean Water Act. Agriculture is the dominant land use within the watershed followed by forest land with the balance comprised of developed land, grassland, wetlands, and open water. Throughout the watershed, land has been modified for agricultural uses. Parameters responsible for the TMDL listing include: manganese, dissolved oxygen, fecal coliform, sedimentation/siltation, total phosphorous, total nitrogen, and other flow regime alterations.

Macoupin Creek is surrounded by farmland and forested areas, subject to land modifications observed throughout the watershed. Water quality in Macoupin Creek suffers from sedimentation as is evident in the channel bottom. Macoupin Creek is listed as impaired under the Illinois 303(d) listing; however, the section of Macoupin Creek (IL_DA-04) in the study area is not listed as impaired.

May Branch, a tributary of Macoupin Creek is surrounded by farmland and forested areas, subject to land modifications observed throughout the watershed. Water quality in the May Branch is good, with no apparent sediment load and the channel bottom is composed of sand and gravel. May Branch is not listed as impaired under the Illinois 303(d) listing within the Macoupin Creek watershed; however, Macoupin Creek is a 303(d) listed (impaired) water body.

Coop Creek, a tributary of Macoupin Creek is surrounded by farmland and forested areas, subject to land modifications observed throughout the watershed. Water quality in the Coop Creek subwatershed suffers from sedimentation as is evident in the channel bottom. Coop Creek is not listed as impaired under the Illinois 303(d) listing within the Macoupin Creek watershed; however, Macoupin Creek is a 303(d) listed (impaired) water body.

Mississippi South Central River Watershed

The Mississippi South Central River Watershed exhibits a variety of land types from rolling hills at the edge of the Springfield Till Plain, to the Mississippi River floodplain, and the bluffs in between. Agriculture and developed land are the dominant land uses with the balance comprised of forest land, grassland, wetlands, and open water. Large cities within the watershed include Belleville, Edwardsville, Alton, Granite City, Collinsville, and Godfrey. Major streams include the Mississippi River, Maeystown Creek, Fountain Creek, Canal One, Cahokia Canal, Cahokia Creek, Wood River, and Piasa Creek. Ninety-five percent of the streams are rated as good or fair with only five percent receiving a poor rating. The primary pollutant sources include siltation/suspended solids attributed to agricultural runoff, hydrologic/habitat alterations, and point sources. The watershed is not listed as a TMDL watershed with the Illinois Environmental Protection Agency (IEPA).

Water quality in the Little Piasa Creek Tributaries and Honey Cut Creek Tributaries is affected by sedimentation/siltation as is evident by deposits in the channel bottom, eroding slopes along the channels, nutrient enrichment as indicated by dark green tinted color, and channelization.

Potential Impacts

The No-Build Alternative would not directly impact the Macoupin Creek or Mississippi South Central River watersheds and would not impact surface water quality in the area. The site of the No-Build Alternative would remain as railroad structures within the existing footprint, with all current runoff being conveyed by existing streams and unnamed tributaries.

The Build Alternative would also not have a direct impact on surface water quality for the Macoupin Creek watershed or Mississippi South Central River Watershed. The site of the Build Alternative is currently UPRR right-of-way (ROW) and construction activities would be on current ROW or immediately adjacent to existing structures.

The 2003 FEIS for the Original Project states that construction of the Preferred Alternative has the potential to temporarily degrade the stream water quality due to erosion/siltation from track widening, cut and fill activities along the tracks, or culvert and bridge replacements. This impact will increase turbidity and lower dissolved oxygen to levels that may temporarily violate state water quality standards. Anticipated impacts from operation and maintenance will be similar to existing conditions.

U.S. Army Corps of Engineer (USACE) Section 404 permits are required for culverts and bridges that require work in a jurisdictional wetland or Water of the U.S. (WOUS). Temporary impacts include any activities required to accommodate a culvert or bridge. Permanent impacts include any activity that changes the footprint or extends the culvert or bridge. Under the Build Alternative, 15 culverts and bridges would require a USACE Section 404 Permit within the Project limits (See Appendix E for a listing).

Construction activities would include use of appropriate best management practices (BMPs) to ensure pollutants do not enter either watershed. Construction activities would be compliant with the IEPA NPDES ILR10 construction permit and the NPDES ILR40 MS4 permits for Godfrey, Illinois and Madison County, Illinois as appropriate. BMP selection would occur when construction plans are finalized and would include practices such as erosion and sediment control, good housekeeping procedures, and other measures that may be mandated by Municipal Separate Storm Sewer Systems (MS4).

3.2.2 Groundwater

The IEPA is the delegated environmental permit authority. There are no regulated groundwater recharge areas, community water supplies, adopted well setback zones, or non-community water supply wells within the study area according to the IEPA's Source Water Assessment Program (SWAP) program. The SWAP database search revealed nine Illinois State Geological Survey Wells near the proposed HSR project, with all nine wells beyond the limits of the Project. The IEPA's SWAP website displayed no private well heads within 200 feet of the proposed siding areas; however, the Illinois State Water Survey Database of Domestic Wells indicated there are three wells within the vicinity of the UPRR ROW. All private wells are located outside of the railroad drainage ditches and there are no known discharges to any groundwater resources from the UPRR ROW.

Potential Impacts

The No-Build Alternative would not impact the groundwater quality because it will remain in the existing footprint. The high speed trains will not transport any freight that may be a potential contaminant of groundwater resources with the exception of on-board diesel fuel and other petroleum-based products contained in locomotives and rail cars. The railroad has an established spill prevention, control, and countermeasure plan (SPCC Plan) to address any potential spill from a locomotive.

The Build Alternative will not measurably alter groundwater flow patterns since all improvements will lie adjacent to and parallel with existing railroad facilities. During construction, potential, but limited risk may be present for the release of motor fuel, oils, or other contaminants onto ground surfaces adjoining the alignment. Although minimal, the potential for impact will be the greatest where the alignment passes within a well-head protection area for a public water supply.

3.3 Noise and Vibration

Noise can be defined generally as unwanted sound. The primary effect of rail noise is annoyance, which interferes with sleep, thought, and conversation. Transportation noise rarely approaches higher levels that could cause hearing damage. Noise is expressed on a logarithmic scale in units called decibels (dB), and is commonly measured as A-weighted decibels (dBA). The common descriptor for measuring and predicting environmental noise is the equivalent sound level (L_{eq}), which approximates the average noise level over a certain period of time. The day-night sound level (L_{dn}) is the equivalent sound level during a 24-hour period, with a 10-decibel weighting added during the nighttime hours of 10 p.m. to 7 a.m. Both the L_{dn} and L_{eq} have been adopted by the FRA and IDOT to evaluate potential noise impacts for railroad projects.

3.3.1 Existing Conditions

This noise and vibration assessment evaluates passenger train operations under existing, No-Build, and Build Alternatives. The assessment of the potential for the Project to cause noise and vibration impacts was accomplished using the criteria and procedures for passenger high-speed rail (HSR) projects, as provided by the FRA *High-Speed Ground Transportation Noise and Vibration Impact Assessment* manual (FRA, 2012a). The FRA recommends the methods in the *FRA 2012 HSGT Manual* for passenger trains operating at speeds higher than 90 mph. Because future speeds under the Project would be 110 mph, this noise and vibration analysis used the *FRA 2012 HSGT Manual* for the future HSR passenger service under the Project. For the conventional passenger rail operations under existing conditions within the corridor, the noise and vibration impacts have been evaluated with the Federal Transit Administration (FTA) guidance in the *Transit Noise and Vibration Impact Assessment* manual (FTA, 2006). The FRA recommends the methods in the *FTA 2006 Manual* for conventional passenger rail operating at speeds lower than 90 mph.

The FRA process for evaluating potential noise and vibration impacts begins with the screening procedures. The FRA screening procedures are used to identify sensitive receptors where the next level of analysis is appropriate. Using this approach, sensitive receptors with the potential for noise and vibration impacts have been identified along the Project corridor. Receptor locations within the screening distance then have been evaluated using the general assessment level of analysis. If impacts were identified in the general assessment, then a detailed analysis would be warranted.

3.3.1.1 Noise

The FRA noise screening procedure considers the type of corridor, existing noise environment, type of HSR project, and rail speeds. For a steel-wheeled project within an existing railroad corridor, the *FRA 2012 HSGT Manual* identifies three screening categories: 1.) urban/noisy suburban, unobstructed (300 feet from center of mainline track); 2.) urban/noisy suburban, intervening buildings (200 feet from center of mainline track); and 3.) quiet suburban/rural (500 feet from center of mainline track). Because the majority of the Project alignment can be considered rural, the noise screening distance is 500 feet for the FRA “Quiet Suburban/Rural” noise environment.

The 2004 ROD noise analysis used the screening distance of 250 feet as the limit of the previous noise analysis. As stipulated in *FRA 2012 HSGT Manual*, the noise screening distance increased in rural areas to 500 feet. Therefore, the only receptors considered for noise analysis in this EA document are located between 250 to 500 feet from the rail tracks. Twenty-five sensitive receptors were identified along the corridor, of which five are within 250 to 500 feet. The locations of the noise sensitive receptors are shown in Appendix J.

Existing passenger rail noise levels for the Project study area are presented in Table 2. The existing noise levels for conventional passenger trains have been predicted with the CREATE Railroad Noise Spreadsheet Model (FRA, 2006). Table 2 also includes the passenger rail noise levels for the No-Build and Build Alternatives. The future noise levels for HSR operations in Table 2 have been predicted with the HSGT Noise Spreadsheet Model (FRA, 2012b).

Table 2. General Noise Assessment

Receptor Number	Distance to track C/L (feet)		Receptor Type	FRA Land Use and Noise Metric ⁽¹⁾	Train Noise Level ⁽²⁾ (dBA)		Increase in Noise: Build over Existing (dBA)	Allowed Increase: Moderate Impact ⁽³⁾ (dBA)	Impact Determination Under FRA Criteria
	Existing/ No Build	Build			Existing/ No Build	Build			
5	323	313	Isolated Residence	Category 2 - L _{dn}	48	50	2	5	No Impact
10	420	430	Church	Category 3 - L _{eq}	48	51	3	10	No Impact
13	430	440	Isolated Residence	Category 2 - L _{dn}	46	48	2	6	No Impact
23	396	406	Church	Category 3 - L _{eq}	49	51	2	9	No Impact
24	310	320	School	Category 3 - L _{eq}	50	53	3	8	No Impact

Footnotes:

- 1.) FRA Noise Impact Criteria apply the 24-hour L_{dn} for residences (Land Use Category 2: where people normally sleep) and the hourly L_{eq} for schools and churches (Land Use Category 3: Institutional land uses with primarily daytime and evening use)
- 2.) Train noise levels predicted with FTA/CREATE Spreadsheet Model for traditional passenger trains operating at 79 mph, and with the FRA Spreadsheet Model for HSR passenger trains operating at 110 mph.
- 3.) Impact criteria represent the allowable project noise limits based on the existing noise levels, as outlined in Table 3-1 of the 2012 FRA Manual. Impact level varies by FRA Land Use Category

3.3.1.2 Vibration

The FRA vibration screening procedure is based on land use, train frequency, and rail speeds. For residential land uses with infrequent events along a corridor with speeds between 100 mph and 200 mph, the *FRA 2012 HSGT Manual* identifies the screening distance of 100 feet. Five of the representative receptor sites were found to be located within 100 feet of the railroad ROW line and could be affected by Project vibration. The locations of the vibration-sensitive receptors are shown in the Appendix J.

Existing passenger rail vibration levels for the Project study area are presented in Table 3. Table 3 also includes the passenger rail vibration levels for the No-Build and Build Alternatives. The vibration levels for passenger trains have been predicted with the methods in the *FTA 2006 Manual* (FTA, 2006) and the *FRA 2012 HSGT Manual* (FRA, 2012).

Table 3. Ground-borne Vibration General Assessment

Receptor Number	FRA Vibration Land Use Category ⁽¹⁾	Existing/ No-Build Distance to track (ft)	Existing/ No-Build Train Vibration Level ⁽²⁾ (VdB)	Build Distance to track (ft)	Build Train Vibration Level (VdB)	Increase in Vibration: Build over Existing (VdB)	FRA Impact Criteria ⁽³⁾ Infrequent Events (VdB)	Vibration Impact Determination Under FRA Criteria
R2	2	75	73	85	74	1	80	No Impact
R7	2	88	71	78	76	5	80	No Impact
R11	2	81	71	91	73	2	80	No Impact
R17	2	89	71	99	73	2	80	No Impact
R22	2	51	76	61	78	2	80	No Impact

Footnotes:

1.) FRA Vibration Land Use Category 2 includes residences and other buildings where people normally sleep. Category 3 includes institutional land uses with primarily daytime uses, such as schools and churches.

2.) VdB is a logarithmic scaling of vibration magnitude

3.) For Infrequent Events (fewer than 30 vibration events per day), Ground-Borne Vibration (GBV) Impact Criteria are 80 VdB for Category 2 Land Uses (residences) and 83 VdB for Category 3 Land Uses (Institutional)

3.3.2 Potential Impacts

The proposed improvements to the Shipman to Godfrey section of the Chicago to St. Louis HSR corridor include increasing passenger train speeds from 79 mph to 110 mph for HSR, and adding a second main track (double tracking) adjacent to the existing main track. The total number of daily passenger trains would not change. The current schedule, ten passenger trains (five trains in each direction), is anticipated to be maintained as part of the proposal. Of the ten passenger trains under the Project, eight will be HSR and two are the existing long-distance Amtrak Texas Eagle service.

3.3.2.1 Noise

The No-Build Alternative would not create any change in noise impacts from the existing conditions, because the passenger train operations would not change.

For the Build Alternative, passenger rail noise levels would increase by 2-3 dBA compared with existing conditions (Table 2). The increase in passenger rail noise under the Project would result from increased speed. All noise increases are below the level of that would denote a “Moderate Impact” under FRA guidelines; therefore no noise impacts are expected.

While vehicular traffic contributes to the overall noise level, the construction of an additional track and reconstruction of the existing mainline track would not change vehicular traffic substantially. 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 with the trains being the dominant noise source, the passenger train traffic was taken into consideration.

The impact evaluation is based on the comparison of the existing passenger train noise and the train noise under the Build Alternative condition.

There would be no noise impacts on sensitive receptors from the Build Alternative because the current 10 daily passenger trains traveling between Chicago and St. Louis would continue to pass through the Project study area as those passenger trains currently do. Likewise, since no changes in the levels of freight train noise are expected, the overall noise levels would remain similar to existing conditions for freight trains.

Trucks and machinery used for construction would produce noise that could temporarily 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. Most of the Project corridor is rural and the potential to experience construction noise impacts would be localized to the residentially developed areas of Godfrey, Brighton, and Shipman. During construction, all equipment would be in good working order and maintenance, including the exhaust systems. Additionally, any temporary impacts would cease immediately after the construction activity is completed.

3.3.2.2 *Vibration*

For the Build Alternative, passenger rail vibration levels would increase by 1-5 VdB compared with existing conditions (Table 3). The change in passenger rail vibration under the Project would result from the increase in train speed and construction of new tracks closer to the receptor. Because the future passenger rail vibration would be within the FRA Impact Criteria, vibration impacts would not occur.

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 would be below the FRA impact criteria.

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations, which spread through the ground and diminish in strength with distance.

Ground vibrations from construction activities very rarely reach the levels that can damage structures, but they can achieve the audible and perceptible ranges in buildings very close to the site. The construction activities that typically generate the most severe vibrations are blasting and impact pile driving which will not be utilized as part of this project.

3.4 Wetlands

Executive Order 11990, "Protection of Wetlands", 1977, requires federal agencies to avoid short and long term impacts resulting from destruction or modification of wetlands and Waters of the U.S. (See Section 3.2 for additional discussions of Waters of the U.S.). This order directs federal agencies to avoid new construction in wetlands unless there is no other viable alternative. When it is necessary to cause

adverse effects to a wetland, the proposed action shall include all practical measures to minimize harm to the wetland.

Wetlands were identified within the study area by Olsson Associates in Fall 2010 and Spring 2011 using procedures outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. Procedures included field verification of the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. Wetlands within the Project area were classified using the *Classification of Wetlands and Deep-water Habitats of the United States* (Cowardin 1979).

A total of 84 wetlands were identified by Olsson Associates on behalf of the UPRR. Table 4 summarizes wetlands delineated from MP 230 to MP 253. The wetlands range in size from 0.001 acres to 2.503 acres. The Floristic Quality Index (FQI) ranges from 0 to 10.21.

Potential Impacts

The No-Build Alternative would have no impacts on wetlands.

The Build Alternative would impact wetlands. Table 5 identifies the temporary and permanent impacts associated with the wetlands within the Project limits. The temporary impacts total 2.708 acres. The permanent impacts total 2.821 acres. Impacts to wetlands consist of adding fill material, removing of materials and culvert replacements (See Table 5 for impacts). There were no wetlands identified in the 2003 FEIS for this section.

Table 4. Delineated Wetlands

Wetland ID	Cowardin Classification ¹	Size (Acres)	FQA ²		Mile Post
			Mean C	FQI	
TPA-Z	PEMA	0.640	0.00	0.00	230.09-230.35
TPA-II1	PFO1A	2.503	2.75	5.50	230.03-230.37
TPA-II2	PFO1A	0.668	2.75	5.50	230.40-230.72
A	PFO1A	0.079	6.00	8.49	230.35-230.36
B	PEMA	0.254	2.25	6.36	230.37-230.40
TPA-Y	PEMA	0.069	0.00	0.00	231.06-231.12
TPA-HH1	PFO1A	0.552	3.80	8.50	231.46-231.50
TPA-HH2	PFO1A	0.091	3.80	8.50	231.51-231.53
TPA-HH3	PFO1A	0.594	3.80	8.50	231.50-231.51
TPA-HH4	PFO1A	0.576	3.80	8.50	231.51-231.60
TPA-HH5	PRO1A	2.328	3.80	8.50	231.63-231.86
TPA-GG1	PFO1A/PEMA	0.045	1.67	2.89	231.60-231.61
TPA-GG2	PFO1A	0.205	1.67	2.89	231.66-231.78
TPA-GG3	PFO1A	0.074	1.67	2.89	231.94-231.97
TPA-FF	PEMC	0.367	2.00	2.00	231.93-231.98
TPA-EE	PEMC	0.546	2.00	2.00	232.13-232.18
TPA-DD	PUB/PFO1A	0.049	4.25	8.50	232.29-232.30
TPA-CC	PEMA	0.203	4.0	5.66	232.77-232.79
TPA-BB1	PUB/PFO1A	0.127	4.17	10.21	233.44-233.47
TPA-BB2	PFO1A	0.153	4.17	10.21	233.54-233.56
TPA-AA	PEMA	0.008	0.00	0.00	233.63-233.64
TPA-V1	PEMA	0.156	8.00	8.00	234.31-234.64
TPA-V2	PEMA	0.190	8.00	8.00	234.65-235.18
TPA-W	PEMC	0.019	5.00	7.07	235.26-235.30
TPA-X	PEMC	0.028	2.00	2.00	235.36-235.38
TPA-S	PEMC	0.001	1.00	1.00	235.69-235.69

Subdivision, SPCSL 2A HSR Tier 1 South, MP 230 to MP 253, Prepared by Olsson Associates

¹PEMA = Palustrine Emergent Temporarily Flooded

PEMC = Palustrine Emergent Seasonally Flooded

PSSA = Palustrine Scrub Shrub Temporarily Flooded

PFOA = Palustrine Forested Temporarily Flooded

PFOC = Palustrine Forested Seasonally Flooded

PUB = Palustrine Unconsolidated Bottom

²FQA reported values include the mean coefficient of conservatism (Mean C) and the Floristic Quality Index (FQI), Data provided by Olsson Associates

Wetland ID	Cowardin Classification ¹	Size (Acres)	FQA ²		Mile Post
			Mean C	FQI	
TPA-T	PEMA	0.072	5.00	5.00	235.92-236.03
TPA-U	PFO1A	0.191	2.00	2.00	236.14-236.17
KS-R	PEMA	0.039	3.50	4.95	237.46-237.49
KS_P1	PEMA	0.083	4.00	4.00	237.58-237.62
KS_P2	PEMA	0.138	4.00	4.00	237.63-237.73
KS_Q1	PFO/PEMA	0.124	2.00	2.83	237.59-237.87
KS_Q2	PFO/PEMA	0.067	2.00	2.83	237.80-237.86
MP-8	PEMA	0.215	5.00	7.07	238.52-238.86
CT_28	PFO1A	0.065	2.75	5.50	239.38-239.40
Ct-b-day4	PEMA	0.119	1.33	2.30	240.78-241.06
DP_A	PEMA	0.028	2.00	4.90	243.49-243.50
DP_B	PEMC	0.006	2.50	5.00	243.59-243.60
DP_C	PEMC	0.011	2.67	4.62	244.06-244.08
MP-9A	PEMA	0.009	1.17	2.87	243.53-243.54
MP-9B	PEMA	0.030	1.17	2.87	244.20-244.28
MP-9C	PEMA	0.005	1.17	2.87	244.30-244.31
MP-9D	PEMA	0.058	1.17	2.87	244.33-244.46
DP_D	PEMA	0.389	0.00	0.00	244.21-244.22
DP_E	PEMA	0.003	2.00	2.83	244.49-244.50
MP-10A	PEMA	0.013	2.13	6.02	244.90-244.92
MP-10B	PEMC	2.265	2.13	6.02	244.86-245.38
MP-10C	PEMA	0.145	2.13	6.02	244.86-245.38
DP_F	PEMC	0.037	0.50	0.71	244.78-244.80
DP_G	PEMA	0.698	2.33	4.04	244.84-245.65
DP_H	PEMA	0.117	2.50	3.54	244.99-245.10
MP-11	PEMC	0.434	2.80	6.26	246.13-246.61

Subdivision, SPCSL 2A HSR Tier 1 South, MP 230 to MP 253, Prepared by Olsson Associates

¹PEMA = Palustrine Emergent Temporarily Flooded

PEMC = Palustrine Emergent Seasonally Flooded

PSSA = Palustrine Scrub Shrub Temporarily Flooded

PFOA = Palustrine Forested Temporarily Flooded

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PUB = Palustrine Unconsolidated Bottom

²FQA reported values include the mean coefficient of conservatism (Mean C) and the Floristic Quality Index (FQI), Data provided by Olsson Associates

Wetland ID	Cowardin Classification ¹	Size (Acres)	FQA ²		Mile Post
			Mean C	FQI	
MP-12A	PEMA	0.024	4.25	8.50	246.20-246.23
MP-12B	PEMA	0.707	4.25	8.50	246.50-246.64
DP_I	PFO/PEMA	0.385	2.00	3.46	247.27-247.35
DP_L	PEMC	0.017	3.00	5.20	247.39-247.42
DP_J	PEMC	0.091	0.50	0.71	247.45-247.50
DP_K	PEMA	0.021	1.00	1.41	247.50-247.50
DP_N	PEMA	0.044	2.00	2.83	247.53-247.56
DP_M	PEMA	0.150	0.00	0.00	248.44-248.54
DP_O	PFOA/PEMC	0.084	2.67	4.62	248.44-248.49
DP_P	PEMC	0.018	2.00	2.83	248.59-248.62
MP-13	PEMA	0.163	2.86	7.57	249.11-249.22
KS_I2	PEMA	0.144	1.67	2.89	249.27-249.38
KS_I1	PFO/PEMA	0.156	1.67	2.89	249.43-249.44
KS_J1	PEMA	0.060	4.00	5.66	249.46-249.50
KS_J2	PEMA	0.096	4.00	5.66	249.51-249.61
KS_J3	PSSA	0.396	4.0	5.66	249.63-249.78
KS_H2	PEMA	0.152	2.0	2.83	249.46-249.70
KS_H1	PEMA	0.196	2.0	2.83	249.91-250.01
KS_G	PFO/PEMA	0.022	0.00	0.00	250.18-250.20
KS_F	PEMA	0.029	0.00	0.00	250.24-250.27
KS_E	PEMA	0.003	0.00	0.00	250.98-250.99
KS_C1	PEMA	0.127	1.40	3.13	250.96-251.23
KS_C2	PEMA	0.036	1.40	3.13	251.18-251.20
KS_D	PFO/PEMC	0.837	4.0	5.66	251.14-251.22
KS_B	PEMC	0.163	0.50	0.71	251.34-251.38
KS_A2	PFO/PEMA	0.223	1.67	2.89	251.51-251.53

Subdivision, SPCSL 2A HSR Tier 1 South, MP 230 to MP 253, Prepared by Olsson Associates

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²FQA reported values include the mean coefficient of conservatism (Mean C) and the Floristic Quality Index (FQI), Data provided by Olsson Associates

Wetland ID	Cowardin Classification ¹	Size (Acres)	FQA ²		Mile Post
			Mean C	FQI	
KS_A1	PEMA	0.029	1.67	2.89	251.51-251.52
KS_M	PFO/PEMA	0.008	0.00	0.00	252.21-252.23
KS_L	PFO/PEMA	0.096	2.50	3.54	252.24-252.28
KS_K	PEMA	0.112	0.00	0.00	252.28-252.32
KS_O	PEMA	0.038	0.00	0.00	252.96-253.01
KS_N	PEMA	0.036	0.50	0.71	252.95-253.04

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²FQA reported values include the mean coefficient of conservatism (Mean C) and the Floristic Quality Index (FQI), Data provided by Olsson Associates

Table 5. Wetland Impacts

Wetland ID	Mile Post	Impacts*		Reason for Impact
		Temporary	Permanent	
KS-R	237.46-237.49		0.039	Cut
KS_P1	237.58-237.62	0.083		Potential impact within ROW
KS_P2	237.63-237.73	0.099	0.039	Potential impact within ROW/Fill
KS_Q1	237.59-237.87		0.124	Cut and Fill
KS_Q2	237.80-237.86	0.067		Potential impact within ROW
MP-8	238.52-238.86		0.215	Cut and Fill
CT_28	239.38-239.40	0.036	0.001	Fill
Ct-b-day4	240.78-241.06		0.119	Fill
DP_A	243.49-243.50		0.028	Cut
DP_B	243.59-243.60		0.006	Cut
DP_C	244.06-244.08		0.011	Cut
MP-9A	243.53-243.54		0.009	Fill and Culvert Replacement
MP-9B	244.20-244.28		0.030	Cut and Fill
MP-9C	244.30-244.31		0.005	Fill and Culvert Replacement
MP-9D	244.33-244.46		0.058	Fill
DP_D	244.21-244.22	0.082	0.100	Potential impact within ROW/Fill and Culvert Replacement
DP_E	244.49-244.50		0.003	Fill
MP-10A	244.90-244.92		0.013	Cut and Culvert Replacement
MP-10B	244.86-245.38	0.177		Fill
MP-10C	244.86-245.38		0.145	Cut
DP_F	244.78-244.80		0.037	Fill
DP_G	244.84-245.65	0.680	0.018	Potential impact within ROW/Culvert Replacement
DP_H	244.99-245.10		0.037	Fill
MP-11	246.13-246.61	0.025	0.003	Potential impact within ROW/Fill and Culvert Replacement
MP-12A	246.20-246.23	0.011	0.013	Potential impact within ROW/Fill
MP-12B	246.50-246.64	0.334	0.373	Potential impact within ROW/Fill
DP_I	247.27-247.35	0.242	0.143	Potential impact within ROW/Fill and Culvert Replacement

**The impacts are based on UPRR 30% Preliminary Plans dated May 14, 2012 and are subject to change as new Design Plans become available. Highlighted cells indicate no impacts. This table includes impacted wetlands only.*

Wetland ID	Mile Post	Impacts*		Reason for Impact
		Temporary	Permanent	
DP_L	247.39-247.42	0.017		Potential impact within ROW
DP_J	247.45-247.50	0.036	0.055	Potential impact within ROW/Fill and Culvert Replacement
DP_K	247.50-247.50	0.008	0.013	Potential impact within ROW/Fill and Culvert Replacement
DP_N	247.53-247.56		0.044	Cut and Fill
DP_M	248.44-248.54		0.150	Cut and Culvert Replacement
DP_O	248.44-248.49	0.030	0.054	Potential impact within ROW/Cut and Culvert Replacement
DP_P	248.59-248.62		0.018	Cut
MP-13	249.11-249.22		0.163	Fill
KS_I2	249.27-249.38		0.144	Fill
KS_I1	249.43-249.44	0.059	0.013	Potential impact within ROW/Fill
KS_J1	249.46-249.50	0.060		Potential impact within ROW
KS_J2	249.51-249.61	0.093	0.003	Potential impact within ROW/Fill
KS_J3	249.63-249.78	0.396		Potential impact within ROW
KS_H2	249.46-249.70		0.152	Fill
KS_H1	249.91-250.01		0.196	Cut and Fill
KS_G	250.18-250.20	0.022		Potential impact within ROW
KS_F	250.24-250.27		0.029	Cut
KS_E	250.98-250.99		0.003	Cut
KS_C1	250.96-251.23	0.022	0.0940	Potential impact within ROW/Cut and Culvert Replacement
KS_C2	251.18-251.20	0.030		Potential impact within ROW
KS_D	251.14-251.22	0.098	0.009	Potential impact within ROW/Fill and Culvert Replacement
KS_B	251.34-251.38	0.001	0.063	Potential impact within ROW/Cut and Fill
KS_A2	251.51-251.53		0.048	Fill and Culvert Replacement
KS_A1	251.51-251.52		0.001	Culvert Replacement
Total Impacts		2.708	2.821	

*The impacts are based on UPRR 30% Preliminary Plans dated May 14, 2012 and are subject to change as new Design Plans become available. Highlighted cells indicate no impacts. This table includes impacted wetlands only.

Mitigation

The Illinois Department of Transportation (Department) prepared a report called a *Wetlands Action Plan* indicating their plans to mitigate impacted wetlands in this Project. Compensation for unavoidable adverse wetland impacts would be coordinated with the Department's, Bureau of Design and Environment (BDE). State mitigation ratios are determined by the size of the impact (over or under 0.5 acres), Floristic Quality Index (FQI) and the location of the mitigation site (on-site, off-site, out-of-watershed, within watershed). The final mitigation measures would be decided during consultation with the appropriate agencies. The St. Louis USACE regulatory program allows for the use of ratios in determining the amount of compensation required when there is a difference between the kind of aquatic resource being impacted and the kind of mitigation being required. Ratios must be based on an identifiable rationale (e.g., use of an assessment methodology, rationale based on a regional aquatic resource context, or a case-by-case rationale briefly described in the decision document). Other factors affecting mitigation ratios include temporal losses between the time of impact and the time the mitigation site achieves a fully functional level and the likelihood of mitigation success. All use of ratios should be to ensure that the underlying policy of offsetting the authorized impacts will occur (See Appendix K for the Biological Resource Memorandum, February 6, 2013).

3.5 Prairie Vegetation

Three reports were reviewed in the evaluation of the prairie vegetation present along the UPRR from Shipman to Godfrey: 1) The Illinois Natural History Survey (INHS) report titled *Inventory of Roadside Prairies, Illinois Department of Transportation, District 6*, prepared by William Handel (2003); 2) The INHS report titled *Inventory of Roadside Prairies, Illinois Department of Transportation, District 8*, prepared by William Handel (2004); and 3) The INHS report titled *High-Speed Rail Chicago to St. Louis-Shipman to Godfrey (Tier 1) & Auburn to Shipman (Tier 2) Botanical Survey-Sangamon, Macoupin and Madison Counties*, prepared by William Handel (2012). The presence of prairie remnant locations was confirmed in the field by Quigg Engineering Inc. (QEI) in the fall of 2011.

The natural quality of each site within the 2003 and 2004 INHS reports was assessed and assigned a letter value of A, B, C, or D, with A representing the highest quality, least disturbed vegetation. In the 2012 Report, the natural quality of each site was assessed and assigned one of five classes: 1, 1/2, 2, 2/3 or 3, with 1 representing the highest quality, least disturbed vegetation. These values correspond, according to Handel (2003), as follows: Class 1= A or B, Class 2= C, and Class 3= D.

In the 2003 INHS document, two prairie remnants were identified within the Project study limits. The INHS report identified a 3.7 mile, 82-foot wide prairie remnant north of Shipman labeled as Site 27. This prairie remnant was graded as an "A-B" quality prairie due to the number of conservative species present and a moderate to low abundance of exotic species. This prairie was reevaluated in the 2012 INHS Report and was considered to be four separate prairie remnants (Site 18-21). The quality of Site 18 and 20 was assessed as Class 2/3, the quality of Site 19 was assessed as Class 2, and the quality of Site 21 was assessed as Class 3.

The second prairie identified in Handel's 2003 INHS report is a 0.3 mile, 98-foot wide prairie remnant north of Brighton labeled as Site 26. This prairie remnant is graded as a "D" quality prairie, and is a highly degraded, low quality prairie with exotic species dominating portions of the remnants. Since it

was not identified in Handel's 2012 INHS document, the prairie is considered to no longer exist at this location.

Handel's 2004 INHS document identified one prairie remnant within the Project study limits. The report identifies the entire area in Jersey County between the UPRR ROW and Illinois Route 267 as mowed prairie. It is considered prairie habitat due to the presence of conservative species which remained out of the reach of mowers. Since it was not identified in the 2012 INHS document, the prairie is considered to no longer exist at this location.

The 2012 INHS document identified an additional 0.75 acre prairie along the west side of the tracks north of Plainview (Site 17). The quality of Site 17 was assessed as Class 2/3.

None of the prairie remnants are part of an Illinois Nature Preserve or Illinois Natural Area Inventory Site according to the IDNR. Each prairie remnant mentioned above is further described in Table 6 with the most current data available.

Potential Impacts

The No-Build Alternative would result in no direct removal of native vegetation within or adjacent to the right-of-way (ROW). Native vegetation within the ROW will be allowed to exist, subject only to standard mowing, clearing and herbicide treatment consistent with current ROW management. Native prairie remnants will remain unprotected.

The Build Alternative would impact native prairies along the railroad ROW. There are five prairies located within the Project limits that have the potential to be impacted. Table 7 lists the temporary and permanent impacts for each prairie. The impacts include fill and cut areas within the UPRR ROW. Appendix I, Environmental Resources Map, illustrates the locations of each prairie:

The 2003 FEIS did not indicate any prairie remnants within the Project Limits.

Table 6. Prairie Remnants located from Shipman to Godfrey and their Ecological Impact

Original Site Number ^a	Updated Site Number ^b	Size (acres)	Mile Post ^c	Class	Type of Prairie	Potential Endangered/Threatened Species	Species Identified ^d
	17	0.75	231.24-231.30	2/3	dry glacial drift prairie	Ground Plum (<i>Astagalus crassicaarpus</i>)	no
	18	1.11	234.49-234.91	2/3	dry mesic prairie	Virginia Bunchflower (<i>Melanthium virginicum</i>)	yes
	19	3.06	235.03-235.63	2	dry mesic savanna	Virginia Bunchflower (<i>Melanthium virginicum</i>)	no
	20	2.09	236.27-236.45	2/3	dry mesic prairie and savanna	Savanna Blazing Star (<i>Liatris scariosa</i> var. <i>nieulandii</i>)	no
27	21	1.21	236.67-236.81 & 236.95-237.19	3	dry mesic prairie	None	no

^a INHS (2003). *Inventory of Roadside Prairies, Illinois Department of Transportation, District 6, prepared by William Handel.*

^b INHS (2012). *High-Speed Rail Chicago to St. Louis-Shipman to Godfrey (Tier 1) & Auburn to Shipman (Tier 2) Botanical Survey-Sangamon, Macoupin and Madison Counties, prepared by William Handel*

^c Based on 30% UPRR Design Plans and Handel's 2012 Shapefiles

^d Endangered and Threatened species surveyed during the 2012 INHS Report

Table 7. Prairie Remnants Impact Assessment

Original Site Number ^a	Updated Site Number ^b	Size (acres)	Acres in ROW	Impacts (acres)*		Reason for Impact ^c
				Temporary	Permanent	
	17	0.75	0	0	0	Outside of UPRR ROW
27	18	1.11	0.818	0	0	No Impacts based on 30% Plans
	19	3.06	2.089	0	0	No Impacts based on 30% Plans
	20	1.21	0.601	0	0.601	Fill Area
	21	1.21	0.989	0	0.989	Cut Area

^a INHS (2003). *Inventory of Roadside Prairies, Illinois Department of Transportation, District 6, prepared by William Handel.*

^b INHS (2012). *High-Speed Rail Chicago to St. Louis-Shipman to Godfrey (Tier 1) & Auburn to Shipman (Tier 2) Botanical Survey-Sangamon, Macoupin and Madison Counties, prepared by William Handel*

^c The impacts are based on 30% UPRR Design Plans and are subject to change as new Design Plans become available.

Mitigation

To the extent practical, the Project would avoid and minimize impacts to prairie Sites 17 through 21, BDE must be notified when unavoidable impacts are known.

Per the 2004 ROD for the Chicago to St. Louis High Speed Rail Project, acre-for-acres in-kind compensation shall be provided for temporary and permanent impacts to prairie Grade C+ and above by IDOT. Of the five prairie sites in the 2012 Survey, only Site 19 is grade C+ (2) or above. The BDE Memorandum dated February 6, 2013 recommends that any compensation for impacts to Site 19 be combined with the impacts to high quality prairie within the Tier 2 project from MP 203 to MP 230.

In 2013 and 2014, the BDE will re-survey the class of 1, 1/2 and 2 prairie sites for the presence of federal and state listed species of plants, including the prairie fringed orchid (*Platanthera leucophaea*).

3.6 Threatened and Endangered Species

The U.S. Endangered Species Act (ESA) of 1973, as amended, provides protections for those species that are listed as threatened or endangered under the ESA. The Act grants the U.S. Fish and Wildlife Service (USFWS) the responsibility in administering the species designations and protections under the ESA. The term "endangered" means a species is in danger of extinction throughout all or a significant portion of its range. The term "threatened" means a species is likely to become endangered in the foreseeable future.

The Illinois Endangered Species Act (IESA) of 1972 provides protection for Federal and Illinois species listed as threatened and or endangered under the ESA and IESA. The Illinois Endangered Species Protection Board is responsible for listing and administering the species designations for Illinois species. "Endangered Species" under the Illinois Act means any species of plant or animal classified as endangered under the Federal Endangered Species Act of 1973, plus such other species the Board may list as in danger of extinction in the wild in Illinois due to one or more causes including but not limited to the destruction, diminution or disturbance of habitat, overexploitation, predation, pollution, disease, or other natural or manmade factors affecting its prospects of survival. The IESA defines "threatened species" as any species of plant or animal classified as threatened under the Federal Endangered Species Act plus such other species which the Board may list as likely to become endangered in the wild in Illinois within the foreseeable future.

The USFWS initially identified the following threatened/endangered species within the Project limits.

- Jersey County: Indiana bat (*Myotis sodalis*) and decurrent false aster (*Boltonia decurrens*)
- Madison County: Indiana bat (*Myotis sodalis*), least tern (*Sternula antillarum*), pallid sturgeon (*Scaphirynchus albus*), spectaclecase mussel (*Cumberlandia monodonta*), decurrent false aster eastern fringe orchid (*Platanthera leucophaea*).
- Macoupin County: Indiana bat (*Myotis sodalis*) and eastern prairie fringed orchid (*Platanthera leucophaea*)

The IDNR had occurrence records for two state-listed plant species; Blazing Star (*Liatris scariosa* var. *nieuwlandi*) and Bunchflower (*Melanthium virginicum*).

Potential Impacts

The No-Build Alternative threatened and endangered species and their habitats will not be directly affected. Wildlife habitat will remain in its present condition, subject to the influences of future maintenance activities that include the removal of woody species and the application of herbicide to vegetation within 15 meters (50 feet) of the edge of track. There will be no alteration of existing plant communities by construction. However, track maintenance will continue to affect the adjacent vegetation, and existing successional trends will continue until modified by future maintenance or development, if any.

The Build Alternative may affect habitat of the Indiana bat, blazing star, bunchflower, and eastern prairie fringed orchid. They are described in the following sections. Illinois Department of Transportation (Department) has determined, in their Biological Resources Review (February 6, 2013), the habitat within the Project limits was not suitable for least tern, pallid sturgeon, spectaclecase mussel, and decurrent false aster; therefore, these species will not be impacted.

Field surveys were conducted in September 2011 for Federal and State species with potential habitat within the study area. Field surveys were conducted for the presence of the federally-listed Decurrent False Aster (*Boltonia decurrens*) and Eastern Prairie Fringed Orchid (*Platanthera leucophaea*). Fall field studies did not find the federally-listed plants and concluded the plants do not exist in the study area due to lack of favorable habitat requirements.

The Illinois Natural History Survey (INHS) conducted vegetation survey titled *High-Speed Rail Chicago to St. Louis-Shipman to Godfrey (Tier 1) & Auburn to Shipman (Tier 2) Botanical Survey-Sangamon, Macoupin and Madison Counties*. (Handel, 2012). Spring INHS vegetation surveys resulted in identification of two populations of the Illinois listed Bunchflower and Blazing Star at the north limits of the Project corridor. The state listed species Blazing Star and Bunchflower were not found during the September 2011 field work. Spring 2012 vegetation surveys resulted in identified populations of Bunchflower and Blazing Star in the northern limits of the Project. Per the Department's Biological Resources Review (BRR) Memorandum of February 6, 2013, the BDE will re-survey the class 1, 1/2 and 2 prairie sites for the presence of federal and state listed species in 2013. (See Appendix K for the BRR Memorandum.)

Indiana Bat

Quigg Engineering, Inc. (QEI) conducted a bat habitat survey in September 2011 to review three potential habitats for Indiana bat: 1) the woods at Miles Station between MP 242.39 and MP 242.89); 2) on the east side of the UPRR tracks, between MP 234.00 and MP 230.00 where the alignment crosses Macoupin Creek and May Branch of Macoupin Creek; and 3) where the alignment crosses Coop Creek at MP 236.00.

Location 1

Indiana bat habitat occurs in the forested lands located at Miles Station (MP 242.39 and MP 242.89) on the east side of the UPRR tracks. Two areas of ROW within the Miles Station forested areas are proposed to be acquired to reconstruct culverts at MP 242.50 and MP 242.80. The two culvert locations are situated in a large tract of woods and discharge flows from two secondary branches of Honey Cut Creek. The tree canopy in these two locations along the streams is approximately 60 percent canopy

enclosed. Canopy height ranges between 25 to 30 feet above the stream channel. Eleven tree snags were identified within the forested sections of the woods within the limits of proposed ROW.

These two culvert locations where the ROW is proposed to be acquired would require the clearing of approximately 1.23 acres of trees at MP 242.50 and 0.86 acres of trees at MP 242.80 in order to reconstruct the two culverts.

Location 2

Indiana bat habitat occurs between MP 234.00 and MP 230.00 where the alignment crosses Macoupin Creek and May Branch of Macoupin Creek. The tree canopy in these two locations along the streams is approximately 60 percent canopy enclosed. Canopy height ranges between 25 to 30 feet above the stream channel. Tree species within the forested area provide adequate roosting sites for the Indiana bat. Therefore, it was determined that the forestland located between MP 234 and MP 230 has potential habitat for the Indiana bat.

Location 3

Indiana bat habitat occurs where the alignment crosses Coop Creek at MP 236.00. Tree species and the forest vicinity to an open secondary stream provide adequate roosting sites and feeding opportunities for the Indiana bat. Therefore, the forested area was determined to have potential habitat for the Indiana bat.

Appendix 2 of the Indiana Bat Draft Recovery Plan: First Revision (2007) lists one extant maternity colony for Jersey (Brainerd Cave) and Macoupin counties. Brainerd Cave is located 16 miles west of the UPRR tracks. There is one record of a 1987 capture of the Indiana bat 1.3 miles west of the UPRR tracks over Macoupin Creek (INHS 2010).

As stated in the 2003 FEIS, additional coordination will be conducted with the USFWS and the IDNR to assure that the proposed project will minimize or avoid impacts to protected plant and animal species during project construction, operation, and maintenance. This effort will include an agency consultation process and will be coordinated with and incorporate mitigation measures developed for both wetland and native vegetation impacts.

In addition, the BDE Biological Resource Review proposed two commitments to protect threatened and endangered species. The first commitment requires that there will be no tree clearing in these locations between the time periods of April 1 and September 30 when bats are likely to be present. Provided the clearing dates are adhered to, there would be no impact to the Indiana bat. The second commitment requires the BDE to re-survey the class 1, 1/2, 2 prairie sites for the presence of federal and state listed species of plants in 2013 and 2014. This commitment will ensure that sensitive species are not present in the Project limits (See Appendix K for Biological Resource Review Memorandum, February 6, 2013).

3.7 Agricultural Land

The Federal Farmland Protection Policy Act (FPPA), 7 U.S.C. 4201 – 4209 and the Farmland Protection Policy Act, 7 CFR 658, both state that during the development of a project, consideration must be given to the impacts that the action will cause in the conversion of farmland to non-farm use. Enacted by the U.S. Congress in 1981, the FPPA directs federal agencies to evaluate their programs and projects and to modify their actions so as to produce the least impact on farmland. The FPPA also directs federal programs, to the extent practicable, be compatible with state and local government and private programs and policies to protect farmland.

The Farmland Preservation Act (505 ILCS 75/1, *et seq.*) and State Executive Order No. 4 (1980), “Preservation of Illinois Farmland”, require state agencies to consider farmland conversion in the planning and execution of their programs and projects. The Illinois Department of Agriculture (IDOA) was legislatively directed to review all state agency projects and activities that may have a direct or indirect effect upon potential conversion of Illinois farmland.

The Illinois Department of Transportation, Agriculture Land Preservation Policy; the Cooperative Working Agreement between the Illinois Department of Agriculture and the Illinois Department of Transportation on Farmland Preservation; and 8 Ill. Adm. Code 700, *Farmland Preservation Act* are the additional legal authorities regulating or influencing the policies and procedures on farmland conversion of Illinois Department of Transportation (Department) projects.

Potential Impacts

The No-Build Alternative would not result in use of agricultural land and therefore would have no impacts to agricultural lands.

Approximately 14.7 acres of agricultural land would be affected by the Build Alternative from construction activities within the vicinity of the Shipman to Godfrey portion of the Chicago to St. Louis High Speed Rail project, including land within Macoupin, Jersey, and Madison counties. Agricultural land acquisition would occur throughout the 20.10 miles of the Project, with the bulk of land acquisition occurring in Macoupin County. Approximately 13 acres (or 89 percent) of the total 14.7 acres, of agricultural land acquisition would be in Macoupin County. Approximately 0.25 acres and one acre would be acquired in Madison and Jersey counties, respectively. Overall, 0.66 agricultural acres per project mile (including Macoupin, Jersey, and Madison counties) would be permanently affected by construction activities.

The 14.7 acres of agricultural land impacted would include 18 different soils. The soil capabilities range from Class 1 to 3 soils. Soils classified as 1 have slight limitations restricting their use for field crops. Soils classified as 2 have moderate limitations restricting the choice of plants or require moderate conservation practices. Soils classified as 3 have severe limitations restricting the choice of plants or require special conservation practices, or both. In classes 2 and 3, the “e” and “w” subclass designations apply. Subclass e refers to erosion hazards while subclass w refers to water in or on the soil, both describing characteristics limiting planting options and dictating management practices. In class 1, there are no subclasses because the soils of this class have few limitations.

Mitigation

Due to the affected agricultural land's proximity to the current UPRR ROW there would be no severed farm units, severance management zones, uneconomic remnants, landlocked parcels, or adverse travel conditions created. Siding, access road, and track construction would not affect agricultural zoning or affect any known agricultural protection areas. Minimal adverse effects may include agricultural income loss and irreversible and irretrievable commitment of agricultural resources along the UPRR ROW in Macoupin, Jersey, and Madison counties due to acquisition of 0.66 acres of agricultural ground per project mile.

As part of the Build Alternative, the closure of a grade crossing (at MP 246.85) would change access to one farmhouse. The current crossing provides access across the tracks from Illinois Route 111 (S. Maple) to a farmhouse, via an unpaved driveway approximately 0.14 mile long. New access to the farmhouse would be via Conrad Road. A new driveway, approximately 0.17 miles long, would be required to connect to Conrad Road.

Per Department policy and the Farmland Preservation Act (505 ILCS 75/1, *et seq.*), coordination was initiated with the Illinois Department of Agriculture (IDOA) to obtain the Agency's opinions and concerns. In addition, the impact of this Project on farmland conversion has been evaluated in accordance with the requirements of the United States Natural Resources Conservation Service (NRCS). The Project would convert three acres or less of farmland per mile and the conversion would not result in more than minor impacts. The Project was coordinated with the NRCS using Form AD-1006 due to multi-county involvement. The IDOA and NRCS have no objections to the Project (See Appendix K for copy of the AD-1006 Form). County level agricultural agencies including Soil and Water Conservation Districts, County NRCS offices, and local Farm Bureau Managers were contacted to provide a chance to comment on the Project. Table 8 lists the coordination completed to date.

Table 8. County Level Agricultural Agency Coordination

Contact Person	Agency	Response (Y/N)	Comments
Dan Steinmann	Madison County NRCS	Yes	No comments. Comments received from October 4, 2012 electronic correspondence and letter dated October 11, 2012
Tom Jett & Steve Koeller	Madison County Farm Bureau	Yes	T. Jett forwarded request for comments to Farm Bureau President in Madison County (S. Koeller). Comment received from electronic correspondence October 1, 2012. No response from S. Koeller
Rick Macho	Madison County SWCD	Yes	Indicated the need for NPDES permits and that he is responsible for NPDES inspections on behalf of IEPA. Comments received from telephone conversation September 21, 2012

Contact Person	Agency	Response (Y/N)	Comments
Crystal Nance	Jersey County NRCS	Yes	No comments. Comments received from electronic correspondence October 2, 2012.
Stephanie Knittel	Jersey County Farm Bureau	Yes	No comments. Comments received from electronic correspondence October 2, 2012 and October 10, 2012.
Jeff Blackorby	Jersey County SWCD	No	No comments received
Jeremy Jackman	Macoupin County NRCS/SWCD	Yes	Forwarded to acting District Conservationist and AC. Brad from Macoupin County has no comments. Comments received in electronic correspondence from J. Jackman dated October 1, 2012 and from an October 4, 2012 telephone conversation with Brad from Macoupin County NRCS
Mark Dugger	Farm Bureau	No	No comments received

3.8 Floodplains

Federal protection of floodplains is afforded by Executive Order 11988, "Floodplain Management," and by implementation of federal regulations under 44 CFR Part 9. These regulations direct federal agencies to undertake actions to avoid impacts on floodplain areas by structures built in flood-prone areas. A floodplain is a low land adjacent to a river, lake, or ocean. Floodplains are designated by the rarity of the flood that is large enough to inundate them (i.e., 10-year, or 100-year).

Listed below are FEMA FIRM MAP panels within the study area.

- Panel 1709300005A in Macoupin County: The existing rail and proposed double track crosses Macoupin Creek. The crossing area is indicated as **Zone A** (special flood hazard area).
- Panel 17083C0225D in Jersey County unincorporated and incorporated areas: The study area is located in **Zone X** Areas - Other Flood Areas, area of 0.2 percent (500-year) annual chance flood; areas of one percent (100-year) annual chance flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from one percent annual chance flood.
- Panel 1704360125B and Panel 1704360145B in Madison County: The study area is located in **Zone C** which is identified as Areas of Minimal Flooding.

Potential Impacts

The No-Build Alternative would result in no impacts to floodplains.

The 2003 Final Environmental Impact Statement (FEIS) for the Original Project stated that, no work will be performed below the 100-year flood elevation and no encroachment will occur on the base

floodplain elevation. However, design has progressed since the 2003 document and there would be localized floodplain impacts below the base flood elevation associated with work near Macoupin Creek overflow structures. This work would require an IDNR permit and impacts would be mitigated as described below.

Permits

A stormwater permit would be required for all hydraulic structures. A permit would also be required from the U.S. Army Corps of Engineers (USACE) 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. Culvert replacements and extensions required for Project construction are anticipated to comply with the IDNR OWR Statewide Permit, which does not require the permit application to be filed if certain construction requirements are met, as detailed in IDNR Statewide Permit 12. The IDNR OWR permit process includes floodplain considerations.

Mitigation

Areas where temporary floodplain impacts occur would be restored following Project construction. Permanent impacts would require proper sizing of hydraulic structures and compensatory storage where required.

3.9 Energy Use

The No-Build Alternative would not require any construction. Therefore, no changes in energy consumption area expected.

Construction of the proposed improvements would require indirect consumption of energy for processing materials, construction activities and maintenance within the Project limits. Energy consumption by vehicles in the area may increase during construction due to possible traffic delays or temporary day time closures.

The proposed improvement would increase the efficiency of the current transportation network by providing a more balanced use of the overall transportation network and enhancing the passenger rail component of the network. This would result in less direct and indirect vehicular energy consumption for the Build Alternative than the No-Build Alternative. Thus, in the long term, post-construction operational energy requirements should offset construction and maintenance energy requirements and result in a net savings in energy usage.

3.10 Transportation

3.10.1 Projected Ridership

Projected ridership was developed using mode diversion models that have been previously used in other passenger rail forecasting studies in the U.S. and was adopted for the Chicago to St. Louis corridor.

Based on initial ridership estimates, passenger rail ridership will account for 2.8 percent of all trips between Chicago and St. Louis in 2030 compared to 1.7 percent under the existing condition. This

increase in ridership would allow the High Speed Rail to fully meet the Purpose and Need of the program.

Rail passenger travel time between Chicago and St. Louis would be between 3 hours and 51 minutes and 4 hours and 10 minutes. This compares to the overall travel times anticipated in the 2004 ROD of a minimum of 4 hours and 30 minutes. The HSR improvements could result in an additional 35 to 39 minutes travel time savings compared to that previously anticipated. Travel times would be lessened by up to one hour and 47 minutes compared to current Amtrak schedules. Capacity improvements provided will allow for increased train frequencies and improved reliability.

Annual ridership estimates were developed for the proposed HSR. Anticipated changes in ridership estimates are based on travel times, reliability and frequency of service, and connections to other modes of transportation.

Table 9 lists the projected annual person trips for the four modes of intercity travel in the corridor for this Project.

**Table 9. Existing (2010) and Projected (2030) Annual Person Trips (1,000's)
in the Chicago-St. Louis Corridor**

Mode	Existing Trips	Percent	Proposed Trips	Percent
Rail	641,587	1.3	1,707,109	2.7
Air	542,751	1.1	826,284	1.3
Bus	99,809	0.2	120,366	0.2
Auto	49,440,179	97.5	59,547,865	95.7
Total	50,724,326	100	62,201,624	100

3.10.2 Freight Traffic

Construction of the High Speed Rail (HSR) service within the study area is not expected to result in a change in the number of freight trains operating daily. However, its construction would have a positive effect on freight capacity with implementation of the proposed improvements. Provision of the proposed freight sidings and improvements to existing sidings within this study area would address any impacts to freight service that might result from operating passenger trains at higher speeds. An increase in the number of freight trains is projected with completion of the Union Pacific intermodal yard south of Joliet, Illinois.

Modifications to the freight train schedule would be required to prevent conflicts with passenger rail service. The increased frequency of passenger trains would further restrict rail time available for freight movements. Since high speed rail operations would occur primarily during the daytime, coordination with the host railroads would be required to determine if the routing of freight trains could occur outside of the peak intercity passenger periods. The freight carrier would have to agree to the shift.

Additional double track and freight sidings would be required so that future high speed trains can meet and pass other high speed trains and freight trains operating in the corridor without slowing down. This capability is essential if predicted travel times are to be met. The HSR alternative evaluated in the FEIS included the construction of 12 to 26 miles of double track and 25 to 27 miles of freight siding.

In this study area, one area was identified for new double track, between MP 238.65 in Shipman and MP 249.30 in Godfrey.

3.10.3 Impacts on Railroad Operations

No changes will be required to existing freight operations and to existing commuter rail service in the Chicago area. Future commuter rail service is assumed to be the same as existing service. Outside of the Chicago area, no other commuter rail service operates in the corridor.

Construction activities for the High Speed Rail (HSR) improvements would affect rail traffic by reducing operating train speeds through the construction zone, which would increase rail travel time and, in turn, cost. This would occur when adding new siding tracks, double-tracks and connection tracks, upgrading signals, and modifying grade crossings.

Another impact would be schedule adjustments for existing operations to create windows of opportunity for temporary shutdown of rail operations on selected track sections when the new turnouts are being placed for the passing sections and new sidings, or when there is a potential safety risk, such as during the construction of a flyover.

As a result of this Project, Rail passenger travel time between Chicago and St. Louis will decrease to between 4 hours and 4 hours and 30 minutes. Rail communication and signal systems would be upgraded, improving reliability and on-time performance.

Schedule adjustments would be required when construction activities would either directly impact the mainline track, such as when the new turnouts are being placed for the passing sections and new sidings, or when there is a potential safety risk, such as during the construction of a highway bridge superstructure over the tracks. Some of these activities may require up to eight hours of continuous track closure.

3.10.4 Impacts to Vehicular Operations

Under the No-Build Alternative there would be no impact to existing vehicular operations. No modifications to the existing grade crossing in the corridor are proposed.

Implementation of the grade crossing treatment recommendations would impact vehicular traffic within the study area. However, the impact would be limited to low volume roads because almost all major high volume roads that were built or substantially upgraded have grade separated such crossings.

Within the study area there are six crossings recommended for closure. However, no crossings would be closed before an agreement is reached with the local agency having jurisdiction over the crossing or,

in the case of private crossings, the crossing owner would be notified. Table 10 below shows grade crossings that would be closed and the nearest crossing away.

Table 10. Public and Private Crossings Recommended for Closures

Mile Post (MP)	Public or Private Crossing	Road Crossing	Jurisdiction	County	Nearest Crossing (Miles)
234.57	Public	Gilworth Lane	Hilyard Township	Macoupin	0.52
235.57	Private	Private Farm Crossing	Private Farm/Near Carlinville	Macoupin	1.25
236.82	Private	Private Farm Crossing	Private Farm/Near Shipman	Macoupin	0.38
237.57	Private	Private Farm Crossing	Private Farm/Near Shipman	Macoupin	0.73
246.85	Private	Private Farm Crossing	Private Farm/Near Brighton	Jersey	1.12
250.18	Private	Private Farm Crossing	Private Farm/Near Collinsville	Madison	0.8

3.10.5 Station Access

There are no Amtrak stations within the study area. Travelers wishing to ride on an Amtrak train need to travel to the nearby communities of Carlinville or Alton. Carlinville is 15.48 miles north of Shipman and 33.09 miles North of Godfrey. Alton is 22.56 miles South of Shipman and 5.90 miles South of Godfrey.

3.10.6 Safety

Under the No-Build Alternative the number of accidents occurring at the existing grade crossings may increase as more people use these routes. Slow moving trains in urban areas may interfere with emergency vehicle response times in the surrounding areas, especially where emergency response stations are located in areas where grade rail crossings are frequently blocked.

In the 2003 FEIS, accidents were estimated for all grade crossings in the proposed High Speed Rail (HSR) corridor. The purpose of that analysis was to determine the potential effectiveness of the grade crossing treatments.

Overall passenger safety in the corridor will increase as travelers divert from automobile to rail since rail is a safer mode of travel. The Build Alternative would reduce the predicted number of accidents occurring at the existing grade crossings because the overall accident exposure would be reduced as people change travel modes. In addition, with the proposed grade crossing protective safety treatments, crossings at grade would be better controlled thereby improving safety at the grade crossings.

Mitigation

In order to enhance safety in the corridor, fencing would be considered within many of the urbanized areas. Within the study area, based on *UPRR 30 Percent Preliminary Plans*, proposed fencing is shown at the following locations:

- MP 234.05 Plainview, Illinois
- MP 237.90 to MP 238.70 Shipman, Illinois
- MP 242.90 to MP 243.30 Miles Station Road, Illinois
- MP 245.30 to MP 246.25 Brighton, Illinois
- MP 248.45 to MP 248.75 David Acres Road, Illinois
- MP 250.70 to MP 251.00 Bethany Lane, Illinois
- MP 251.80 to MP 252.30 Godfrey, Illinois
- MP 252.50 to MP 252.80 Godfrey, Illinois

Where fencing is proposed it would be designed to provide the best possible protection to discourage trespassing and to direct pedestrians to a nearby warned crossing, usually within one block of the existing crossing.

3.10.7 Impacts on Vehicular Traffic

No construction would occur with the No-Build Alternative.

Vehicular traffic would be temporarily impacted to varying degrees at locations where grade crossings are modified or improved. The grade crossing improvements would, at a minimum, require traffic to slow down as it passes through the construction zone while new warning devices and other improvements are installed. In some cases, temporary diversion of traffic to adjacent crossings may be required.

These impacts to vehicular traffic could affect emergency services, schools, businesses, local festivals, and other activities requiring vehicular access. However, all construction related impacts on vehicular traffic would be temporary. Traffic maintenance planning would be coordinated with schools and emergency service providers.

3.11 Land Use

3.11.1 Affected Environment

Construction of the rail network created the growth of numerous communities that served as regional centers for the collection and distribution of goods for a rich agricultural region. The influence of the railroad remained strong until interstate highways joined the transportation system in the 1950s and 1960s. In contrast to the railroads, which created new communities along their length to maintain and support the railroads, interstate highways were constructed around, and often bypassed some communities. Because the interstates had limited points of access, county roads that connected with or crossed over them linking existing communities, became particularly important to the rural areas. As the economy of the region and the nature of agribusiness have changed, both highways and railroads have remained important elements of community life.

The population, land uses, building density, and the local transportation system distinguish the regional centers from the rural communities. The regional centers also typically have a wide range of agricultural, commercial and industrial services and suppliers, and provide medical facilities and opportunities for higher education not available in the smaller rural communities. The majority of the existing Amtrak railroad corridor in this study area has a single track; the number of tracks varies by the ownership arrangements on each line section.

Existing land use in this study area is described by county.

Macoupin County

The study area extends for approximately 17 miles in Macoupin County, passing through mostly agricultural areas, as well as rural communities, including the unincorporated communities of Plainview and Shipman, and the eastern portion of the Village of Brighton. Currently no zoning ordinances exist for Macoupin County or these communities.

Jersey County

The study area extends for less than 3.0 miles in unincorporated areas and the western portion of the Village of Brighton located near the southeast corner of Jersey County. Land use within Jersey County is predominantly agricultural as well as rural communities. Currently no zoning ordinance exists for Jersey County or the Village of Brighton.

Madison County

The study area extends for approximately 4.5 miles in Madison County, passing through the Village of Godfrey. The Village of Godfrey has mixed zoning along the study area generally consisting of business, residential, and manufacturing zoned areas. (Refer to Appendix C for additional zoning detail) The Lewis and Clark Community College located in Godfrey is a main focal point of the community and is located near the railroad. Much of the land use in Madison County is primarily residential with some small agricultural fields in the unincorporated areas along the study area.

The No-Build Alternative would not have any impact on the existing land uses in the study area.

The general scope of the proposed work is to improve the UPRR to provide HSR service within the study area. The Project would consist of upgrading existing tracks, adding a second mainline track, constructing turnouts, and improving existing grade crossings between MP 230 to MP 253. The land uses in the study area would remain and not be affected by the Build Alternative.

3.11.2 Environmental Consequences

The principal concerns of rural and small communities are of road closures. Examples of local concerns about closing highway-railroad crossings include: increased travel distance and time, particularly for emergency and school bus services; traffic and physical changes to crossings that remain open; changes in access to homes and businesses; barriers to community growth; and changes to existing traffic patterns. The No-Build Alternative would not cause any changes to grade crossings as currently exist. Over time, changes to grade crossings may occur as precipitated by the Illinois Commerce Commission (ICC), Illinois Department of Transportation, the operating railroad or the local community. However, any of these changes would be separate from the Build Alternative.

All of the grade crossings in the Original Project were evaluated as part of the EIS process. The approach to analyze grade crossing treatments and make recommendations was intended to be responsive to these concerns described above and to minimize impacts. As part of the Build Alternative for the HSR corridor, less than eight percent of the crossings are proposed for closure; many of these crossings serve pedestrians only. When identifying which grade crossings to close, only those on lower volume roadways were selected; none has an average daily traffic (ADT) count greater than 1,200 vehicles. In all instances where crossing closures are proposed, adequate reserve capacity exists on the adjacent crossings to handle the diverted traffic. For the Project study area, only six grade crossings are impacted, and only one of those is a public vehicular grade crossing.

Refer to Table 11 for information on existing grade crossings, including milepost locations, and existing and proposed warning devices within the study area.

**Table 11. Existing Grade Crossings within the Study Area
Showing Existing and Proposed Warning Devices**

Updated Mile Post	Street	County	Existing Warning Device	Proposed Warning Device
230.09	Private Farm Crossing	Macoupin	None	Upgrade to quad gates from none existing
231.02	TR234	Macoupin	Crossbucks	Upgrade to quad gates from existing crossbucks with yield signs
234.05	CR10	Macoupin	Flashing lights	Upgrade to quad gates with sidelights from existing conventional gates (new)
234.57	TR238	Macoupin	None	Public closure candidate
235.57	Private Farm Crossing	Macoupin	None	Private closure candidate
236.82	Private Farm Crossing	Macoupin	None	Private closure candidate
237.20	Private Crossing	Macoupin	None	No change from none existing
237.57	Private Farm Crossing	Macoupin	None	Private closure candidate
238.10	Private Farm Crossing	Macoupin	None	Closed
238.30	Kealing Street	Macoupin	Gates	Upgrade to quad gates with sidelights from existing conventional gates
239.89	TR 3851 Prairie Dell Road	Macoupin	Crossbucks	Upgrade to quad gates from existing crossbucks with yield signs
240.71	Private Farm Crossing	Macoupin	Flashing lights	No change from flashing light
241.30	TR 3991 Bachman Road	Macoupin	Flashing lights	Upgrade to quad gates from existing crossbucks with flashers

Updated Mile Post	Street	County	Existing Warning Device	Proposed Warning Device
242.91	TR415	Macoupin	Flashing lights	Upgrade to quad gates with sidelights from existing crossbucks with flashers and sidelights
244.26	TR32	Macoupin	Flashing lights	Upgrade to quad gates with sidelights from existing conventional gates
244.76	TR427	Macoupin	Gates	Upgrade to quad gates with sidelights from existing conventional gates
245.60	Pedestrian Crossing	Macoupin	None	No change from existing pedestrian crossing
245.85	Center Street	Macoupin	Cantilever flashing lights with gates	Upgrade to quad gates with sidelights from existing conventional gates
246.85	Private Farm Crossing	Jersey	None	Private closure candidate
247.97	Terpening Lane	Jersey	Flashing lights	Upgrade to quad gates with sidelights from existing conventional gates
248.55	TR 162A	Jersey	Gates	Upgrade to quad gates with sidelights from existing conventional gates
250.18	Private Crossing	Madison	None	Private closure candidate
250.98	Bethany Lane	Madison	Gates	Upgrade to quad gates from existing conventional gates
252.01	Pearl Street	Madison	Cantilever flashing lights with gates	Upgrade to quad gates from existing conventional gates
252.50	Tolle Road	Madison	Cantilever flashing lights with gates	Upgrade to quad gates from existing conventional gates with cantilever

Table 12 shows the proposed treatment to the grade crossings in the study area for the Build Alternative.

Table 12. Treatment of Grade Crossings for the Build Alternative

County	Closed	Closed Pedestrian	Close Public Vehicular	Close Private Vehicular	No Change	Pedestrian Bell and Flashers	Conventional Gates	Locked Gates	Quad Gates	Grade Separation
Macoupin	4	3	1	3	0	0	0	0	11	0
Jersey	1	0	0	1	0	0	1	0	2	0
Madison	1	0	0	1	0	0	0	0	3	0
Total	6	3	1	5	0	0	1	0	16	0

3.12 Property Acquisitions

The No-Build Alternative would not result in any land acquisition or require any easements for construction. All improvements will take place within existing railroad right-of-way (ROW) except for the grade separation proposed at Pontoon Road (MP 272.70).

Work within the study area as part of the Build Alternative may result in the displacement of businesses and residential properties as detailed below. The displacement of businesses or residential properties is due to their location within the right-of-way, which is needed for track or access road construction. Up to 25 buildings and structures may be displaced; these buildings and structures consist of nine residential, one commercial, ten industrial, and five other non-occupied structures. Additional details on these properties are provided in Section 3.13.10. As these areas are still in the design development phase they are subject to change. If these areas require property to be acquired, the *Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970*, as amended and all applicable laws and processes would be followed to allow for fair compensation and relocation of those displaced. The *Uniform Relocation Assistance and Real Property Acquisition Act of 1970*, as amended, apply to all federal or federally assisted activities that involve the acquisition of real property or the displacement of persons or businesses. Just compensation will be provided for the property acquisition that will be required. Both the United States and Illinois Constitutions require this. The courts have defined "just compensation" as monetary payment that is equivalent to the "fair market" value of the property. Fair market value has been defined as the highest price estimated in terms of money that the property will bring, if exposed to sale on the open market, with a reasonable time allowed to find a buyer, buying with the knowledge of all of the uses to which it is adapted, and for which it is capable of being used. The Bureau of Land Acquisition of the Illinois Department of Transportation will determine the fair market value.

As stated in Section 3.7, approximately 14.7 acres of agricultural land would need to be acquired by the Build Alternative from construction activities within the vicinity of the Shipman to Godfrey portion of the Chicago to St. Louis High Speed Rail project, including land within Macoupin, Jersey, and Madison counties. Most of the land acquisition would occur in Macoupin County.

An additional 15 acres of land would be required for temporary and permanent easements. These easements will be required primarily on residential land uses.

3.13 Socioeconomic Resources

3.13.1 Community Characteristics and Cohesion

The No-Build will not affect community characteristics and cohesion of the three communities in the study area as there will be no changes to the community structure or any new physical barriers to separate neighborhoods.

The study area of the Build Alternative extends along the UPRR from the Town of Shipman to the Village of Godfrey through Macoupin County, Jersey County, and Madison County (See Appendix A, Project Location Map). It generally follows the existing alignment and corridor of the UPRR. The Build Alternative does not propose to introduce any corridors on new alignment outside of the UPRR corridor.

In Macoupin County the corridor passes through mostly agricultural areas as well as rural communities. The corridor extends for less than three miles in mostly unincorporated areas in the southeast corner of Jersey County. Land use is predominantly agricultural, but there is some single-family residential land use. To the south, the HSR corridor extends in Madison County, passing through urbanized, incorporated communities with heavy industrial uses. The Lewis and Clark Community College is located in the Village of Godfrey adjacent to the railroad. Small agricultural fields remain active in the unincorporated areas. The Build Alternative would not have any impact to community cohesion.

It is expected that there would be an insignificant amount of community disruption with the Build Alternative. This is due to the fact that the rail corridor already exists in these communities and the travel patterns between the communities and residences on either sides of the rail corridor would not change. The only exception would be related to the proposed closing of the public grade crossing at Gilworth Lane in Macoupin County (see Table 10) which would require vehicles to reroute a half mile to the next nearest grade crossing. A change in traffic patterns would result and there could be some potential for a break in community cohesion due to the lack of access on both sides of the track, albeit relatively insignificant. However, there is no expectation that there be any demographic shifts as the result of it. During construction of the second track there would be community disruption when grade crossings are temporarily shut. However, this is only a temporary issue and would not result in permanent change to travel patterns or community cohesion.

School bus, emergency vehicle and agricultural traffic routes were considered during this Project. Because the travel patterns virtually remain the same, there would be no impacts on commercial districts or impacts on community services or revenues.

This assessment of an insignificant amount of community disruption for the revised project design is the same as stated in the 2003 FEIS. The potential for the biggest impact on rural areas and small communities is on the potential impacts of road closures and grade crossings that would impact community cohesion. However, as noted, there is only one proposed public vehicular grade crossing proposed which requires drivers to divert one half mile to the nearest grade crossing. This distance is considered relatively insignificant and not expected to disrupt the community.

3.13.2 Population, Age, Home Ownership, and Occupancy

Population

Table 13 shows that Jersey and Madison Counties grew between 2000 and 2010 similar to growth in Illinois. Macoupin County lost population during that time by 2.6 percent.

Table 13. Population Summary

Population Change	2000	2010	Percent Change
Macoupin County	49,019	47,765	-2.6%
Jersey County	21,668	55,985	3.3%
Madison County	258,941	269,282	4.0%
Illinois	12,419,293	12,830,632	3.3%

The corridor passes through the Town of Shipman (in Macoupin County), Village of Brighton (in parts of Macoupin and Jersey counties), and Village of Godfrey (in Madison County). Table 14 shows that growth between 2000 and 2010 in Shipman, Brighton, and Godfrey ranges from -4.7 percent to 10.4 percent.

Table 14. Population Growth between 2000 and 2010

Population Change	Within County	2000	2010	Percent Change
Township of Shipman	Macoupin	655	352	-4.7%
Village of Brighton	Macoupin/Jersey	2,196	2,254	2.6%
Village of Godfrey	Madison	16,286	17,982	10.4%

Evaluation of socioeconomic issues utilized data from the U.S. Census. Depending on data type, the U.S. Census provides socioeconomic information at the county, town, tract, and/or block group level. The maps in Appendices F and G show that the HSR corridor intersects with three census tracts and seven block groups.

The existing population and projected population growth will be the same for the No-Build and the Build Alternatives. Given the fact that no station area is proposed for Shipman, Brighton or Godfrey, there would be no transit oriented development (TOD) that would increase residential development and ultimately encourage population growth.

Age

Table 15 shows the percentage of elderly population by block group, which range from approximately 12 percent to 18 percent. These percentages are similar to those at the county and state levels.

Table 15. Elderly Population by Block Group

2010 Census Block Group	Age Over 65 Year Old
Block Group 1, Census Tract 9566	17.1%
Block Group 2, Census Tract 9566	12.8%
Block Group 3, Census Tract 9566	18.6%
Block Group 4, Census Tract 9566	17.7%
Block Group 2, Census Tract 102	11.8%
Block Group 1, Census Tract 4027.01	15.1%
Block Group 2, Census Tract 4027.01	17.0%
County and State Level	
Macoupin County	17.1%
Jersey County	15.7%
Madison County	14.3%
Illinois	12.5%

There will be no changes to the percentage of elderly population with either the No-Build or the Build Alternative.

Home Ownership and Occupancy

Table 16 shows home ownership rates and home occupancy rates for Shipman, Brighton, and Godfrey. Ownership rates range from 77.6 percent to 84.8 percent, which are greater than the statewide average of 69.2 percent. Occupancy rates range from 93.1 percent to 96.8 percent, which are greater than the statewide average of 90.1 percent.

Table 16. Home Ownership and Occupancy Rates

Home Ownership and Occupancy	Within County	Ownership Rate 206-2010	Occupancy Rate 2006-2010
Township of Shipman	Macoupin	77.6%	93.1%
Village of Brighton	Macoupin/Jersey	81.8%	95.4%
Village of Godfrey	Madison	84.8%	96.8%
Illinois		69.2%	90.1%

Neither the No-Build Alternative nor the Build Alternative would have any impact on home ownership and occupancy rates. The 2003 FEIS stated that since the No-Build Alternative is a continuation of existing Amtrak service no land use and development impacts are expected. For the Build Alternative,

the 2003 FEIS states that the direct impacts on land use and development will be in cities where there will be a station stop for the HSR service. In those communities, there may be an increase in occupancy rates and home ownership from the expected development around the station. Since there are no stations in the Project area, there would not be any impact on home ownership and occupancy rates.

3.13.3 Income and Poverty

Table 17 shows income data at the census tract level. Median household income ranges from \$45,000 to \$61,000 in the affected census tracts compared to \$55,000 in Illinois. Per capita income ranges from \$23,000 to \$25,000, which is similar to the counties as a whole but is below the Illinois figure of approximately \$29,000.

Poverty status in the census tracts in Macoupin (nine percent) and Jersey (five percent) counties are below the rates for their respective counties and Illinois as a whole. However, census tract 4027.01 in Madison County has 18 percent of people below poverty, higher than Madison County's rate of 12.6 percent.

Table 17 also displays disability status. It shows that the affected census tracts all have greater rates of disability (14 percent to 20 percent) than their respective counties and Illinois as a whole.

Table 17. Income Data by Census Tracts

2010 ACS 5-Year Estimates Census Tracts	Median Household Income	Per Capita Income	Person Below Poverty Level	Disability Status (2008-2010 ACS 3- Year Estimates)
Census Tract 9566, Macoupin County	\$55,946	\$23,960	9.2%	16.1%
Census Tract 102, Jersey County	\$61,512	\$25,590	5.0%	14.5%
Census Tract 4027.01, Madison County	\$45,078	\$23,410	18.2%	20.2%
County and State Level				
Macoupin County	\$47,178	\$23,222	12.0%	13.8%
Jersey County	\$53,470	\$24,369	8.5%	9.5%
Madison County	\$51,941	\$26,127	12.9%	11.9%
Illinois	\$55,735	\$28,782	12.6%	10.2%

For the No-Build Alternative, there would not be any changes to the income or poverty levels. The expenditure of funds for transportation infrastructure for the Build Alternative, however, has both direct and indirect economic impacts which would have a positive impact on employment and income levels in the corridor. As the 2003 FEIS states, development of the project will require the employment of persons to construct the infrastructure including the road bed, the rail, signal systems and grade crossings. Additional jobs, such as ticket agent positions, will be created in the communities where the stations will be located, which is not in the study area.

The geographic distribution of the economic impact to the study area will depend on the location of the firms supplying the labor and materials needed on the Project. Since the communities in the study area are relatively small, it is not expected that they contain the businesses that would supply the necessary materials for the HSR corridor, however. Subsequently, it is not expected that the Build Alternative will have much of an impact on household income.

3.13.4 Race and Ethnicity

Table 18 illustrates that in most affected block groups the minority population is less than three percent. This is also true of Macoupin and Jersey counties in general. Madison County has a minority population of approximately 12 percent and its affected block groups have approximately 8 to 12 percent minority population. Compared to Illinois in general, the affected block groups do not have a large proportion of minorities. Neither the No-Build nor the Build Alternative would cause a change in the percentage of the minority population as it is not expected that there would be any changes to the population in the three communities.

Table 18. Race and Ethnicity Summary

201 Census Block Group	Pop.	White	Black or African Amer.	Amer. Indian and Alaska Native	Asian	Two or More Races	Hispanic or Latino
Block Group 1, Census Tract 9566	1,198	98.2%	0.2%	0.0%	0.3%	0.8%	1.3%
Block Group 2, Census Tract 9566	1,381	97.5%	0.6%	0.4%	0.2%	1.2%	0.8%
Block Group 3, Census Tract 9566	897	97.7%	0.2%	0.4%	0.0%	1.0%	1.4%
Block Group 4, Census Tract 9566	1,328	98.0%	0.2%	0.4%	0.0%	1.4%	0.8%
Block Group 2, Census Tract 102	1,972	97.1%	0.2%	0.4%	0.4%	1.6%	1.4%
Block Group 1, Census Tract 4027.01	1,822	88.5%	8.9%	0.2%	0.3%	1.9%	1.6%
Block Group 2, Census Tract 4027.01	2,623	92.0%	4.7%	0.3%	0.6%	2.1%	1.0%
County and State Level							
Macoupin County	47,765	97.6%	0.8%	0.3%	0.3%	0.9%	0.9%
Jersey County	22,985	97.6%	0.4%	0.3%	0.3%	1.2%	1.0%
Madison County	269,282	88.2%	7.9%	0.2%	0.8%	1.8%	2.7%
Illinois	12,860,632	71.5%	14.5%	0.3%	4.6%	2.3%	15.8%

3.13.5 Public Facilities and Services

It is important to identify the existing public facilities and services in the study area so that any potential impacts from the Build Alternative can be assessed. The existing conditions indicate that there are 13 community facilities that are within 1/8 mile of the HSR corridor study area. Six are within Brighton, four are within Godfrey, two are within Shipman, and one is south of Brighton in an

unincorporated area. The community facilities include four churches, two cemeteries, four schools, one library, one pond, and a government office building. The names of the facilities are:

- Within Shipman
 - Shipman Cemetery
 - Shipman Elementary School
- Within Brighton
 - Brighton Village Clerk
 - Brighton Memorial Library
 - Brighton North Elementary School
 - Brighton West Elementary School
 - First Presbyterian Church
 - Brighton Christian Church
- Within Godfrey
 - Lewis & Clark Elementary School
 - Faith Baptist Church
 - Bethany Cemetery
 - Godfrey Pond
- Other areas
 - Crossroads Community Church (one mile south of Brighton limits)

In Brighton, the HSR study area abuts Brighton Memorial Library, First Presbyterian Church, and Brighton Village Clerk. In Godfrey, the Project limits abut Lewis & Clark Elementary School.

In addition to these 13 facilities, other community facilities between approximately 1/8 mile and 1/2 mile from the HSR project limits have also been identified. These are shown in Table 19 and on Appendix H, Community Facilities Map. In the maps, places that are within approximately 1/8 mile are shown in yellow and labeled. Other facilities are shown in blue with their names identified in Table 19. The Appendix H maps are shown from north to south along the HSR corridor.

As described in the 2003 FEIS, schools, medical centers, fires and police stations, parks, churches and other public spaces serve the daily needs of residents along the HSR corridor. Access to and from these facilities plays a critical role in providing these services, and in serving the health, safety, and general welfare of those who use them. Access to these facilities was considered during the Project and meetings were conducted with county engineers and representatives from regional planning commissions. Land use information was used to determine which grade crossings to close to have the least impact on public facilities. For the study area, only one public grade crossing, Gilworth Lane in Macoupin County, is impacted, and vehicles will only need to reroute one-half mile to cross the tracks. The Build Alternative will not have an impact on access to any public facilities in the area.

The Build Alternative will not physically impact any of the public facilities or services. None of these facilities are in the areas of property acquisition. Beyond temporary visual, noise, or vibration impacts during construction, no impacts to property or buildings are expected to community facilities.

For the No-Build Alternative, there will be no changes or impacts to any public facilities and services listed in Table 19.

Table 19. Public Facilities and Services along HSR Corridor

ID	Type	Name	ID	Type	Name
0	Cemetery	Shipman Cemetery	19	Government	Brighton Post Office
1	Water	Shipman Reservoir	20	School	Brighton North Elementary School
2	Church	Shipman United Methodist Church	21	Church	Crossroads Community Church
3	Cemetery	Saint Denis Cemetery	22	Church	Faith Baptist Church
4	School	Shipman Elementary School	23	Cemetery	Bethany Cemetery
5	Government	Shipman Village Hall	24	School	Lewis & Clark Elementary School
6	Cultural	Southwestern Farm & Home Museum	25	Water	Godfrey Pond
7	Cemetery	Miles Station Cemetery	26	Church	Church of Jesus Christ of Latter Day Saints
8	School	Brighton West Elementary School	27	Church	First United Methodist Church
9	Church	First Presbyterian Church	28	Cemetery	Godfrey City Cemetery
10	Church	St. John's United Church	29	Park	Adams Park
11	Assisted Living	Robings Manor	30	Government	Post Office
12	Government	Brighton Village Clerk	31	School	Lewis & Clark Community College
13	Church	Brighton Christian Church	32	School	North Elementary & Middle School
14	Park	Betsy Ann Park	33	Assisted Living	Beverly Farm Foundation
15	Church	First Baptist Church of Brighton	34	School	Early Childhood Center
16	Library	Brighton Memorial Library	35	School	Montessori Children's House
17	Cemetery	Baptist Church Cemetery	36	School	Faith Lutheran School
18	Water	Briarwood Lake			

3.13.6 Changes in Travel Patterns and Access

The Build Alternative proposes six grade crossing closures in the corridor. The grade crossing closures in the corridor would have minimal change to travel patterns and access. Five of the six crossings proposed for closure are private crossings providing access only to farm fields. In all of these cases, alternate access to these fields is available from another local road or crossing. While the changes in the route to the field might be longer for the property owner, crossing of the tracks would take place at a location with comprehensive grade crossing protection rather than at an unprotected crossing.

The sixth closure (at MP 246.85) would change access to one farmhouse as stated in Section 3.10.

Access for emergency vehicles, to schools and community centers and places of employment was taken into consideration when the street closures were proposed. There would be no significant impact regarding access for emergency services to the one farmhouse impacted. In order to provide access to the farmhouse, the emergency vehicles would travel via Conrad Road instead of the current path of travel along Illinois Route 111.

3.13.7 Economic Impacts

The Build Alternative is intended to result in a more balanced use of the transportation network by diverting trips made by automobile and air. The United States aims to develop a National Intermodal Transportation System which is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and moves people and goods in an energy efficient manner. The Chicago to St. Louis HSR corridor is a vital component of a future HSR network that will help improve the economy of the state, region, and country.

3.13.8 Growth and Economic Development

Table 20 shows employment data for the corridor. Of the three tracts, tract 4027.01 has the highest percentage of management and office workers and the lowest percentage of construction and maintenance jobs. This tract covers more urban land areas. Tract 102 in the more rural Jersey County has the highest percentage of production, transportation, and material moving jobs.

Table 20. Growth and Economic Development Data

Occupations 2010 ACS 5-Year Estimates	Employment	Management, Business, Science, and Arts	Service	Sales and Office	Natural Resources, Construction, and Maintenance	Production, Transportation, and Material Moving
Central Tract 9566	2,239	29.6%	17.4%	21.8%	16.9%	14.3%
Census Tract 102	1,836	25.5%	12.9%	21.7%	14.2%	25.7%
Census Tract 4027.01	3,129	32.4%	15.1%	29.2%	9.0%	14.3%

According to the Macoupin Economic Development Partnership, the largest employers in Brighton are:

- Brighton North-West Elementary Schools – 52 employees

- Petersen Healthcare – 50 employees
- Norrenberns Foods, Inc – 30 employees

Godfrey is approximately a 40-minute drive from downtown St. Louis, a location that has contributed to its growth. According to Madison County Community Development, Godfrey is part of the Riverbend Region, home to Olin Corporation, Global Brass & Copper, Argosy Gaming Co., Millers First Insurance, ConocoPhillips, American Water National Customer Service Center, Alton Steel, and West Star Aviation. The Riverbend region is a group of communities serving the manufacturing industry as well as the office and service industry. Tourism is also a major economic engine. Lewis and Clark Community College, the fastest growing community college in Illinois, is located in Godfrey.

According to Madison County Community Development, the largest employers in Godfrey are:

- Lewis and Clark Community College – 580 employees
- Beverly Farm Foundation – 460 employees
- Alton Community Unit School District #11 – 370 employees
- Walmart Supercenter – 270 employees
- Schnucks – 140 employees
- The United Methodist Village – 75 employees
- Blu Fountain Manor – 55 employees
- Ted's Motorcycle World – 50 employees

The Build Alternative would not negatively impact employment in the adjacent communities. The Project would provide benefits to local employment through increased connectivity and transportation with enhanced passenger rail service in the region.

The Build Alternative would have some impact on local tax revenues. Property would be acquired and retained by the UPRR. In Illinois, railroads are required to pay property taxes to States, rather than local governments for land used as part of their operations. Based on the amount of land proposed to be acquired for the Project by the railroad (estimated at approximately 30 acres), typical property values in the rural areas affected, and typical property taxes in the counties concerned, it appears that a total of about \$1,500 per year would be lost to the local tax rolls, spread over the three counties traversed by the route.

3.13.9 Pedestrian and Bicycle Facilities

The Build Alternative runs through rural areas and small towns. In the Town of Shipman, Village of Brighton, and Village of Godfrey, there are sidewalks in many areas. There are no marked bicycle facilities in the vicinity of the Project. The Build Alternative would not negatively impact any bicycle or pedestrian facilities. As described in Section 3.13.6, all six of the crossings that are proposed for closure are private roadways used for farm access.

Existing crossings that would be upgraded to quad gates for vehicular traffic would also improve safety for pedestrians and bicyclists. Grade crossings would include sidewalks or paved shoulders to accommodate pedestrians and bicyclists at crossings.

3.13.10 Displacements

In Macoupin County the corridor passes through mostly agricultural areas as well as rural communities. Of the 22 total corridor miles from the Village of Shipman to the Village of Godfrey, the corridor extends for less than three miles in mostly unincorporated areas in the southeast corner of Jersey County. Land use is predominantly agricultural, but there is some single-family residential land use. To the south, the HSR corridor extends in Madison County, passing through urbanized, incorporated communities with heavy industrial uses. The Lewis and Clark Community College is located in the Village of Godfrey adjacent to the railroad. Small agricultural fields remain active in the unincorporated areas.

Table 21 shows that approximately 15 acres are expected to be acquired as part of the HSR project. Twenty-five buildings and structures would be impacted by the Project: nine residential, one commercial, ten industrial, and five other structures. The *Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970* (URA), as amended and all applicable laws and processes would be followed to allow for fair relocation and compensation of those displaced. These impacts would not affect environmental justice populations or community facilities. The need for relocation housing would be addressed in accordance with the URA. Opportunities for relocation exist, as according to the U.S. Census there are approximately: 2,200 vacant housing units in Macoupin County; 1,200 vacant housing units in Jersey County; and 10,000 vacant housing units in Madison County. Updated proposed ROW and displacement data have been requested of the UPRR and would be incorporated when information is received.

Table 21. Summary of Land Acquisitions
(Source: UPRR 30 Percent Preliminary Plans)

Sheet Number	Acquired ROW (acres)	# of Buildings and Structures	Residential Buildings	Commercial Buildings	Industrial Buildings	Unknown Structures
7	0.21	0	0	0	0	0
8	0.61	0	0	0	0	0
9	0.54	0	0	0	0	0
10	0	4	3	1	0	0
11	0	5	4	0	1	0
13	0.23	0	0	0	0	0
23	0.37	0	0	0	0	0
27	1.97	2	1	0	1	0
28	0	6	0	0	6	0
33	0.39	0	0	0	0	0
34	0.24	1	1	0	0	0
36	2.21	0	0	0	0	0
39	0.86	0	0	0	0	0

Sheet Number	Acquired ROW (acres)	# of Buildings and Structures	Residential Buildings	Commercial Buildings	Industrial Buildings	Unknown Structures
40	5.00	0	0	0	0	0
42	0.14	0	0	0	0	0
43	0.21	0	0	0	0	0
44	0.05	0	0	0	0	0
48	0.07	0	0	0	0	0
49	1.03	2	0	0	0	2
52	0.84	0	0	0	0	0
54	0	1	0	0	0	1
55	0	2	0	0	2	0
56	0	1	0	0	0	1
57	0.04	0	0	0	0	0
60	0	1	0	0	0	1
Total	15.01	25	9	1	10	5

3.14 Environmental Justice and Title VI

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

Executive Order 12898 provides that “each Federal agency will identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations, including, but not limited to, as appropriate for its mission, in the following areas: 1.) implementation of the National Environmental Policy Act; 2.) implementation of Title VI of the Civil Rights Act of 1964, as amended; 3.) impacts from climate change; and 4.) impacts from commercial transportation and supporting infrastructure (“goods movement”).”

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

As described in “Environmental Justice Under the National Environmental Policy Act” from the Council on Environmental Quality, Environmental Justice (EJ) populations do not exist within the impacted corridor. Poverty status in Section 3.13.3 in the affected census tracts in Macoupin (nine percent) and Jersey (five percent) counties are below the rates for their respective counties and Illinois as a whole. Census tract 4027.01 in Madison County has 18 percent of people below poverty, higher than Madison County’s rate of 12.6 percent and Illinois as a whole. Section 3.13.4 shows that in most affected block groups the minority population is less than three percent. This is also true of Macoupin and Jersey counties in general. Madison County has a minority population of approximately 12 percent and its affected block groups have approximately 8 to 12 percent minority population. Compared to Illinois in general, the affected block groups do not have a large proportion of minorities that can be considered meaningfully greater than the minority population percentage in the general population, as per Executive Order 12898.

The Build Alternative would not have disproportionate impacts to minority, low-income, or other disadvantaged groups adjacent to the corridor. There is not a significant EJ population that is based on either income or race that exists in the study area. Subsequently there is no disproportionately high or adverse human health or environmental effects on minority populations and low-income populations resulting from project construction.

As stated in Section 3.10.4, there has been local concerns expressed that closing grade crossings would increase travel distance and time particularly for emergency and school bus services and changes access to homes and businesses. However, in the study area, there is only one public vehicular grade crossing to be closed, and traffic will be rerouted one half mile. Therefore, no impacts to community growth or access will result from project construction. It is expected that the Project would provide connectivity and economic benefits to these groups and the general population through enhanced passenger rail service.

3.15 Barriers and Accessibility

The No-Build Alternative would perpetuate any existing barriers to mobility for elderly and disabled persons.

The Build Alternative would have no impact regarding station and platform-oriented issues related to Americans with Disabilities Act (ADA) accessibility or access for elderly because there are no stations within the section. Design features for pedestrian facilities at grade crossing improvements, where facilities are proposed would comply and meet all requirements of the ADA.

3.16 Public Health and Safety

The No-Build Alternative would not have an adverse effect on public health and safety.

The Build Alternative would enhance safety with the installation of Positive Train Control (PTC), grade crossing closures, upgraded grade crossing protection, and upgraded track. It is expected that due to providing enhanced grade crossing protection that consists of four-quadrant gates to reinforce driver-gate compliance and restrain vehicles from entering the path of a train, the safety of vehicular, bicycle and pedestrian traffic would be enhanced. In addition, an enhanced signal system designed to separate trains from one another and identify roadway vehicles on the tracks at crossings would be implemented on the UPRR corridor.

In addition, transportation of goods and passengers is far safer than by highway. Thus, any shifts in passenger trips from road to rail as a result of the Build Alternative would produce minor societal safety benefits for those passengers choosing rail over highway travel.

3.17 Contaminated Sites and Hazardous Waste

The Original Project 2003 FEIS included preparation of a Preliminary Environmental Site Assessment (PESA). The assessment concluded that the Build Alternative could involve two special waste sites. Additional testing may be warranted and should be validated prior to any land acquisitions.

For the Project, a new assessment of potential hazardous waste sites was conducted on the sections of the Build Alternative track from MP 236.27 near Godfrey, Illinois to MP 252.11 near Shipman, Illinois covering a total of 15.84 linear miles.

The PESA was conducted to determine the presence or likely presence of hazardous substances or petroleum products within the study area or on adjoining properties that could potentially affect the study area. The PESA process included:

- Visual survey of the property to identify areas of potential environmental concerns.
- Visual survey of neighboring properties to assess any potential for an adverse impact on the property.
- Development of a 60-year land use history of the property.
- Review of published information on general geology, hydrogeology, and topographic setting for the property.
- Regulatory agency file search to identify federal and state-listed sites known to be contaminated or to have potential environmental concerns.

Results of the PESA identified a total of 19 recognized environmental conditions (RECs), as defined in ASTM E1527-05. Based on the evaluation, each of the 19 RECs were characterized as having potential to impact the work area. Further assessment classified the risk for special waste or regulated substances associated with each of the 19 RECs, as well as the Project in its entirety. A risk finding of "moderate" has been assigned for the Project based on the cumulative risk rankings of all the RECs. The risk findings were completed by GSG Consultants, the Project consultant who prepared the PESA.

The remaining identified sites from the records review are more than 1/8 mile from the proposed Project site and are not anticipated to impact the property, considering the nature of historical uses of the sites, their current regulatory status, their distance from the Project, and prevailing subsurface conditions of clay soils in the Project area. In addition, no spills or other incidents of concerns have been recorded for the property.

Results of this screening process were provided in a Preliminary Environmental Site Assessment (PESA) report prepared by GSG Consultants, Inc. in January 2012. The report is available to review under separate cover at the offices of the Illinois Department of Transportation, Division of Public and Intermodal Transportation, Chicago.

Potential Impacts

The No-Build Alternative would not have any involvement with contaminated sites or hazardous waste.

For the Build Alternative, IDOT would make an avoidance determination at a future date pertaining to the identified RECs located. If the Build Alternative (at either or both sidings) cannot avoid the identified RECs, then a Phase II site assessment would be prepared for the applicable location(s).

3.18 Cultural Resources

This subsection provides an evaluation of historic, architectural and archeological resources within UPRR ROW. 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).

3.18.1 Existing Conditions

The Midwest Archeological Research Services, Inc completed two reports within the Project limits: *Report on Phase I Archeological Reconnaissance Survey for the Tier 1 South Segment (MP 236 to MP 252.11) of the Chicago to St. Louis High Speed Rail Corridor* (2011) and *Report on Phase I Archeological Reconnaissance Survey for the Tier 1 South Segment (MP 230 to MP 236) of the Chicago to St. Louis High Speed Rail Corridor* (2011). From these reports, four archeological sites were identified within the Project limits.

- B. Reno Dump (11-Mp-304) is a 60m by 15 m surface scatter of Historic Euro-American artifacts along the east side of the railroad tracks within the NE ¼ of the SE ¼ of the NE ¼ of Section 24 in Shipman Township.
- Bernstein Site (11-Mp-4) is a 5.5 acre Late Woodland-Mississippian Period site that consists of a dense scatter of flakes, tools, and ceramics (including shell-tempered sherds). It is located within

a portion of the SW ¼ of the SE ¼ of the NE ¼ of Section 27 in Polk Township on the west side of the railroad tracks.

- Chicago & Alton Railroad Site (11-Mp-308) is a 50 meter by 15 meter surface scatter of Historic Euro-American artifacts on the south (east) side of the railroad tracts at the end of West Street in Plainview. The 0.2 acre site is situated within the NW ¼ of the NE ¼ of the NW ¼ of Section 9 in Hilyard Township.

Bott Evangelical Cemetery (11-Jy-604) was established in 1858 and is located on the east side of the railroad tracks within the NE ¼ of the NW ¼ of the NW ¼ of Section 36 in Piasa Township. Fifteen graves appear to be situated within the right-of-way of Project.

The Department and IHPA cultural resources staff reviewed a photographic log of buildings, bridges and unique culverts that could be older than 50 years within the Project area. No structures were identified that warrant National Register consideration.

3.18.2 Potential Impacts

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

Under the Build Alternative, three of the four archaeological sites in the Project area (identified above) would not be impacted by the Project. The Bernstein Site (11-Mp-4), which encompasses the improvements at the Newby Road grade crossing, would be coordinated with SHPO. The design team would work with the SHPO to avoid impacts to archaeological resources at this site.

The Build Alternative would displace 25 buildings and structures. None of the structures warrant National Register consideration. Also, the Build Alternative would not result in visual impacts to cultural resources. Therefore, the Build Alternative would not adversely affect cultural resources (see Appendix K for the SHPO coordination).

In an IDOT letter dated June 6, 2013 with concurrence from the State Historic Preservation Office (SHPO) dated June 11, 2013, IDOT stated that no Historic Properties subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, would be affected by this Project (see Appendix K for a copy of the letter)..

3.19 Special Lands (Section 4(f) Resources, 6(f) Lands, and OSLAD Lands)

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 (as codified in 49 U.S.C. 303) states that publicly-owned parks, recreation lands, wildlife and waterfowl refuge areas, or historic sites of national, state or local significance may not be used for USDOT funded projects unless there is no feasible and prudent alternative to the use of such land, and such projects include all possible planning to minimize harm to these lands.

16 USC 4601-8(f)(3), commonly known as Section 6(f) of the Land and Water Conservation Fund Act of 1965 (Public Law 88-578), requires that:

“No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive Statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.”

When a project proposes use of land in which Land and Water Conservation (LAWCON) funds have been involved in its purchase or development, Section 6(f) requires the approval of the Secretary of the Interior for the conversion of the land to other than public outdoor recreational use.

The OSLAD program is a State-funded grant program authorized by the Open Space Lands Acquisition and Development Act (525 ILCS 35/1, et seq.). Illinois Administrative Code provisions for the OSLAD grant program (Ill Adm Code 17 Part 3025) incorporate by reference essentially the same compliance procedures as required for the Land and Water Conservation Fund (LAWCON) grant program. Since OSLAD is a State program, no coordination is required with federal-level agencies.

The identification of potential Section 4(f) lands in the Villages of Shipman, Brighton and Godfrey was conducted as part of Project field reviews in September 2011. The Village websites were also utilized to determine the presence of parks, school grounds, and recreational areas. The Illinois Historic Preservation Agency’s Historic, Architectural and Archaeological Resources Geographic Information System (HAARGIS) was consulted for the occurrence of historic sites on, or determined eligible for, the National Register of Historic Places. In addition, the communities were contacted by telephone to confirm the presence of any 4(f) resources, or if the villages had plans for any type of 4(f) lands, located within the footprint of the proposed Project.

Potential Impacts

The No-Build Alternative would not result in a use of Section 4(f) properties.

Each community has public parks and recreation areas that would be defined as a Section 4(f) property. However, none of the identified public parks or recreation properties occur within the study area for the Build Alternative. Furthermore, none of the historic sites described in the previous section are eligible for the NRHP. Therefore, the Build Alternative would have no effect on any Section 4(f) lands , or Section 6(f) lands or properties registered to the OSLAD Program.

3.20 Visual Resources

A project’s visual quality is ensured by encouraging a positive visual change that will improve or enhance the surrounding landscape. To ensure a positive visual experience is associated with the Build Alternative, a Visual Impact Analysis (VIA) was conducted for areas affected by the Build Alternative. A number of information sources were consulted and referenced to perform the VIA (See References). A VIA is an assessment of impacts to the viewshed from and to a proposed development. A viewshed is defined as a total area visible from a point or series of points along a transportation facility and conversely, the area with views upon the facility. To provide visual quality, the project’s relationship to natural landscapes, residential areas, historical features, existing land use, and topographical and physical characteristics must be evaluated.

The southern end of the Project corridor begins in the community of Godfrey, Illinois and runs north along the UPRR railway through Brighton, Illinois and ends at MP 253 just northeast of Shipman, Illinois. The tracks run through both residential and commercial areas within the communities, but the majority of the track runs through open agricultural land between these three communities. Agricultural lands contain open fields planted in a variety of row crops such as corn and soybeans with intermittent pasture land and farmsteads.

The VIA took into consideration viewsheds, residences and developments and their proximity to the tracks, vegetative cover and grade changes. The proposed Project between UPRR MP 230 and MP 253 from Shipman, Illinois to Godfrey, Illinois, can be constructed by incorporating appropriate landscaped design, and structural and railway design, in such a manner as to limit the potential for any significant or adverse long term impacts to the existing visual qualities of the Project area.

Potential Impacts

Positive Train Control (PTC) towers will be installed along with four quadrant gates at public crossings as part of the No-Build Alternative. The PTC towers are part of the signal and gate equipment and would appear typical of train signal equipment at crossings. The No-Build Alternative will not have any negative impacts on the visual quality of the landscape because the railroad tracks will not move from their current ROW.

The Build Alternative will have possible visual impacts due to the addition or modification of four-quadrant gates, PTC towers, removal of trees/shrubs, and the movement of the tracks closer to residential properties. PTC tower locations will be included in the final plans. Similar to the No-Build, the PTC towers would appear to be part of the typical train signal equipment at crossings. The impacts are described in further detail below in Table 22 and Table 23.

Table 22. Grade Crossing Improvements

Mile Posts	Crossing	Improvement	Impacted Properties
Godfrey			
252.01	Pearl Street	Four-Quadrant Gate & Tree/Shrub Removal	Commercial
250.90	Bethany Lane	Four-Quadrant Gate & Tree/Shrub Removal	Residential and Commercial
Brighton			
245.85	West Center Street	Four-Quadrant Gate	Residential and Commercial
244.76	Brighton Bunker Hill	Four-Quadrant Gate & Tree/Shrub Removal	Residential
Shipman			
238.35	Keating Street	Four-Quadrant Gate	Commercial
Rural Crossings			

Mile Posts	Crossing	Improvement	Impacted Properties
248.55	Humbert Road/David Lane	Four-Quadrant Gate	Residential and Commercial
247.97	Terpening Road	Four-Quadrant Gate	Residential and Commercial
244.26	Piasa Road	Four-Quadrant Gate	Residential and Agricultural
242.91	Miles Station Road	Four-Quadrant Gate	Residential and Agricultural
241.28	Bachman Road	Four-Quadrant Gate	Agricultural
239.89	Prairie Dell Road	Four-Quadrant Gate	Residential and Agricultural
Private Crossings			
250.18	Private Crossing	Four-Quadrant Gate & Tree/Shrub Removal	Agricultural
246.87	Private Crossing	Four-Quadrant Gate & Tree/Shrub Removal	Residential and Agricultural
240.71	Private Crossing	Four-Quadrant Gate & Tree/Shrub Removal	Agricultural
237.57	Private Crossing	Four-Quadrant Gate & Tree/Shrub Removal	Agricultural
237.24	Private Crossing	Four-Quadrant Gate & Tree/Shrub Removal	Agricultural
236.81	Private Crossing	Four-Quadrant Gate & Tree/Shrub Removal	Agricultural

Table 23. Agricultural Upgrades to Existing Track

Stationing	Side of Tracks	Impact Assessment
Godfrey		
13286+00 to 13277+00	E	Short Visual Impact Associated with Construction Activities
13286+00	E	Removal of Existing Vegetation
13270+00 to 13259+00	W	Minimal Impact through Ag Land
13253+00 to 13224+90	W	ROW through Backyards along Humbert Road
Brighton		
12895+00 to 1249+00	W	Moving Alignment 30-30 Feet Closer to Residences

3.21 Construction Impacts

The No-Build Alternative would not create construction impacts.

Impacts from construction activities of the Build Alternative would be temporary, occur during construction, and would cease immediately after the Project is completed.

Construction of the Build Alternative may involve temporary air noise, vibration and traffic impacts. The construction contract specifications would require that the contractor adhere to all federal, state, and local noise abatement and control requirements. Noise would be controlled by measures such as, but not limited to, ensuring construction equipment is in good repair and fitted with manufacture recommended mufflers.

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. "Best Management Practices" (BMPs) for dust and noise suppression would also be followed.

Construction related effects on air quality due to the Build Alternative and construction of the HSR corridor should be localized, temporary, and of low magnitude with mitigation measures in place. Demolition and construction activities can result in short-term increases in fugitive dust and equipment-related particulate emissions in and around the Project area. (Equipment-related particulate emissions can be minimized if the equipment is well maintained.) The potential air quality impacts would be short-term, occurring only while demolition and construction work is in progress and local conditions are appropriate.

The potential for fugitive dust emissions typically is associated with building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and transportation of materials. The potential is greatest during dry periods, periods of intense construction activity, and during high wind conditions. The Illinois Department of Transportation's (Department) Standard Specifications for Road and Bridge Construction include provisions on dust control. Under these provisions, dust and airborne dirt generated by construction activities would be controlled through dust control procedures or a specific dust control plan, when warranted. The contractor and the Department would meet to review the nature and extent of dust-generating activities and would cooperatively develop specific types of control techniques appropriate to the specific situation. Techniques that may warrant consideration include measures such as minimizing track-out of soil onto nearby publicly-traveled roads, reducing speed on unpaved roads, covering haul vehicles, and

applying chemical dust suppressants or water to exposed surfaces, particularly those on which construction vehicles travel. With the application of appropriate measures to limit dust emissions during construction, this Project would not cause any major, short-term particulate matter air quality impacts.

Lastly, the Department has developed additional construction-related Special Provisions dealing with the use of cleaner diesel fuel, idling reduction requirements for construction equipment, and the installation of emission control devices on contractor vehicles. These Special Provisions are found at the following links:

<http://www.dot.il.gov/desenv/pdf/80237.pdf>

<http://www.dot.il.gov/desenv/pdf/80239.pdf>

<http://www.dot.il.gov/desenv/pdf/80261.pdf>

During operation, the Build Alternative would alleviate identified congestion problems, improving traffic flow at grade crossings and along the HSR corridor. The Build Alternative would not cause or contribute to a violation of carbon monoxide (CO) standards. CO concentrations for the Build Alternative are below the 8-hour National Ambient Air Quality Standard necessary to protect public health and welfare.

During construction, measures to reduce engine activity or reduce emissions per unit of operating time would be required. Construction equipment would be kept clean, well-maintained, and in good operating condition.

In order to prevent construction impacts on water quality in the Project area, sediment and erosion control measures would be required during construction. Construction could cause temporary impact to wetlands and streams in the Project area. Measures are available to minimize potential impacts by 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. Special provisions would be added to the contract documents to require such measures.

Debris and spoil disposal, if generated, would be removed according to state and local regulations. Reference should be made to the NPDES permit requirements for the project. Any local stormwater management requirements and or BMPs that would be provided in accordance with local/state and federal permitting requirements would be followed.

Maintenance of traffic measures would be implemented during construction. Any road or sidewalk closures needed for construction activities would be temporary and traffic and pedestrian circulation would resume once construction is over.

It is not expected that access to any community facilities would be restricted during construction. Coordination would need to take place with representatives from these facilities if access to the facility is altered. As stated in Section 3.10, vehicular traffic would be temporarily impacted to varying degrees

at locations when grade crossings are under construction. Traffic would be required to slow down as it passes through the construction zone while new warning devices and other improvements are installed. In some cases, temporary diversion of traffic to adjacent crossings may be required.

These impacts to vehicular traffic could affect emergency services, schools, businesses, local festivals, and other activities requiring vehicular access. However, all of the construction related impacts on vehicular traffic would be temporary and are considered minor.

Construction activities of the Build Alternative would not have impacts to minority, low-income, or other disadvantaged groups adjacent to the corridor.

3.22 Coastal Zones

The Project is not located along a coast or one of the Great Lakes and, therefore, there would be no impact to coastal areas. The Build Alternative would not affect coastal zone management.

3.23 Secondary and Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act of 1969 (NEPA) defines secondary impacts as those:

“...effects which are caused by the proposed action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”² These actions are often referred to as “but for” actions.

Cumulative impacts are those impacts:

“...on the environment which results from the incremental consequences of the action when added to other past, present, and reasonable foreseeable future actions”³

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

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

Boundaries for the Analysis of Impacts

Indirect and cumulative impacts must be assessed within geographic boundaries at which the project may impact given resources. However, based on the type of resource, the boundary for the analysis of

² Code of Federal Regulations, Title 40, Section 1508.8(b)

³ Code of Federal Regulations, Title 40, Section 1508.7

potential impact may vary. For example, potential impacts related to socio-economic factors may include entire communities but potential impacts for cultural, archeological and historic resources would only be within areas that are currently undeveloped and have the potential for future development based on the double tracking project. The boundaries for the area of impact are considered the municipal boundaries of the communities of Shipman, Brighton, and Godfrey. For unincorporated areas, it is assumed that any secondary or cumulative impacts would occur within five miles of the High Speed Rail corridor.

This section describes the effects that are secondary or cumulative to the development and operation of the double tracking but are likely to occur because of the Project. Unlike direct effects, these indirect impacts may occur somewhat farther out in time and typically relate to growth in the communities surrounding the High Speed Rail (HSR) service.

The areas for which there may be secondary impacts are air quality; water quality; noise; wetlands; threatened and endangered species; vegetation; traffic and transportation; land use; social and economic; cultural, archeological and historical resources; and construction impacts.

The No-Build Alternative would not result in any secondary or cumulative impacts in any resource area.

3.23.1 Air Quality

Increases in rail traffic along the rail corridor as part of the Build Alternative would not cause an increase in air pollutants and there would be no secondary or cumulative impacts related to air quality.

3.23.2 Water Quality

All of the streams within the Project area have been impaired to some degree by point and nonpoint source pollution. The IEPA Integrated Water Quality report dated March 16, 2012 indicates for streams sampled, 62 percent were rated as Fully Supporting aquatic life. If land usage remains similar to present day conditions, soil erosion of cropland will continue to occur within portions of the stream environments via storm runoff. If there is any change in land use due to redevelopment, further utilization of streams for discharge effluents from both municipal and industrial sources will be expected. In the event that land is redeveloped, a National Pollutant Discharge Elimination System (NPDES) Permit for construction involving one acre or more of land disturbance will be required. In addition, the NPDES MS4 ILR40 Permit requires MS4 communities to enforce a storm water pollutant control program to minimize pollutants coming into or discharged from their storm water conveyance systems. However, due to the fact that there are no station areas in the Shipman-Godfrey corridor, it is not expected that there would be significant conversion of agricultural lands into other uses causing an increase in discharge. Subsequently it is not expected that there are secondary or cumulative impacts to water quality caused by the Build Alternative.

3.23.3 Noise

Although there are no identified direct impacts or proposed mitigation measures for the Build Alternative, it is reasonable to conclude that current and future noise conditions could have secondary and cumulative impacts to the adjacent communities and lands by impacting the type of development

that would occur immediately adjacent to the corridor. Land uses and developments that are “noise sensitive” would most likely not be developed immediately adjacent to the HSR corridor. These types of land uses could include hospitals and residential land uses. However, the impacts of noise are not considered significant and it is expected that future land use patterns will follow the current development patterns in the communities.

3.23.4 Wetlands

Implementation of the Project is not expected to substantially alter development patterns in the corridor or near stations. Consequently, additional impacts to wetlands will not occur at an increased rate due to induced development. While this Project would add to the cumulative loss of wetlands in the Project area, with implementation of the Section 404 permit process, including maximum wetland avoidance and compensation, the potential for this Project to add to the cumulative wetland loss would be minimized.

3.23.5 Threatened and Endangered Species

Coordination is ongoing with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources (IDNR) to assure that the proposed Project would minimize or avoid impacts to protected plant and animal species during Project construction, operation, and maintenance. This effort includes an agency consultation process. Project improvements would be coordinated with the agencies and appropriate avoidance and mitigation measures would be developed for listed species and or their habitats.

Minor amounts of limited habitat types such as wetlands, native prairie, and woodland would be impacted by the Build Alternative. Adhering to the outcome of the agency consultation processes, it is anticipated no unavoidable adverse impacts are anticipated to threatened and endangered species. No indirect or cumulative impacts are anticipated provided that tree clearing restrictions for the Indiana bat are adhered to.

Secondary impacts may result from construction disturbances during sensitive breeding periods, or through on-going maintenance activities such as mechanical or chemical removal of woody species. Cumulative impacts would result in the eventual loss of certain species within the corridor impact area due to the loss of habitat if this loss is not mitigated. Restoration of habitat needs to occur immediately after construction to minimize the impacts.

3.23.6 Vegetation

Vegetation along the Project corridor is indicative of disturbed cover types. Native prairies are the higher quality resource due to the loss of the majority of the Illinois prairie ecosystem. The reduction in native vegetation communities will be minimal compared to historic losses on a local or regional scale. However, because of the extensive historic losses and the relative importance of railroad rights-of-way as refuge for habitat-specific species, additional conversion of upland forest, savanna, remnant prairie, and wetland communities has an additive effect greater than the actual impact. A vegetation plan, including a prairie restoration plan would be incorporated into the overall Project final design to mitigate for indirect and cumulative prairie losses.

3.23.7 Traffic and Transportation

Indirect impacts occur when there are changes to travel patterns based on changes to grade crossings. Traffic impacts occur when access to areas is restricted resulting in increased traffic in areas where there are currently low volume roadways. Impacts will be greater if access is altered for ambulances, police, fire, school districts, hospitals and places of employment.

Cumulative impacts from traffic impacts could be perceived both positively and negatively. Additional traffic on low volume streets could negatively impact property values which could result in eventually lower tax revenues for the towns. However, additional traffic could benefit retail opportunities as more vehicles would be driving past retail stores, restaurants, and other attractions.

Six grade crossings in the corridor would be closed; five are private crossings and one is a public crossing. Since there is only one public grade crossing affected, Gilworth Lane in Macoupin County, it is not expected that there be a great amount of secondary or cumulative impacts. Access to the south side of the rail corridor for those properties on the north side near Gilworth Lane would be via 1st Avenue eastward to the crossing labeled as Plainview Blacktop. Access to the north side for those properties on the south side of the rail corridor would be via private roads east of Plainview Blacktop. Since the area surrounding Gilworth Lane is undeveloped, the amount of traffic to be diverted down 1st Avenue is very minimal and it is doubtful secondary or cumulative impacts would occur.

3.23.8 Land Use

Indirect impacts to land use include the fact that certain types of land uses would not develop near a HSR corridor due to potential noise issues, potential traffic impacts and other disruptions. Typically, residential land uses, hospitals, schools and other sensitive noise receptors would not locate within close proximity to railroad tracks unless there was a benefit in doing so, in particular a station nearby. However, no stations are proposed nearby.

Land uses that would not be impacted by increased train activity would most likely include manufacturing, warehousing, industrial, and commercial land uses including office space. It is expected that these land uses could develop along the corridor depending on the community's plans for development. These types of land uses are already prevalent in Tract 102 in Jersey County as described in Section 3.11. However, it is expected that the Build Alternative would neither encourage nor discourage development of these types of land uses in the affected communities.

Cumulative impacts would occur if the presence of the HSR restricts the future development along the corridor stagnating the growth potential in the towns of Shipman or Godfrey. This may occur due to the noise impacts or restrictions in access to certain parcels of land due to grade crossings. Impacts on land uses that are sensitive noise receptors could occur as they most likely would not locate adjacent to a railroad corridor. However, it is expected that future land use patterns will follow the current development patterns in the communities in the Project area. The communities have been established around the rail corridor for decades and development patterns reflect the presence of the tracks. Subsequently it is expected that the future development would be neither negatively nor positively affected by the introduction of high speed rail through the community.

3.23.9 Social and Economic

Indirect effects on social and economic resources would be based on whether there are land use changes in the area. It is not expected that growth and economic development would occur from the double tracking except around station areas. Additionally, indirect economic impacts may include effects that construction and operation of the HSR trains might have on property values along the corridor. Although there may be some initial decline in property values during construction, it is expected that once the double track is constructed property values will return to their normal value as the tracks already exist.

Indirect benefits will occur with the addition of new jobs due to the construction of the HSR corridor. Development of HSR between Chicago and St. Louis will require the employment of persons to upgrade the road bed, install signal and safety devices, and improve grade crossings. Additional jobs will be created in firms that produce the signal and safety devices, steel rails, and the rolling stock for the route. The wages that these individuals receive are then recycled throughout the economy as the new workers buy houses, furniture, groceries, and clothes. These expenditures, in turn, create new jobs, producing a multiplier effect on the economy. The geographic distribution of that impact will depend upon the location of firms supplying the labor and materials needed on the Project.

Cumulative impacts could include the economic benefit that will continue to grow once initiated. The addition of new jobs that enhance expenditures will continue to have a positive effect on the region's economy resulting in more jobs, retail opportunities, and housing developments. It is not known however, where the additional economic benefit could occur and whether it will occur in the communities of Shipman, Brighton, and Godfrey.

In terms of social impacts, consideration on environmental justice (EJ) populations (i.e. lower income or from a minority racial group) is important. Indirect impacts would occur if EJ populations feel disproportionately affected by direct impacts such as noise or access and subsequently feel they can't have the same standard of living as others in the community. Cumulative impacts would occur if the direct impacts cause the EJ population to move from the community or negatively impact their land values. As described in Section 3.14, Environmental Justice and Title VI, the percentage of minority and low income populations are not significantly represented in the corridor and therefore, it is not expected that there are secondary or cumulative impacts to the EJ population.

3.23.10 Cultural, Archeological and Historic Resources

There are no recorded cultural, archeological and historic resources located in the immediate Project area. In the future, the area that where there could be the most indirect impacts on cultural, archeological and historic resources would be primarily areas where stations would be located as stations could spur additional development and growth which could potentially impact cultural, archeological and historic resources. However, no station is proposed within the study corridor.

Since there are no proposed stations between Shipman and Godfrey, it is not expected that there would be cumulative impacts due to the construction of a second track in this area that could potentially affect cultural, archeological or historic resources. It is not expected that the location of a double track in the Project area would encourage development that could impact these resources.

One historic structure would potentially be displaced by the improvement. Consultation with the State Historic Preservation Officer (SHPO) is ongoing but no cumulative impacts are expected on other historic resources in the towns of Shipman, Brighton or Godfrey. Fencing may be provided as a safety feature but locations would be coordinated with the SHPO to ensure no visual impacts would occur to any listed historic resource.

3.24 Permits

3.24.1 Section 404

It is anticipated that a U.S. Army Corps of Engineers (USACE) Section 404 Permit would be required for the four identified wetland impacts associated with the culvert replacements at these sites, two in Madison County and two more in Macoupin County. Appropriate permits (Regional Permit or Nationwide Permit) would be sought and coordinated with the USACE.

Mitigation for wetland impacts would be coordinated with the Illinois Department of Natural Resources (IDNR). State mitigation ratios are determined by the size of the impact (over or under 0.5 acres) and the location of the mitigation site (on-site, off-site, out-of-basin). The final mitigation measures would be decided during consultation with the appropriate agencies.

3.24.2 Section 401 Water Quality Certification

A Water Quality Certification (WQC) from the Illinois Environmental Protection Agency (IEPA) under Section 401 of the Clean Water Act is required.

3.24.3 National Pollutant Discharge Elimination Systems (NPDES)

It is anticipated that this Project would result in the disturbance of one or more acres of total land area. Accordingly, it is subject to the requirement for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction site. Permit coverage for the Project would be obtained either under the IEPA General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit No. ILR10) or under an individual NPDES permit. Requirements applicable to such a permit would be followed, including the preparation of a Stormwater Pollution Prevention Plan. Such a plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site. It shall also describe and ensure the implementation of practices that would be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit.

3.25 Environmental Commitments

- The reconstruction of two culverts where the ROW would be acquired would require the clearing of approximately 1.23 acres of trees at MP 242.50 and 0.86 acres of trees at MP 242.80. IDOT BDE Biological Resource Review commitment requires that there would be no tree clearing in these locations between the time periods between April 1 and September 30 when bats are likely to be present.
- On the east side of the tracks from Stationing 13253+00 to 13224+90, additional ROW access is required. This section of ROW would have an impact on the viewshed from residential areas along

Humbert Road, as the ROW access runs directly through residential backyards, along the western edge of an electric utility substation, and along the western edge of a municipal water storage facility. Visual screening would be implemented to shield the view of the residents from the alignment.

- Construction of the Build Alternative would create temporary construction impacts to air, noise and vibration during construction. The construction contract specifications should require that the contractor adhere to all federal, state, and local air, noise, and vibration abatement and control requirements.
- In order to prevent construction impacts on water quality in the Project area NPDES permit requirements and commitments would be adhered to and, proper sediment and erosion control measures should be utilized during construction.
- It is not expected that access to any community facilities would be restricted during construction. Coordination would need to take place with representatives from these facilities if access to the facility is altered.
- Coordination is ongoing with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources to assure that the proposed Project would minimize or avoid impacts to protected plant and animal species during Project construction, operation, and maintenance. This effort includes an agency consultation process. Project improvements would be coordinated with the agencies and appropriate avoidance and mitigation measures would be developed for listed species and or their habitats.
- Vegetation along the Project corridor is indicative of disturbed cover types. The reduction in native vegetation communities resulting from Project construction would be minimal compared to historic losses on a local or regional scale. However, because of the extensive historic losses and the relative importance of railroad ROW as refuge for habitat-specific species, additional conversion of upland forest, savanna, remnant prairie, and wetland communities has an additive effect greater than the actual impact. A vegetation plan, including a prairie restoration plan would be incorporated into the overall Project final design to mitigate for prairie losses.
- To the extent practical, the project sponsor should avoid and minimize impacts to prairie sites 17 through 21 and should notify the Illinois Department of Transportation Bureau of Design and Environment (BDE) when unavoidable impacts are known.
- In 2013 and 2014, the BDE will re-survey the class 1, 1/2, and 2 prairie sites for the presence of federal and state listed species of plants, including the eastern prairie fringed orchid.

4.0 Coordination and Consultation

This section summarizes the coordination efforts that have occurred throughout the Project development process. Coordination has been on-going with interested agencies and local communities through a series of meetings and written correspondence.

The numerous coordination efforts between Illinois Department of Transportation (Department) and the interested agencies have covered issues regarding sensitive environmental resources. The agencies coordinated with include the following:

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Department of Transportation – Federal Highway Administration
- U.S. Department of Transportation – Federal Railroad Administration
- U.S. Fish and Wildlife Service
- Illinois Department of Agriculture
- Illinois Department of Natural Resources
- Illinois Environmental Protection Agency
- Illinois Historic Preservation Agency
- Illinois State Geologic Survey
- Jersey County
- Macoupin County
- Madison County
- Village of Shipman
- Village of Brighton
- Village of Godfrey

4.1 Agency Coordination

Coordination efforts have occurred with several resource agencies regarding clearances for biological resources (threatened and endangered species), wetlands, and cultural resources.

4.2 Public Meetings

As part of the Project coordination efforts, the Department has held meetings with various local agencies within the limits for the Project specified in the 2004 ROD. Specific to this proposal, an opportunity for public comment will be provided via a published Public Meeting Offer announcement in the local publications which cover the Project study limits. The public availability of the EA will coincide with the public meeting. The announcement would be printed a minimum of two times. Requests would be accepted for 21 days from the date of the first publication. A public meeting would be offered if requested. Any minutes generated from this meeting would be incorporated into the final version of this document.

5.0 References

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