

3.0 ENVIRONMENTAL RESOURCES, IMPACTS AND MITIGATION

3.1 Physical Environment

The project area was inventoried for environmental resources. Included in this section is a discussion of the resources potentially impacted by the proposed action. Where appropriate, mitigation measures are identified.

3.1.1 Air Quality / Energy

Air quality describes the level of pollution in the air. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing the productivity or vigor of crops or natural vegetation, or harming human or animal health.

As required by the Clean Air Act (CAA) and the 1990 Clean Air Act Amendments (CAAA), the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) for six major air pollutants, as shown in Table 3-1. These pollutants, known as criteria pollutants, are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), particulate matter (PM₁₀, PM_{2.5}), ozone (O₃), and sulfur dioxide (SO₂). The "primary" standards have been established to protect the public health. The "secondary" standards, intended to protect the nation's welfare, account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

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

Also of concern are greenhouse gases (GHG) that trap heat in the atmosphere. These gases are necessary to life as we know it, since they keep the planet's surface warmer than it otherwise would be. As concentrations of greenhouse gases increase, however, the Earth's temperature rises. This is known as the "Greenhouse Gas Effect." Effects of these rising temperatures include climate change and rising sea levels.

The section describes the potential air quality effects of the proposed increases in rail operations on criteria pollutant, air toxic concentrations, and GHG emissions. The criteria pollutants of concern are PM₁₀ and PM_{2.5} due to the diesel train emissions, CO due to emissions from roadway vehicles, and O₃ precursors (volatile organic compounds [VOCs] and nitrogen oxides [NO_x]). The potential impacts on air toxics and GHG, due to emissions from roadway vehicles, diesel trains, and related facilities, were also considered.

Table 3-1. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour ⁽¹⁾	None	
	35 ppm (40 mg/m ³)	1-hour ⁽¹⁾		
Lead	0.15 µg/m ³ ⁽²⁾	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m ³	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m ³)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM ₁₀)	150 µg/m ³	24-hour ⁽³⁾	Same as Primary	
Particulate Matter (PM _{2.5})	15.0 µg/m ³	Annual ⁽⁴⁾ (Arithmetic Mean)	Same as Primary	
	35 µg/m ³ *	24-hour ⁽⁵⁾	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour ⁽⁶⁾	Same as Primary	
	0.08 ppm (1997 std)	8-hour ⁽⁷⁾	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m ³)	3-hour ⁽¹⁾
	0.14 ppm	24-hour ⁽¹⁾		

⁽¹⁾ Not to be exceeded more than once per year.

⁽²⁾ Final rule signed October 15, 2008.

⁽³⁾ Not to be exceeded more than once per year on average over 3 years.

⁽⁴⁾ To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

⁽⁵⁾ To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).

⁽⁶⁾ To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (Effective May 27, 2008)

⁽⁷⁾ (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
 (b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

* For the purpose of demonstrating compliance with the Conformity Rule, EPA's previous 24-hour PM_{2.5} standard of 65 µg/m³ still applies.

3.1.1.1 Existing Conditions

Attainment Status/Regional Air Quality Conformity

EPA publishes a list of all geographic areas in compliance with the NAAQS, as well as those areas not in attainment of the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis. Areas classified as “attainment areas” comply with the applicable NAAQS. Areas once classified as nonattainment that have since demonstrated attainment of the NAAQS are classified as “maintenance areas.” Areas not in compliance with the NAAQS are classified as “nonattainment areas.” The attainment status of each area affected by the proposed project is provided in Table 3-2. As shown, all counties affected by the project are classified as attainment areas for CO and PM₁₀. Several of the counties, however, are classified as nonattainment for O₃ and/or PM_{2.5}.

Table 3-2. Attainment Status

County/State	Pollutant and Attainment Status			
	CO	Ozone	PM ₁₀	PM _{2.5}
Cook,/,IL	Attainment	Nonattainment	Attainment	Nonattainment
Grundy(Aux Sable and Goose Lake Townships),/ IL	Attainment	Nonattainment	Attainment	Nonattainment
Jersey / IL	Attainment	Nonattainment	Attainment	Attainment
Livingston / IL	Attainment	Attainment	Attainment	Attainment
Logan / IL	Attainment	Attainment	Attainment	Attainment
Macoupin / IL	Attainment	Attainment	Attainment	Attainment
Madison / IL	Attainment	Nonattainment	Attainment	Nonattainment
McLean / IL	Attainment	Attainment	Attainment	Attainment
Sangamon / IL	Attainment	Attainment	Attainment	Attainment
St. Clair / IL	Attainment	Nonattainment	Attainment	Nonattainment
Will / IL	Attainment	Nonattainment	Attainment	Nonattainment
St. Louis / MO	Attainment	Nonattainment	Attainment	Nonattainment

The CAAA requires federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). The SIP provides for implementation, maintenance, and enforcement of the NAAQS. Prior to approval or funding by a federal agency, a proposed project must demonstrate compliance with USEPA’s Conformity Rule by determining that it would not cause or exacerbate exceedance of an NAAQS. As a project being developed under FRA, this project falls under the General Conformity Rule, which requires a conformity determination for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a federal action would equal or exceed EPA-specified significant threshold values. In Illinois, general conformity criteria and procedures are set forth in 35 Illinois Administrative Code 255. The air quality analysis in this document has been prepared in accordance with these state regulations.

Ambient Air Quality

Air quality monitors are located throughout Illinois. The last three years of monitored data from monitors located closest to the study area are shown in Table 3-3. As this data shows, only exceedances of the NAAQS for O₃ and PM_{2.5} standards were measured.

3.1.1.2 Potential Impacts

The project would result in an increase in rail operations between Chicago, Illinois and St. Louis, Missouri. While diesel train emissions would be offset by decreases in regional roadway vehicle miles traveled (VMT) and vehicular congestion, the project elements that could adversely affect air quality levels along the project corridor include increases in diesel locomotive emissions from the additional diesel train service, idling and moving trains near stations, and train operations and associated service at maintenance and/or storage facilities.

However, based on energy considerations and, as evaluated below, the project is unlikely to cause or exacerbate a violation of applicable NAAQS, or measurably increase air toxics or MSAT levels. It is also unlikely that the construction of the project, which would follow state and local regulations regarding construction activities and equipment, would cause a violation of the applicable standards.

Nonattainment Air Quality Impacts

The proposed improvement would impact counties of Cook, Grundy and Will in the northeastern Illinois nonattainment area, and Jersey County in the St. Louis nonattainment area. While the proposed project would increase diesel locomotive emissions, these increases would be offset by decreases in regional mobile source auto VMT and modest increases in average driving speeds. Table 3-4 shows estimated annual pollutants for the northeastern Illinois nonattainment area in tons for trips forecast to use the Preferred Alternative if they were made by auto; due to new rail service (from five to eight round trips per day); state conformity threshold values; and the net change in annual pollutant burden for travel changing from auto to rail. Table 3-5 shows the same information for the St. Louis nonattainment area. The estimates in both tables are calculated as future proposed conditions minus current conditions; i.e., impacts attributable only to the changed level of rail service.

Table 3-4 and Table 3-5 show that estimated additional annual pollutants from the Preferred Alternative new rail service are all well below state general conformity threshold values for all calculated pollutants. The comparison to net change, when estimated annual auto pollutants are removed, falls even further below the thresholds. Note that changing mode of travel affects different pollutants in different ways. VOC and CO show a net decrease while NO_x, PM₁₀ and SO₂ show a net increase. This is due to gasoline and diesel engines having significantly different emission characteristics. The proposed increase in train service with the Preferred Alternative will not result in increased emissions that would exceed the General Conformity thresholds. Generally, these changes in pollutant levels are not expected to affect regional air quality levels, including air toxics and GHG, significantly.

Table 3-3. Air Quality Monitored Data (2006-2008)

			320 South Franklin Chicago, IL			13th & Tudor E. St Louis, IL			Liberty St & Country Rd Jerseyville, IL			Main & Gregory Normal, IL			54 N. Walcot Wood River, IL		
			2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Carbon Monoxide (CO) [ppm]	1-Hour	Maximum	2.8	6.1	7.3	3.5	2.4	2.9									
		2nd Maximum	2.6	2.5	4.4	3.4	2	2.7									
		# of Exceedences	0	0	0	0	0	0									
	8-Hour	Maximum	2	1.5	2	3	1.6	2.3									
		2nd Maximum	1.6	1.4	1.5	2.4	1.6	2.2									
		# of Exceedences	0	0	0	0	0	0									
Particulate Matter [$\mu\text{g}/\text{m}^3$]	PM ₁₀	Maximum 24-Hour				103	60	45							55	66	64
		Mean Annual				34	32	31							25	29	25
		# of Exceedences				0	0	0							0	0	0
	PM _{2.5}	Maximum 24-Hour				32.1	34.9	32.3	29.5	31.7	26.8	25.6	34.8	27	31.8	38.4	26.8
		Mean Annual				14.53	15.58	12.93	11.48	13.35	11.42	11.42	12.34	10.68	13.11	14.24	12.48
		# of Exceedences				0	1	0	0	0	0	0	0	0	0	0	0
Ozone (O ₃) [ppm]	8-Hour	First Highest				0.098	0.093	0.071	0.083	0.085	0.089	0.076	0.092	0.074	0.081	0.09	0.073
		Second Highest				0.097	0.081	0.065	0.079	0.077	0.072	0.076	0.08	0.068	0.08	0.089	0.073
		Third Highest				0.082	0.078	0.065	0.077	0.075	0.072	0.072	0.079	0.067	0.078	0.087	0.071
		Fourth Highest				0.077	0.077	0.064	0.075	0.075	0.069	0.072	0.075	0.067	0.077	0.086	0.067
		# of Days Standard Exceeded				7	4	0	3	2	1	2	3	0	6	18	0
Nitrogen Dioxide (NO ₂) [ppm]	1-Hour Maximum		0.137	0.158	0.188	0.053	0.059	0.062									
	1-Hour Second Maximum		0.128	0.148	0.165	0.052	0.059	0.058									
	Annual Mean		0.031	0.33	0.031	0.015	0.016	0.014									
	# of Days Standard Exceeded		0	0	0	0	0	0									
Sulfur Dioxide (SO ₂) [ppm]	1-Hour Maximum		0.112	0.056	0.056	0.054	0.054	0.067							0.075	0.119	0.183
	3-Hour Maximum		0.077	0.028	0.046	0.03	0.033	0.048							0.037	0.048	0.108
	24-Hour Maximum		0.018	0.011	0.014	0.012	0.01	0.011							0.011	0.012	0.025
	Annual Mean		0.003	0.002	0.002	0.002	0.002	0.002							0.003	0.003	0.003

Table 3-4. Estimated Change in Pollutants for the Northeastern Illinois 8-hour Moderate Ozone and PM2.5 Nonattainment Area

Pollutant	Estimated Net Reduction in Pollutant Burden from New Auto Trips Diverted to Additional Rail Service	Estimated Net Increase in Pollutant Burden from Additional Rail Service	General Conformity State Threshold	Net Change in Pollutant Burden for Mode Shift from Auto to Rail
VOC	1.63	3.18	100	-4.45
NO _x	6.73	50.38	100	+43.65
PM _{2.5}	0.21		none	
PM ₁₀	0.47	1.99	100	+1.52
CO	286.01	9.58	100	-276.43
SO ₂	0.12	4.02	100	+3.90
Pb	0.00		25	
CO ₂	6970.33		none	

Table notes:

◆All values in table are annual tons.

◆Driving distance measured from where fastest driving route crosses nonattainment area border to downtown Chicago.

◆Station to station ridership based on population and distance from Chicago.

◆Assumed auto occupancy of 1.5 persons/vehicle.

◆Auto emission factors = Mobile6.2 2015 LDGV without I&M program, standard/default Mobile inputs except LDGV vmt by facility type (fvmt.def) modified to increase proportion (~80%) of vmt on freeway facilities to more accurately reflect long distance travel.

◆Diesel locomotive emission and fuel consumption rates from "Chicago to St. Louis High Speed Rail Project, Air Quality Technical Report, Appendix A", prepared by DeLeuw, Cather for Illinois Department of Transportation, October 1998.

◆Diesel locomotive pollutant burden includes only revenue service miles. Current emissions and fuel consumption based on rates for F-40 diesel locomotives, future emissions and fuel consumption based on F-70 locomotives.

◆General Conformity State Threshold values from 35 Illinois Administrative Code 255 for marginal and moderate NAA's inside an ozone transport region.

Table 3-5. Estimated Change in Pollutants for the St. Louis 8-hour Moderate Ozone Nonattainment Area

Pollutant	Estimated Net Reduction in Pollutant Burden from New Auto Trips Diverted to Additional Rail Service	Estimated Net Increase in Pollutant Burden from Additional Rail Service	General Conformity State Threshold	Net Change in Pollutant Burden for Mode Shift from Auto to Rail
VOC	0.41	0.14	100	-0.27
NO _x	0.36	2.12	100	+1.76
PM _{2.5}	0.01		none	
PM ₁₀	0.02	0.08	100	+0.06
CO	15.35	0.41	100	-14.94
SO ₂	0.01	0.17	100	+0.16
Pb	0.00		25	
CO ₂	374.08		none	

Table notes:

- ◆All values in table are annual tons.
- ◆Driving distance measured from where fastest driving route crosses nonattainment area border to downtown Chicago.
- ◆Station to station ridership based on population and distance from Chicago.
- ◆Assumed auto occupancy of 1.5 persons/vehicle.
- ◆Auto emission factors = Mobile6.2 2015 LDGV without I&M program, standard/default Mobile inputs except LDGV vmt by facility type (fvmt.def) modified to increase proportion (~80%) of vmt on freeway facilities to more accurately reflect long distance travel.
- ◆Diesel locomotive emission and fuel consumption rates from “Chicago to St. Louis High Speed Rail Project, Air Quality Technical Report, Appendix A”, prepared by DeLeuw, Cather for Illinois Department of Transportation, October 1998.
- ◆Diesel locomotive pollutant burden includes only revenue service miles. Current emissions and fuel consumption based on rates for F-40 diesel locomotives, future emissions and fuel consumption based on F-70 locomotives.
- ◆General Conformity State Threshold values from 35 Illinois Administrative Code 255 for marginal and moderate NAA’s inside an ozone transport region.

Potential Local Air Quality Impacts

Along the Rail Right-of Way. The project would increase diesel emissions (PM₁₀, PM_{2.5}) along the rail line. An analysis was therefore conducted, using EPA’s NONROAD emission factors for diesel locomotives and EPA’s AERMOD dispersion algorithm, to estimate the potential impacts of these emissions at sensitive land uses (residences, playgrounds, etc.) near the rail line. The result of this analysis is that the project is not predicted to measurably increase PM_{2.5} concentrations at sensitive land uses that may abut the rail right-of way. Further, it is unlikely that these increases would cause or exacerbate a violation of the applicable air quality standards.

At Train Stations. The project is anticipated to increase vehicular (automobile) traffic near the proposed stations locations. However, given the small increase in train service, the increase in vehicular traffic would be small, and it is unlikely that the project would, therefore, result in adverse air quality impacts.

The project is not anticipated to measurably increase roadway diesel traffic near stations and parking facilities. As such, it is unlikely that the project would increase MSAT levels on local roadways near these facilities. The frequency of the anticipated train service is unlikely to result in a measurable increase in emissions. Therefore, the project is unlikely to adversely affect local air toxic levels.

At-Grade Crossings. The project may increase vehicular delays at some at-grade crossings. However, given the small increase in train service, it is unlikely that these delays would result in any substantial impact on air quality levels.

Maintenance/Storage Yards. The additional trains associated with this action would increase maintenance and storage requirements and possibly train operations at these yards. However, it is unlikely that the small increase in these operations would adversely impact nearby sensitive land uses.

It is also unlikely, given the small projected increase in emissions from the increase in rail service and the offset of these emissions by decreases in vehicular emissions, that the project would substantially increase regional emissions of O₃ precursors, air toxics, or GHG.

Construction Impacts

In general, construction-related effects of the project would be limited to short-term increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls would be followed.

GHG emissions would also be generated during the construction phase of the project. However, these emissions are likely to be relatively minor given the nature and size of the project, and the limited duration of the construction activities.

3.1.1.3 Mitigation

To control local air pollution impacts during project construction, a permit may be required for portable bituminous and concrete plants that may be used in project construction.

Based on the above information, mitigation during project operation is not required.

Energy

Current energy consumption that results in pollutant emissions occurs with the four basic transportation modes used for travel in the project corridor — air, rail, bus, and automobile. In general, Amtrak passengers account for about 2 percent of person-kilometers (person-miles) traveled in the corridor, while automobile traffic accounts for approximately 84 percent. Airlines account for about 13 percent of travel. In addition, other vehicular transport by rail and motor vehicles results in energy consumption and resultant emissions. Based on a net VMT reduction of approximately 69,000,000/year, the annual reduction in

fuel is estimated to be 2,900,000 auto fuel gallons per year. Annual diesel locomotive fuel consumption for revenue service is estimated at 934,000 gallons per year.

Energy Consumption During Project Construction

No-Build Alternative: The No-Build alternative would not require construction. Therefore, no changes in energy consumption are expected.

Preferred Alternative: During construction of the second mainline track, additional energy would be expended beyond what would be used for project operation. This additional energy would be consumed on a short-term basis by construction of improvements and by construction-related delays to existing rail traffic. However, once the project is operational, long-term energy savings are expected.

Energy Consumption During Project Operation

The No-Build and Preferred Alternatives are considered herein in terms of their potential to realize savings in energy consumed by all major modes of transportation in the Chicago - St. Louis corridor. Under existing conditions, travel by rail is more energy efficient than travel by air or private automobile; the rail system consumes approximately 1.4 percent of all energy used for intercity passenger service, although it serves 2 percent of that passenger service. Since rail capacity can be increased at a relatively small incremental cost, any substantial increase in rail ridership that would arise from implementation of the Preferred Alternative would result in conservation of travel-related energy.

Passenger rail service under the No-Build alternative would be a continuation of the existing daily roundtrips between Chicago and St. Louis, with the amount of diesel fuel consumed per round trip assumed to remain the same as under existing conditions. Under the No-Build alternative, increased ridership resulting from the normal travel growth in the corridor would be accommodated by adding more cars to existing trains. The additional energy required to haul added weight could be compensated for by use of more efficient locomotives in the future.

3.1.2 Floodplains

3.1.2.1 Existing Conditions

Federal protection of floodplains is afforded by Executive Order 11988, "Floodplain Management," and by implementation of federal regulations under 44 CFR 9.00. These regulations direct federal agencies to undertake actions to avoid impacts on floodplain areas by structures built in flood-prone areas. In accordance with these federal directives, the Federal Highway Administration (FHWA) has enacted federal-aid policy guidance and regulations under 23 CFR 650 and the FRA has established procedures under FRA Docket No. EP-1, Notice 5 "Procedures for Considering Environmental Impacts".

The Federal Emergency Management Agency (FEMA) has primary responsibility for identifying flood-prone areas. FEMA conducted flood studies for the 12 Illinois counties through which the rail corridor passes (Cook, DuPage, Will, Grundy, Livingston, McLean,

Logan, Sangamon, Macoupin, Jersey, Madison, and St. Clair) and St. Louis County in Missouri to locate the extent of the flooding from a 100-year storm.

There are 19 floodplains within the project area, primarily associated with the river crossings. The primary flood areas are designated as Zone A and Zone AE (special flood hazard areas inundated by 100-year flood, no base flood elevations determined/base flood elevations determined). The proposed station locations in Dwight, Pontiac, Bloomington-Normal, Lincoln, Springfield, Carlinville, Alton, and St. Louis are not within flood zones.

3.1.2.2 Potential Impacts

The No-Build alternative would not impact 100-year floodplains. The Preferred Alternative would not permanently impact 100-year floodplains, but may cause a temporary impact to these floodplains during culvert replacement and potential bridge replacement. Specific project impacts will be evaluated in the Tier 2 documents.

3.1.2.3 Mitigation

Temporarily impacted areas would be restored following construction.

3.1.3 Noise and Vibration

The assessment of the potential for the project to cause adverse noise and vibration effects was accomplished by applying the Screening Analysis guidance provided by the Federal Railroad Administration (FRA) and the Federal Transit Administration (FTA) to the construction of the project and operation of the trains plus associated facilities. To assess noise and vibration from train operations, the *High Speed Ground Transportation Noise and Vibration Impact Assessment* guidance manual (U. S. Department of Transportation Federal Railroad Administration, Final Report; October 2005) was used. This is the most appropriate guidance document for initial screening of the potential effect of the high speed train noise only. For the screening of potential impact from associated facilities such as grade crossings and passenger stations, the *Transit Noise and Vibration Impact Assessment* guidance manual, (U. S. Department of Transportation Federal Transit Administration; FTA-VA-90-1003-06 May 2006), was utilized.

It is important to note that the Screening Analysis process is very conservative and, thus is appropriate at this stage of project development for identifying locations where more detailed analysis would be warranted when more information is available. Experience has shown, and both guidance manuals suggest that a more comprehensive analysis will substantially reduce the overall number of impacts and could indicate that residual impacts can be avoided or reduced to a level of insignificance through project design. The results of the screening analysis are used by the agency responsible for the environmental impact evaluation to determine what form of environmental document will ultimately be required for the project.

The evaluation of the Chicago – Joliet section considered twelve round trips of steel wheel trains per day (21 day, 3 night train trips) running on continuously welded rail at speeds up to 90 miles per hour between stations. The screening distance for existing categories of land use/ambient environmental noise was:

- Adjacent land use type in this section is considered Urban, Noisy Suburban, near existing railroad line – unobstructed view of track: 65 feet from guideway or rail corridor centerline. This screening distance provides a most conservative estimate of potentially impacted sensitive use and identifies the highest number of candidate locations for future study. However, in this existing setting the additional amount of noise contributed from the additional passenger train trips per day in an existing freight railroad corridor is not likely to create adverse noise effects outside the railroad right-of-way.

The evaluation of the Joliet – St. Louis section considered nine round trips of steel wheel trains per day (17 day, 1 night train trips) running on continuously welded rail at speeds up to 110 miles per hour between stations. The screening distance for existing categories of land use/ambient environmental noise was:

- Adjacent land use type for this section of the project is considered Quiet Suburban/Rural, near existing railroad line – unobstructed view of track: 110 feet (110 mph) and 60 feet (60 mph) from guideway or rail corridor centerline. This screening distance provides a most conservative estimate of potentially impacted sensitive use and identifies the highest number of candidate locations for future study.

Note that all categories of noise-sensitive use are grouped by FRA into one category for screening assessment purposes, which is why a 110-feet-from-tracks screening distance. However, as noted above, a more detailed noise impact evaluation will generally result in far fewer and occasionally no adverse effects. As an example, a computer analysis using the FRA's spreadsheet model (based on *High Speed Ground Transportation Noise and Vibration Impact Assessment* formulae plus some reasonable assumptions taken from Appendix G of the FRA guidance manual) indicates that a National Environmental Policy Act (NEPA) adverse noise impact could occur for typical residential use (where people sleep) in Urban/Noisy Suburban areas only if they were located within 10 feet of the track used by twelve round trips per day high-speed trains and in Quiet Suburban/Rural areas only if they were located within 35 feet of the track used by nine round trips per day high-speed trains.

The following facilities and their respective screening distances were also included in this noise assessment:

Passenger rail station

- with horn blowing: 500 feet from center of station,

Passenger rail/at-grade highway crossing,

- with warning horns and bells: 500 feet from center of intersection.

The screening distances were evaluated in the GIS database to identify screening distance versus land uses. A summary of the screening distance evaluation results is shown in Table 3-6. The sites identified along the corridor merit more comprehensive noise analysis as more information becomes available. These locations are predominately residential uses that might be affected by noise from high-speed passenger trains operating between stations or impacts may result from warning horns and bells near at-grade highway/railroad crossings and from station-related activities.

Table 3-6 Summary of Noise Screening Analysis

Description	Existing Ldn	Avg Train Speed (mph)	Distance to Contour (ft)		Number of Buildings within Screening Distance												Number of At-Grade Crossings	
					Rail Alignment				At-Grade Crossings				Stations					
			Rail Alignment	At-Grade Stations	Residential	Schools	Churches	Hospitals	Residential	Schools	Churches	Hospitals	Residential	Schools	Churches	Hospitals		
Chicago to Joliet	62	90	60	500	4	0	0	0	0 ¹	0	0	0	0	0	0	0	0	6
Joliet to Dwight	57	110	110	500	2	0	0	0	108	0	0	0	0	0	0	0	0	18
Dwight	57	60	60	500	0	0	0	0	60	0	1	0	28	0	0	0	0	4
Rural Zone A (Dwight to Pontiac)	57	110	110	500	0	0	0	0	34	0	0	0	0	0	0	0	0	13
Pontiac	57	60	60	500	1	0	0	0	103	0	0	0	33	0	0	0	0	9
Rural Zone B (Pontiac to Bloomington)	57	110	110	500	14	0	0	0	97	0	0	0	0	0	0	0	0	24
Bloomington-Normal	57	60	60	500	0	0	0	0	111	0	0	0	11	0	0	0	0	10
Rural Zone C (Bloomington to Lincoln)	57	110	110	500	8	0	0	0	19	0	1	0	0	0	0	0	0	14
Lincoln	57	60	60	500	0	0	0	0	6	0	1	0	4	0	0	0	0	5
Rural Zone D (Lincoln to Springfield)	57	110	110	500	8	0	0	0	81	0	0	0	0	0	0	0	0	11
Springfield	57	60	60	500	10	0	0	0	408	1	0	0	0	0	0	0	0	24
Rural Zone E (Springfield to Carlinville)	57	110	110	500	86	0	0	0	182	0	2	0	0	0	0	0	0	16
Carlinville	57	60	60	500	1	0	0	0	50	0	0	0	17	0	0	0	0	3
Rural Zone F (Carlinville to St. Louis)	57	110	110	500	29	1	0	0	19	1	0	0	0	0	0	0	0	16
St. Louis Metro Area	57	60	60	500	1	0	0	0	54	1	0	0	0	0	0	0	0	14

1. Identified as quiet zone

The Screening Assessment for potential vibration effects (see Table 3-7) was based on land use coupled with an appropriately conservative screening distance as follows:

- Category 1 uses (buildings where vibrations would interfere with sensitive interior operations): 300 feet from right-of-way line

- Category 2 uses (residences and buildings where people normally sleep): 60 feet from right-of-way line for trains traveling less than 100 mph and 100 feet from right-of-way line for trains traveling more than 100 mph
- Category 3 uses (institutional land use with primarily daytime use): 20 feet from right-of-way line for trains traveling less than 100 mph and 70 feet from right-of-way line for trains traveling more than 100 mph

Table 3-7. Summary of Vibration Screening Analysis

Description	Screening Distance (ft)			Potential Impacts		
	Category 1: Sensitive Interior Operations	Category 2: Residential	Category 3: Institutions (Primarily Daytime Use)	Institutions	Residential	Business
Chicago-St. Louis Corridor	300	60	20	0	70	0

The potential for vibration impacts occurs at approximately 70 locations along the project. These possible impacts are typically associated with residential use. These locations also merit more comprehensive vibration analysis as more information becomes available.

Consistent with both FRA and FTA guidance, the first level of environmental assessment, a Screening Analysis, was performed for the project. This screening evaluation identified very few locations that warrant future, more detailed noise and vibration study. Based on this stage of project development, it is likely that these locations will not be adversely impacted with respect to National Environmental Policy Act criteria as set forth in the FRA noise and vibration impact assessment guidelines.

Specific project noise and vibration impacts will be evaluated in the Tier 2 documents.

3.1.4 Visual Resources

3.1.4.1 Existing Conditions

Guidance

Visual and aesthetic quality in the project area was assessed in accordance with the FHWA guidance titled *Visual Impact Assessment for Highway Projects* (USDOT 1983). Under the FHWA guidance, the visual environment is categorized into the following three geographic levels:

- a. Regional Landscapes – Regional landscapes are discussed in terms of landform, topography and/or land cover components, which include water, vegetation and manmade development.
- b. Landscape Units – Landscape units are within the regional landscape and are essentially “outdoor rooms” that often correspond to places or districts that are named (i.e. downtown). Landscape units are usually enclosed by clear landform or land cover boundaries.
- c. Visual Survey Locations – Visual survey locations are locations of specific interest to persons within the larger regional landscape and landscape unit. Attributes of visual survey locations are described in terms of visual character, visual quality and visually sensitive resources.
 - Visual character is defined by the landform, water, vegetation, and manmade development attributes found within the visual survey location.
 - Visual quality is discussed in terms of the vividness, intactness, and unity. An individual high rating of any one of these attributes does not connote high visual quality. Rather, all three must be highly rated to indicate high quality:
 - Vividness is defined as the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.
 - Intactness is defined as the integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.
 - Unity is defined as the degree to which the visual resources of the landscape join to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or compatibility between landscape elements.
 - Visually sensitive resources are those that are noted because of their potential to be important for scenic, historic or recreational reasons.

Assumptions

The project proposes additional rail service on existing rail lines, the potential renovation and reuse of four stations, and the potential development of three new stations. With respect to each consideration:

- The additional passenger rail service on existing rail lines was not assessed because it includes no new construction of rail sections or crossings; the project would be a minor increase in an existing use on the present facilities; and the duration or frequency of the added trips would not be notable to visual receptors along the corridor.
- Renovation and reuse of stations is discussed in terms of: changes to the design or size of existing structures; changes in site lighting or vegetation; and increase in use that may result in impacts to local visual receptors.
- Potential development of new stations was fully assessed in accordance with the FHWA guidance as stated above, with the exclusion stated immediately below.

Application of FHWA Guidance

The FHWA geographic levels of regional landscape and landscape unit are generally used for projects that exist within a comparatively smaller area than the project and are contiguous in nature. Because the project is distributed over a large area, and its station locations are disjunctive in nature, these geographic levels will not be used. Instead, each station site will be assessed alone in terms of visual quality and potential for impact as the result of project construction and operation.

The 12 stations that lie along the rail corridor are evaluated and include Chicago Union Station, Summit, Joliet, Dwight, Pontiac, Bloomington-Normal, Lincoln, Springfield, Carlinville, Alton, East St. Louis, and St. Louis.

3.1.4.2 Potential Impacts

Chicago Union Station

This site includes an operating train station that is located below grade in the downtown urban environment of Chicago. No changes are proposed to the station other than the implementation of additional passenger rail service. Because of the station's location below grade and no changes being proposed, no visual resource impacts would occur.

Summit Station

This site includes an operating train platform with a shelter and a large, north/south trending large parking lot. It is located at the margin of an urban residential area between the residential uses to the east and forested area to the west. The residence that is nearest to the shelter at the platform is approximately 200 feet away. However, some residences are within 25 feet of the parking lot. The platform, shelter and parking lot have negligible screening between themselves and the residences and many residences have clear views of

these uses. No changes are proposed to the station other than the implementation of additional passenger rail service. The additional rail service would represent a temporary and infrequent visual change. Because of no changes being proposed to the station, and temporary and infrequent visual change to residential viewers, no visual impacts would occur.

Joliet Station

This site includes what appears to be a historic and operating train station that is located in the urban fringe area of downtown Joliet. The station is bounded by roadway and parking lots to the north and west with similar uses beyond, and by elevated tracks to the south and east with rail, office and some residential uses beyond. The residential uses are southeast of the station on a north/south trending roadway. Those in the northern extent of the roadway have views of the rail road and station roof top. No changes are proposed to the station other than the implementation of additional passenger rail service. The additional rail service would represent a temporary and infrequent visual change. Because of no changes being proposed to the station, and temporary and infrequent visual change to residential viewers, no visual impacts would occur.

Dwight Station

This site includes what appears to be an operating train station that is located in the center of the Dwight central business district. The station is surrounded by landscaped parking lots, streets, and commercial and administrative uses. The site appears to be in very good visual condition. Nearby residential uses include one residence approximately 250 feet northwest of the site's western boundary and one residence approximately 330 feet southwest of the site's western boundary. Although these uses are located nearby, impacts to these receptors are not anticipated because the project proposes only a minor increase to the existing use of the station.

Pontiac Station

This site includes an operating train station with on-site commercial uses. It is surrounded by commercial uses to the north, south and west and is adjacent to a city park along its eastern boundary. The site appears to be in good visual condition. Visual impacts are not anticipated because the project proposes only a minor increase to the existing use of the station.

Bloomington-Normal Station

This site includes an operating train station that is located in the center of the Bloomington-Normal urban area. The site itself appears to be in good visual condition. The station is surrounded by parking lots and commercial and light industrial uses. The nearest residential uses are two apartment buildings located approximately 350 southwest of the site. The northeast corner of the northernmost apartment building has a direct and unimpeded view of the train station. However, the train tracks are located beyond the view

of these residential receptors due to other buildings, trees or distance. Although the buildings are located nearby, impacts to these receptors are not anticipated because the project proposes only a minor increase to the existing use of the station. Further, additional trains are located beyond the view of these residential receptors.

Lincoln Station

The Lincoln, Illinois Amtrak station is located in an unattended shelter adjacent to the historic station building which is now a restaurant. This site is located in the center of the Lincoln central business district. The station is surrounded by commercial and light industrial uses with parking lots. The site appears to be in good visual condition and includes one on-site commercial use. No residential uses are nearby. Due to the lack of residential receptors and the fact that the project proposes a minor increase in passenger service that would use this existing facility, no visual resource impacts are anticipated at this site.

Springfield Station

This site includes an operating train station that is located in the center of the Springfield urban area. The site appears to be in relatively good visual condition. The station is surrounded by parking lots and commercial and parking structure uses. The nearest residential uses are apartments in medium- and high-rise structures, above bottom floor commercial or office uses. These are located across the street from the site in all directions. Although, the site is surrounded by residential uses that are intermixed with other uses, visual resource impacts to these receptors are not anticipated because the project proposes only a minor increase to the existing use of the station.

Carlinville Station

This site includes an operating train station that appears to be no more than a large kiosk and parking lot located on the western edge of the Carlinville urban area. The site is surrounded by commercial and industrial uses. Because of the lack of residential receptors at this site, and because the project proposes only a minor increase to the existing use of the station, no visual resource impacts are anticipated.

Alton Station

This site includes an operating train station that is located in the northeastern portion of the Alton suburban area. The site appears to be very good visual condition. The station is adjacent to residential uses on its north and west boundaries, with nearby residential uses across the roadways on its east and south sides. Although, the site is surrounded by residential uses, visual impacts to these receptors are not anticipated because the project proposes only a minor increase to the existing use of the station.

East St. Louis Station

This site includes a new train station that is located on the east side of the project corridor. The site appears to be in very good visual condition. The station is adjacent to the Casino Queen Hotel and Casino on its west boundary and downtown East St. Louis across I-64/70 on its east side. Because of the lack of residential receptors at this site, and because the project proposes only a minor increase to the existing use of the station, no visual resource impacts are anticipated.

St. Louis Station

This site currently contains an operating train station in an area that is bordered by an elevated highway with commercial and industrial uses beyond to the north, other rail and industrial uses to the east and west, and approximately 19 railroad tracks with industrial uses beyond to the south. No changes are proposed to the station other than the implementation of additional passenger rail service and no residential visual receptors are nearby. Because of no changes being proposed and no residential receptors being nearby, no visual resource impacts would occur.

3.1.4.3 Mitigation

Impacts to visual resources would be negligible. As a result, mitigation is not required.

3.1.5 Agriculture

3.1.5.1 Existing Conditions

Outside the urbanized metropolitan areas of Chicago and St. Louis, agriculture is the primary land use in the project corridor, consistent with the land use pattern within the two states. Eighty percent of Illinois is farmland used for the production of crops, timber and livestock. Of the 12 counties that the corridor passes through in Illinois, farmland accounts for over 90 percent of the total county area in Livingston, McLean, and Logan counties, and over 80 percent of the total land area in Grundy and Sangamon counties (Chicago-St. Louis High-Speed Rail Project, Final Environmental Impact Statement, 2004).

Along the corridor, the main agricultural crops are row crops, primarily corn and soybeans.

3.1.5.2 Potential Impacts

Proposed improvements are planned to occur primarily within or adjacent to existing railroad right-of-way. As a result, no impacts to agricultural areas are anticipated.

Several grain elevators are located along the corridor close to the rail line, primarily along the east side of the corridor. Given the proximity of the grain elevators to the rail right-of-way, there is the potential for them to be impacted during project construction or operation. Impacts can include crossing closings in rural areas. See Section 3.3.1.3 for a discussion on adverse travel. Specific project impacts will be evaluated in the Tier 2 documents.

3.1.5.3 Mitigation

Based on final project design, it may be necessary to implement measures to mitigate potential impacts to nearby grain elevators.

3.2 Ecological Systems

This section describes the Ecological Systems to be served or affected by the proposed project. Included in this section is a discussion of the anticipated wetlands, water quality and resources, and threatened and endangered species and special lands effects of the Preferred Alternative. Where appropriate, mitigation measures are identified.

3.2.1 Wetlands and Waters of the US

Wetlands are defined by the US Army Corps of Engineers (USACE) and the USEPA as:

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

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

Section 10 of the Rivers and Harbors Act of 1899 (Title 33 *United States Code* Section 403) and Section 404 of the Clean Water Act (Title 33 *United States Code* Section 1344) authorize permits for placement of structures, dredged, or fill material into the "waters of the United States." All public and private projects must obtain permits. The most likely types of these permits in the study area would be for filling wetlands of streams. Impacts to wetlands and waters of the United States must be replaced. While mitigation requirements under Section 404 and Section 10 are the same for developers and the IDOT regarding wetland loss and replacement, under the Illinois Wetland Protection Act of 1989 (Chapter 415 *Illinois Compiled Statutes* Section 5/), IDOT mitigates for isolated and jurisdictional wetlands.

3.2.1.1 Existing Conditions

Wetlands in the project area were identified using the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping. Detailed field investigations were not performed; however, screening of portions of the project corridor was conducted with field inspections.

There are no wetlands adjacent to the existing or proposed alterations to the stations in Dwight, Pontiac, Bloomington-Normal, Lincoln, Springfield, Carlinville, Alton, and St. Louis. However, by implementing a 100-foot buffer (50 feet from the track centerline), 75 mapped wetlands are found along this corridor. Table 3-8 summarizes the wetland types and designations.

Table 3-8. Summary of Wetlands

Wetland Type	Wetland Designation^{1/}	Number of Wetlands^{2/}
Riverine	R2UBHx and R2UBH	13
Palustrine Unconsolidated	PUBGx, PUBGh, and PUBG	7
Palustrine Scrub-Shrub	PSS1C, PSS1A, and PSS1/EMA	6
Palustrine Forested	PFO1C, PFO1A, and PFO1/EMC	29
Palustrine Emergent	PEMF, PEMCx, PEMC, PEMAh, PEMAf, PEMA, PEM/SS1C, PEM/SS1Ah, and PEM/SS1A	19
Lacustrine Unconsolidated	L1UBHh	1
Total		75

^{1/} Per USFWS NWI mapping. Designations are defined as:
R2UBHx - Riverine, lower perennial, unconsolidated bottom, permanent, excavated
R2UBH - Riverine, lower perennial, unconsolidated bottom, permanent
PUBGx - Palustrine unconsolidated bottom, intermittently exposed, excavated
PUBGh - Palustrine unconsolidated bottom, intermittently exposed, diked/impounded
PUBG - Palustrine unconsolidated bottom, intermittently exposed
PSS1C - Palustrine scrub-shrub, broad-leaved deciduous, seasonal
PSS1A - Palustrine scrub-shrub, broad-leaved deciduous, temporary
PSS1/EMA - Palustrine scrub-shrub, broad-leaved deciduous/emergent, temporary
PFO1C - Palustrine, forested, broad-leaved deciduous, seasonal
PFO1A - Palustrine, forested, broad-leaved deciduous, temporary
PFO1/EMC - Palustrine, forested, broad-leaved deciduous/emergent, seasonal
PEMF - Palustrine, emergent, semipermanent
PEMCx - Palustrine, emergent, seasonal, excavated
PEMC - Palustrine, emergent, seasonal
PEMAh - Palustrine, emergent, temporary, diked/impounded
PEMAf - Palustrine, emergent, temporary, farmed
PEMA - Palustrine, emergent, temporary
PEM/SS1C - Palustrine, emergent/scrub-shrub, broad-leaved deciduous, seasonal
PEM/SS1Ah - Palustrine, emergent/scrub-shrub, broad-leaved deciduous, temporary, diked/impounded
PEM/SS1A - Palustrine, emergent/scrub-shrub, broad-leaved deciduous, temporary
L1UBHh - Lacustrine, limnetic, unconsolidated bottom, permanent, diked/impounded

^{2/} Based on 100-foot wide corridor, 50 feet on either side of existing track.

3.2.1.2 Potential Impacts

The No-Build Alternative would not impact wetlands. The Preferred Alternative is not anticipated to permanently impact wetlands. Temporary impacts to wetlands may occur during construction of culvert replacement and potential bridge replacement. These temporary impacts would cease immediately after construction is completed and wetlands would be restored to their previous condition. Specific minor construction impacts cannot be estimated at this time because they depend on several factors that would be determined

either during final design or by the contractor before or during construction. Specific project impacts will be evaluated in the Tier 2 documents.

To comply with Section 404 of the Clean Water Act, wetlands within or adjacent to the project area would be identified. Potential impacts to any wetland(s) would be assessed, and necessary permits would be obtained from the USACE prior to construction. All attempts would be made to avoid wetlands. If avoidance is not possible, impacts would be minimized to the greatest extent possible. If wetland impacts occur, it is anticipated that a Nationwide Permit 14 for Linear Transportation Projects would be applicable in the Rock Island and St. Louis Districts of the USACE. This nationwide permit requires that not more than 0.5 acres of wetland be impacted.

In the Chicago District of the USACE (which oversees the regulatory program in the six-county Chicago metropolitan area), Regional Permit 3 applies to linear transportation projects. This regional permit requires that cumulative impacts cannot exceed 1.0 acres, and that no single crossing may impact more than 0.25 acre. All of the conditions and requirements of Nationwide Permit 14 and Regional Permit 3 would be followed.

None of the counties along the project corridor have local wetland ordinances with the exception of Will County. Wetland regulations are administered through the Will County Land Use and Zoning Department within unincorporated Will County and through the municipalities in incorporated areas. It is anticipated that Section 401 Water Quality Certification would not need to be obtained separately. The Illinois Environmental Protection Agency (IEPA) has conditioned Section 401 Water Quality Certification applicable to Nationwide Permit 14 and Regional Permit 3.

3.2.1.3 Mitigation

Based on the above and with compliance with required permits and regulations, additional measures to mitigate potential impacts to wetlands are not necessary. If state or state pass through funding is to be utilized on the project, the project would be required to follow the guidelines of the Illinois Interagency Wetland Policy Act (IWPA). The IWPA requires mitigation of all wetland impacts, regardless of size. Additionally, the IWPA recognizes all wetlands and is not subject to the limitations on isolated wetlands that is the current policy of the USACE. On-site mitigation through the IWPA is recognized as within 1 mile of the project site. If on-site mitigation is not feasible, mitigation can be conducted off-site or through mitigation banks, but at a higher mitigation ratio.

3.2.2 Water Quality and Water Resources

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

3.2.2.1 Existing Conditions

Surface Water

IEPA Use Assessments

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

- **Full Support** – Water quality meets the needs of all designated uses protected by the applicable water quality standards.
- **Non-support** – Water quality is severely impaired and not capable of supporting the designated use to any degree.

IEPA 303d Listed Streams

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

Biological Stream Characterization

In addition to water quality data, information regarding the biological health of streams within the project area was obtained. Biological data can be used to evaluate the overall health of a stream, as biota respond to the physical and chemical characteristics of the system they inhabit. The IEPA and Illinois Department of Natural Resources (IDNR) have collected information on fish, benthic macroinvertebrate, and freshwater mussel community composition in the four assessed streams. These data are then made available through agency reports and databases, which were inspected for information pertinent to this study. Specifically, the Biological Stream Characterization (BSC) provides information regarding the health of the fish community within a stream. The BSC is a five-tiered classification system:

- Class A – Unique Aquatic Resource
- Class B – Highly Valued Aquatic Resource
- Class C – Moderate Aquatic Resource
- Class D – Limited Aquatic Resource
- Class E – Restricted Aquatic Resource

Class I Streams

The IDOT and IDNR identify important water resources as Class I streams (IDOT and IDNR 1996). The Class I stream list is comprised of streams that meet any one of the following criteria:

- National Park Service Candidate Wild and Scenic Rivers
- Illinois Natural Areas Inventory (as Aquatic Natural Areas)
- Habitat for listed state or federal species
- IEPA Non-degradation Streams
- High BSC Rating

National Rivers Inventory

National Wild and Scenic is a designation for protected water resources in the U.S. The goal of this designation is to preserve the river in its free-flowing condition. There are no rivers in the project corridor designated as Wild and Scenic. The Nationwide Rivers Inventory (NRI) is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance. Rivers included on this list have the potential to be characterized as National Wild and Scenic Rivers. Under a 1979 **Presidential directive** and related Council on Environmental Quality procedures, all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments (<http://www.nps.gov/nrcr/programs/rtca/nri/>; accessed 09/11/09).

Navigable Waterways

Navigable waterways are generally all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. Section 19 or Section 10/404 permits are required for construction activities in these waters. A list of navigable waterways is provided by the USACE. The project corridor is covered by three USACE districts, including the Chicago District, Rock Island District and St. Louis District.

Groundwater

Groundwater occurs in water-bearing units called aquifers. In Illinois, aquifers are classified as sand-and-gravel aquifers, shallow bedrock aquifers, and deep bedrock aquifers. Within the project area, the principal shallow sand-and-gravel aquifers in Illinois are found in Cook, Will, McLean, Logan and Madison counties. The principal shallow bedrock aquifers are located in Cook and Will counties, while the deep bedrock aquifers lie in the northeastern part of the state, north of Livingston County.

There are no sole source aquifers in Illinois. No regulated groundwater recharge areas are within the project area. United Water Illinois has a source water protection area that is included in the construction zone of the project. The zone for the United Water Illinois well field is southwest of Lincoln Lakes outside the city of Lincoln, in Logan County on the southeast side of the project corridor.

Project Corridor Surface Water

The Chicago to St. Louis rail corridor traverses 10 major watersheds within Illinois, crossing 48 streams. Some water resources are crossed more than once. Table 3-9 summarizes the water resource information and data for each of the stream crossed. The streams are listed in order of crossings, beginning in Chicago.

Great Lakes/Calumet River Basin

The project corridor crosses the South Branch of the Chicago River and the South Fork of the South Branch of the Chicago River in this basin. Both these streams are non-support for fish consumption and generally not considered high quality streams. Both these streams are navigable waterways.

Des Plaines River Basin

The project corridor crosses eight streams are crossed by the project corridor within the Des Plaines River Basin. The project corridor crosses Jackson Creek near Channahon; it has been assessed by the IEPA as fully supporting aquatic life uses. The BSC rating for this stream indicates it is a highly valued aquatic resource. Hickory Creek was not assessed by the IEPA in 2008, but is considered a Class I stream as part of the IDOT/IDNR stream assessment.

Kankakee/Iroquois River Basin

The project corridor crosses three streams within the Kankakee/Iroquois River Basin. Each of the streams have been assessed by the IEPA as fully supporting aquatic life uses. The Kankakee River is also assessed as fully supporting swimming and secondary contact uses and is characterized as a highly valued aquatic resource. It is considered as a Class I stream by IDOT/IDNR due to its Natural Area status and is a navigable waterway.

Upper Illinois/Mazon River Basin

The project corridor crosses three streams in the Upper Illinois Mazon River Basin. The Mazon River is of notable quality as it has been assessed as fully supporting aquatic life uses and is included on the NRI due to its Wild and Scenic qualities. Due to its listing on the NRI, IDOT/IDNR considers the Mazon River a Class I stream. The Mazon River Bed is considered a Natural Area.

Vermillion (Illinois) River Basin

The project corridor crosses five streams in the Vermillion River Basin, including North Creek, which is crossed in three locations. The stream crossings also include Wolf Creek, the Vermillion River, Turtle Creek and Rooks Creek, which have all been assessed as fully supporting aquatic life uses. Wolf Creek and Rooks Creek are considered Highly Valued Aquatic Resources, while the Vermillion River is considered a Moderate Aquatic Resource. However, due to its generally free-flowing condition, the Vermillion River is on the NRI and is considered a Class I stream due to both its Wild and Scenic condition and its Natural Area designation. Rooks Creek is listed on the Class I list due to the potential presence of threatened and endangered species.

Table 3-9. Project Corridor Water Resources

River Crossing	IEPA Designation	Track Crossing Location	County	IEPA Basin	IEPA Basin ^{a/}	Total Drainage Area, sq. miles ^{b/ c/}	Total Length, miles ^{b/ c/}	2008 IEPA Use Assessment ^{a/}					BSC Stream Class ^{d/}	Class I Streams ^{e/}	IEPA 303d Listed (Priority) ^{a/}	National Rivers Inventory ^{f/}	Navigable Waterway ^{g/}
								Aquatic	Fishing	Swimming	Secondary Contact	Public Water Supply					
S. Branch of the Chicago River	HC-01	Chicago	Cook	1	Great Lakes/ Calumet River	Not Available	4.0		N		X		X	--	Medium	--	Yes
S. Fork of the S. Br. Ch. River	HCA-01	Chicago	Cook	1	Great Lakes/ Calumet River	Not Available	Not Available		N		X		X	-	Medium	-	Yes
Cal Sag Channel	H-01	Palos	Cook	2	Des Plaines River	391.0	16.1		N		X		D	--	Medium	--	Yes
Long Run Creek	GHE-01	Lockport	Will	2	Des Plaines River	27.7	14.6	F	X	X	X		X	--	--	--	No
Fiddymet Creek	GHC	Lockport	Will	2	Des Plaines River	4.9	3.7	N	X	X	X		X	--	Medium	--	No
Fraction Run	GHA	Lockport	Will	2	Des Plaines River	6.2	2.7	X	X	X	X		X	--	--	--	No
Hickory Creek	GG-02	Joliet	Will	2	Des Plaines River	109.0	25.3	NOT ASSESSED					C	Yes	--	--	No
Sugar Creek (also Sugar Run)	GF	Joliet	Will	2	Des Plaines River	14.7	8.3	N	X	X	X		D	--	Medium	--	No
Cedar Cr.	GD	Joliet	Will	2	Des Plaines River	14.4	8.5	X	X	X	X		X	--	--	--	No
Jackson Creek	GC-02	Channahon	Will	2	Des Plaines River	52.7	26.4	F	X	X	X		B	--	--	--	No
Prairie Cr.	FA 01	North of Wilmington	Will	10	Kankakee/ Iroquois River	51.5	27.0	F	X	X	X		X	--	--	--	No
Forked Cr.	FB 01	Wilmington	Will	10	Kankakee/ Iroquois River	137.0	39.8	F	X	X	X		C	--	--	--	No
Kankakee River	F-16	Wilmington	Will	10	Kankakee/ Iroquois River	5,165.0	57.2*	F	N	F	F	N	B	NA	Medium	--	Yes
Mazon River	DV 06	Gardner	Grundy	11	Upper Illinois/ Mazon River	524.0	27.4	F	N	X	X	X	X	W&S	Medium	X	No

Table 3-9. Project Corridor Water Resources (continued)

River Crossing	IEPA Designation	Track Crossing Location	County	IEPA Basin	IEPA Basin ^{a/}	Total Drainage Area, sq. miles ^{b/ c/}	Total Length, miles ^{b/ c/}	2008 IEPA Use Assessment ^{a/}					BSC Stream Class ^{d/}	Class I Streams ^{e/}	IEPA 303d Listed (Priority) ^{a/}	National Rivers Inventory ^{f/}	Navigable Waterway ^{g/}
								Aquatic	Fishing	Swimming	Secondary Contact	Public Water Supply					
Woods Run	DVEBA	North of Dwight	Grundy	11	Upper Illinois/Mazon River	Not Available	9.5	X	X	X	X		X	--	--	--	No
Gooseberry Cr. - 2 Crossings	DVEB	Dwight	Livingston	11	Upper Illinois/Mazon River	Not Available	25.9	X	X	X	X		X	--	--	--	No
Wolf Creek	DSL 01	Cayuga	Livingston	12	Vermilion (Illinois) River	Not Available	18.5	F	X	X	X		B	--	--	--	No
North Creek - 3 Crossings	DSU	Pontiac	Livingston	12	Vermilion (Illinois) River	Not Available	Not Available	NOT ASSESSED					X	--	--	--	No
Vermilion River	DS 06	Pontiac	Livingston	12	Vermilion (Illinois) River	75.9	14.1	F	X	N	X	N	C	NA/W&S	Low	X	No
Turtle Cr.	DSM	South of Pontiac	Livingston	12	Vermilion (Illinois) River	Not Available	9.8	F	X	X	X		X	--	--	--	No
Rooks Cr.	DSJ 01	South of Pontiac	Livingston	12	Vermilion (Illinois) River	Not Available	32.6	F	X	X	X		B	Yes	--	--	No
Turkey Creek	DKS	Lexington	McLean	14	Mackinaw River	Not Available	10.2	N	X	X	X		B	--	Medium	--	No
Mackinaw River - 2 Crossings	DK 20	South of Lexington	McLean	14	Mackinaw River	1,136.0	129.7	F	N	X	X		A	NA/W&S	Medium	X	No
Money Creek	DKP 02	Towanda	McLean	14	Mackinaw River	71.3	34.7	F	X	X	X		C	--	--	--	No
Sugar Creek	EID-C1	Bloomington-Normal	McLean	22	Salt Creek of Sangamon River	498.0	58.6	F	X	X	X		C	--	--	--	No

Table 3-9. Project Corridor Water Resources (continued)

River Crossing	IEPA Designation	Track Crossing Location	County	IEPA Basin	IEPA Basin ^{a/}	Total Drainage Area, sq. miles ^{b/ c/}	Total Length, miles ^{b/ c/}	2008 IEPA Use Assessment ^{a/}					BSC Stream Class ^{d/}	Class I Streams ^{e/}	IEPA 303d Listed (Priority) ^{a/}	National Rivers Inventory ^{f/}	Navigable Waterway ^{g/}
								Aquatic	Fishing	Swimming	Secondary Contact	Public Water Supply					
Goose Cr.	EIDD	Bloomington-Normal	McLean	22	Salt Creek of Sangamon River	2.2	Not Available	N	X	X	X		X	--	--	--	No
Timber Cr.	EIDC 01	Bloomington-Normal	McLean	22	Salt Creek of Sangamon River	Not Available	15.6	F	X	X	X		C	--	--	--	No
Clear Cr.	EIEB	North of Atlanta	Logan	22	Salt Creek of Sangamon River	Not Available	8.3	X	X	X	X		D	--	--	--	No
Kickapoo Creek	EIE 05	Lawndale	Logan	22	Salt Creek of Sangamon River	332.0	60.9	F	X	X	X		B	Yes	--	--	No
Brainards B.	Not Assessed	East Lincoln	Logan	22	Salt Creek of Sangamon River	Not Available	Not Available	NOT ASSESSED					X	--	--	--	No
Salt Creek	EI 03	Lincoln	Logan	22	Salt Creek of Sangamon River	1,868.0	117.6	F	X	X	X		C	NA	--	--	No
Elkhart Slough	Not Assessed	Elkhart	Logan	22	Salt Creek of Sangamon River	Not Available	Not Available	NOT ASSESSED					X	--	--	--	No
Wolf Cr.	EN 01	Williamsville	Logan/Sangamon	20	Lower Sangamon River	Not Available	16.0	X	X	X	X		D	--	--	--	No

3.0 Environmental Resources, Impacts and Mitigation

Table 3-9. Project Corridor Water Resources (continued)

River Crossing	IEPA Designation	Track Crossing Location	County	IEPA Basin	IEPA Basin ^{a/}	Total Drainage Area, sq. miles ^{b/ c/}	Total Length, miles ^{b/ c/}	2008 IEPA Use Assessment ^{a/}					BSC Stream Class ^{d/}	Class I Streams ^{e/}	IEPA 303d Listed (Priority) ^{a/}	National Rivers Inventory ^{f/}	Navigable Waterway ^{g/}
								Aquatic	Fishing	Swimming	Secondary Contact	Public Water Supply					
Fancy Cr.	EM	Sherman	Sangamon	20	Lower Sangamon River	38.5	15.8	F	X	X	X		X	--	--	--	No
Sangamon River	E 26	Springfield	Sangamon	20	Lower Sangamon River	5,419.0	240.9	N	N	N	X		C	NA/W&S	Medium	X	Yes
Spring Cr.	EL-01	Springfield	Sangamon	20	Lower Sangamon River	125.0	38.4	N	N	N	X		C	--	Medium	--	No
Panther Creek - 2 Crossings	EE-01	Auburn	Sangamon	20	Lower Sangamon River	23.8	14.5	N	X	X	X		C	--	Medium	--	No
Sugar Creek	EOA 04	Thayer	Sangamon	20	Lower Sangamon River	283.0	51.1	N	X	X	X		C	--	Medium	--	No
Hurricane Cr.	DAI	Beaver Dam State Park	Macoupin	18	Lower Illinois/Macoupin Creek	Not Available	17.6	X	X	X	X		X	--	--	--	No
Macoupin Creek	DA-04/05	Beaver Dam State Park	Macoupin	18	Lower Illinois/Macoupin Creek	961.0	98.6	N	X	N	X		B	--	DA04: Med DA05: High	--	No
May Branch	DAZJ	Beaver Dam State Park	Macoupin	18	Lower Illinois/Macoupin Creek	Not Available	7.6	X	X	X	X		X	--	--	--	No
Coop Branch	DAZI	Shipman	Macoupin	18	Lower Illinois/Macoupin Creek	Not Available	7.5	X	X	X	X		X	--	--	--	No
Black Cr.	JRBA	Alton	Madison	27	Mississippi South Central River	Not Available	3.1	X	X	X	X		X	--	--	--	No
Coal Branch Creek	Not Assessed	Alton	Madison	27	Mississippi South Central River	Not Available	Not Available	X	X	X	X		X	--	--	--	No

Table 3-9. Project Corridor Water Resources (continued)

River Crossing	IEPA Designation	Track Crossing Location	County	IEPA Basin	IEPA Basin ^{a/}	Total Drainage Area, sq. miles ^{b/ c/}	Total Length, miles ^{b/ c/}	2008 IEPA Use Assessment ^{a/}					BSC Stream Class ^{d/}	Class I Streams ^{e/}	IEPA 303d Listed (Priority) ^{a/}	National Rivers Inventory ^{f/}	Navigable Waterway ^{g/}
								Aquatic	Fishing	Swimming	Secondary Contact	Public Water Supply					
Wood R.	JR 02	Alton	Madison	27	Mississippi South Central River	123.0	2.4	N	X	N	X		D	--	Medium	--	No
Cahokia Creek (or Channel)	JQ 07	South of Alton	Madison	27	Mississippi South Central River	263.0	51.7	N	X	X	X		C	--	Medium	--	No
Cahokia Canal	JN-02	East St. Louis	St. Clair	27	Mississippi South Central River	Not Available	14.1	N	X		X		C	--	Medium	--	No
Mississippi River	J-36	East St. Louis / St. Louis	St. Clair/St. Louis	27	Mississippi South Central River	1,245.00 0.0	2,350.0	F	N	N	X	N	X	--	Medium	--	Yes

* - Miles In Illinois

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

NA: Natural Area / W&S: Wild and Scenic

Sources:

a/ Illinois Environmental Protection Agency. 2008. Illinois Integrated Water Quality Report and Section 303(d) List.

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

c/ Healy, R.W. 1979. River Mileages and Drainage Areas for Illinois Streams - Volume 1, Illinois Except Illinois River Basin. USGS Water Resources Investigations 79-11.

d/ Bertrand, W.A., R.L. Hite, and D.M. Day. 1996. Biological Stream Characterization: Biological Assessment of Illinois Stream Quality through 1993. IEPA/BOW/96-058.

e/ Illinois Department of Natural Resources and Illinois Department of Transportation. 1996. "Natural Resource Review and Coordination Agreement, Class I Streams." #96-14.

f/ United States Department of Interior. 1982. National Wild and Scenic River System Components. [Http://www.rivers.gov/guidelines.html](http://www.rivers.gov/guidelines.html)

g/ Illinois Administrative Code. Title 17: Conservation, Chapter I: Department of Natural Resources, Subchapter 11: Water Resources, Section 3704 Appendix A: Public Bodies of Water.

Mackinaw River Basin

The project corridor crosses three streams are crossed by the project corridor in the Mackinaw River Basin, including the Mackinaw River which is crossed in two locations. The Mackinaw River and Money Creek are both assessed by the IEPA as fully supporting aquatic life uses, while Turkey Creek is non-supporting for aquatic life uses. The Mackinaw River has been characterized as a Unique Aquatic Resource, is on the NRI and is considered a Class I stream due to both its Wild and Scenic condition and its Natural Area designation. Turkey Creek is considered a Highly Valued Aquatic Resource, while Money Creek is considered a Moderate Value Aquatic Resource.

Salt Creek of Sangamon River Basin

The project corridor crosses eight streams within the Salt Creek of Sangamon River Basin, including four streams assessed as fully supporting aquatic life uses (Sugar Creek, Timber Creek, Kickapoo Creek and Salt Creek). Kickapoo Creek and Salt Creek are both considered Class I streams, with Salt Creek identified as such due to its Natural Area designation. Timber Creek is not included on the Class I list of streams, but is considered a Natural Area. Two streams, Brainards Branch and Elkhart Slough, are not assessed by the IEPA or part of the BSC.

Lower Sangamon River Basin

The project corridor crosses six streams in the Lower Sangamon Basin. Four of them are assessed by the IEPA as not supporting aquatic life uses. Fancy Creek fully supports aquatic life uses and the last stream; Wolf Creek was not assessed. The Sangamon River, while characterized as only a Moderate Aquatic Resource as part of the BSC, is considered as Class I stream due to both its Wild and Scenic condition and its Natural Area designation. It is also on the NRI and is a navigable waterway.

Lower Illinois/Macoupin River Basin

The project corridor crosses four streams in the Lower Illinois/Macoupin River Basin. Only Macoupin Creek has been assessed by the IEPA and is non-support for aquatic life and swimming uses. It is characterized as a Highly Valued Aquatic Resource. The crossing of Macoupin Creek is near the Beaver Dam State Park.

Mississippi South Central River Basin

The project corridor crosses six streams in the Mississippi South Central River Basin, the last basin to be traversed by the corridor. Only the Mississippi River has been assessed as full support for aquatic life uses. The others are non-support (three streams) or were not assessed (two streams). The Mississippi River is a navigable waterway in the area of the crossing.

Potential Impacts

The No-Build Alternative would not impact waterways or water quality. The Preferred Alternative is not anticipated to permanently impact waterways or water quality. Temporary impacts to waterways may occur during culvert replacement and potential

bridge replacement. The temporary impacts would cease immediately after the activity is completed. Some specific minor construction impacts cannot be estimated at this time because they depend on several factors that would be determined either during final design or by the contractor before or during construction. Construction impacts would be minimized and mitigated using Best Management Practices. Specific project impacts will be evaluated in the Tier 2 documents.

Mitigation

To comply with Section 404 of the Clean Water Act, waterways within or immediately adjacent to the project area will be identified. Impacts to waterway(s) will be assessed and necessary permits will be obtained from the USACE prior to construction. All attempts will be made to avoid waterways. If avoidance is not possible, impacts will be minimized to the greatest extent possible. If impacts result, it is anticipated that a Nationwide Permit 14 for Linear Transportation Projects would be applicable in the Rock Island and St. Louis District Corps of Engineers. This nationwide permit requires that not more than a 0.5 acres of "waters of the US"/wetlands be impacted. In the Chicago District (that oversees the regulatory program in the six-county Chicago metropolitan area), Regional Permit 3 applies to linear transportation projects. This regional permit requires that cumulative impacts cannot exceed 1.0 acres, and no single crossing may impact more than 0.25 acres. All of the conditions and requirements of Nationwide Permit 14 and Regional Permit 3 will be followed. It is anticipated that Section 401 Water Quality Certification will not need to be obtained separately. The IEPA has conditional Section 401 Water Quality Certification applicable to Nationwide Permit 14 and Regional Permit 3.

3.2.2.2 Project Corridor Groundwater

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

Several hundred private well-heads lie within 200 feet of the project corridor. This distance is the minimum setback for private water supplies. All of the private wells are outside of the railroad drainage ditch that should act as adequate confinement for any diesel fuel spills (Chicago-St. Louis High-Speed Rail Project Final Environmental Impact Statement, 2004).

Potential Impacts

The No-Build Alternative would not impact groundwater. The Preferred Alternative is not anticipated to impact groundwater. Specific project impacts will be evaluated in the Tier 2 documents.

Mitigation

As impacts to groundwater are not anticipated, mitigation is not anticipated.

3.2.3 Threatened and Endangered Species and Special Lands

3.2.3.1 Existing Conditions

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

Threatened and Endangered Species

Various species receive federal and state protection to help repair previous damage to populations and to attempt to return the species population to self-sustaining levels. Other species receive state protection if the limits of their distribution ranges are within the particular state of concern (Illinois and Missouri) or if populations can only exist in a specific but uncommon habitat in these states. Agency coordination was conducted to determine if federal or state-listed threatened or endangered species are known to exist in the project area.

Table 3-10 summarizes the USFWS federally endangered and threatened, and candidate species by county within the project limits. According to the USFWS, the Candidate Conservation Program assesses species and develops and facilitates the use of voluntary conservation tools for the conservation of candidate and other species-at-risk and their habitats, so that these species do not need the protection of the ESA. The USFWS accomplishes this by working in partnership with public and private landowners.

In 2007, the USFWS indicated that no Indiana bats were located in the six-county Chicago metropolitan area, based on extensive surveys over two years in various locations. A known hibernaculum is present in LaSalle County west of the proposed project. Indiana bats may occur in counties south of the Chicago Metropolitan area.

Currently, extensive surveys are being conducted in the Des Plaines River Valley for the Hine's emerald dragonfly which is known to occur at various locations in the valley. Surveys have been conducted within the project corridor at various times since the late 1980s. Hines Emerald Dragonflies have been observed along the rail corridor at New Avenue near Lemont, Illinois. As part of required mitigation, the Illinois Tollway is restoring Hines Emerald Dragonfly habitat within forest preserve sites in Cook, DuPage, and Will counties. Breeding activity is currently occurring in the Des Plaines River Valley near the project corridor.

Table 3-10. USFWS Federally Endangered and Threatened Species List By County

County	Species	Status	Habitat
Cook	Indiana bat (<i>Myotis sodalis</i>)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover (<i>Charadrius melodus</i>)	Endangered	Lakeshore beaches
	Hine's emerald dragonfly (<i>Somatochlora hineana</i>)	Endangered	Spring fed wetlands, wet meadows and marshes
	Eastern prairie fringed orchid (<i>Platanthera leucophaea</i>)	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Leafy-prairie clover (<i>Dalea foliosa</i>)	Endangered	Prairie remnants on thin soil over limestone
	Mead's milkweed (<i>Asclepias meadii</i>)	Threatened	Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil
	Prairie bush clover (<i>Lespedeza leptostachya</i>)	Threatened	Dry to mesic prairies with gravelly soil
DuPage	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Hine's emerald dragonfly	Endangered	Spring fed wetlands, wet meadows and marshes
	Eastern prairie fringed orchid	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Leafy-prairie clover	Endangered	Prairie remnants on thin soil over limestone
	Mead's milkweed	Threatened	Late successional tallgrass, prairie tallgrass, prairie converted to hay meadow, and glades or barrens with thin soil
	Prairie bush clover	Threatened	Dry to mesic prairies with gravelly soil
Grundey	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
Jersey	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (<i>Boltonia decurrens</i>)	Threatened	Moist, sandy, floodplains, and wet prairies
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
Livingston	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
Logan	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies

Table 3-10. USFWS Federally Endangered and Threatened Species List By County (continued)

County	Species	Status	Habitat
Macoupin	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
Madison	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern (<i>Sterna antillarum</i>)	Endangered	<i>Bare alluvial and dredged spoil islands</i>
	Pallid sturgeon (<i>Scaphirynchus albus</i>)	Endangered	Large rivers
	Decurrent false aster	Threatened	Moist, sandy, floodplains, and wet prairies
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
McLean	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
Saint Clair	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern	Endangered	<i>Bare alluvial and dredged spoil islands</i>
	Pallid sturgeon	Endangered	Large rivers
Saint Clair	Illinois cave amphipod (<i>Gammarus acherondytes</i>)	Endangered	Cave streams in Illinois sinkhole plain
	Decurrent false aster	Threatened	Disturbed alluvial soils
Sangamon	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Sheepnose mussel	Candidate	Rivers
	Eastern prairie fringed orchid	Threatened	Mesic to wet prairies
Will	Indiana bat	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Hine's emerald dragonfly	Endangered	Spring fed wetlands, wet meadows and marshes
	Eastern Massasauga	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)

Table 3-11 summarizes the IDNR state listed threatened and endangered species within the project limits. This information was obtained by IDNR through the Natural Heritage Database using an existing screening distance of 50 feet on either side of the existing track.

**Table 3-11. Summary of Illinois Threatened and Endangered Species
 Along the Project Corridor**

Species	Status	Habitat
Large Ground Plum (<i>Astragalus crassicaarpus</i> var. <i>trichocalyx</i>)	Endangered	Bluff prairies near the Mississippi and lower St. Croix Rivers, grasslands
Upland Sandpiper (<i>Bartramia longicauda</i>)	Endangered	Pastures, upland meadows, fallow fields and open grassy areas
Oklahoma Grass Pink Orchid (<i>Calopogon oklahomensis</i>)	Endangered	Wet bogs, meadows, ditches, in sandy acidic soils
Leafy Prairie Clover	Endangered	Prairie remnants on thin soil over limestone
Spike Rush (<i>Eleocharis rostellata</i>)	Threatened	Marshes, shallow water of lakes, ponds, and stream beds
Spike (<i>Elliptio dilatata</i>)	Threatened	Small to large rivers, also known to inhabit reservoirs and lakes, found in sand and gravel substrates
Blanding's Turtle (<i>Emydoidea blandingii</i>)	Threatened	Marshes, creeks, wet prairies, sloughs and fens and the edges of lakes and ponds
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	Threatened	Grasslands interspersed with scattered trees and shrubs that provide nesting and perching sites
Blazing Star (<i>Liatris scariosa</i> var. <i>nieuwlandii</i>)	Threatened	Open, dry, low nutrient sandy soils in grasslands and barrens
Black Sandshell (<i>Ligumia recta</i>)	Threatened	Medium-sized to large creeks and rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more
Bunchflower (<i>Melanthium virginicum</i>)	Threatened	Swamp forests, wet meadows
River Redhorse (<i>Moxostoma carinatum</i>)	Threatened	Medium and large sized rivers with moderate to strong currents and gravel or cobble substrates
Eryngium Stem Borer (<i>Papaipema eryngii</i>)	Endangered	Wet or dry prairies
Sheepnose mussel (<i>Plethobasus cyphus</i>)	Endangered	Shallow shoal habitats with moderate to swift currents over sand and gravel substrate in larger rivers
Royal Catchfly (<i>Silene regia</i>)	Endangered	Mesic black soil prairies, savannas, scrubby barrens, open areas along roads and railroads and forest openings
Salamander Mussel (<i>Simpsonaias ambigua</i>)	Endangered	Medium to large rivers and lakes in silt sand or under stones
Hine's Emerald Dragonfly	Endangered	Spring fed wetlands, wet meadows and marshes
Franklin's Ground Squirrel (<i>Spermophilus franklinii</i>)	Threatened	Tall grass and mid-grass prairies in old fields, roadsides, railroad rights-of-way, fencerows, ditch banks, cemeteries
Ear-leafed Foxglove (<i>Tomanthera auriculata</i>)	Threatened	Mesic black soil prairies, thickets, savannas, open areas along roads and railroads and forest openings, woodland borders
Slender Bog Arrow Grass (<i>Triglochin palustris</i>)	Threatened	Muddy to marley fen and bog edges and calcareous sedge meadows
Lined Snake (<i>Tropidoclonion lineatum</i>)	Threatened	Grasslands and urban lots in former prairies

Prior to additional station development, increase in train speed or frequencies, or track construction, specific information concerning the presence of the state and federal listed species would be obtained, and further coordination with Resource Agencies undertaken. In some cases, based on habitat conditions within the project limits, surveys for individual species may be required.

Special Lands

The IDNR has provided information on special lands within the project corridor. These include Illinois Natural Areas Inventory (INAI) sites and Nature Preserves. Table 3-12 identifies the dedicated INAI sites in or near the project corridor. As shown in Table 3-12, INAI sites are located adjacent to the existing railroad tracks. Identified as railroad or siding prairies, these INAI sites are scattered throughout the length of the project and may be located within the railroad right-of-way.

Table 3-12. Summary of INAI Sites Along the Project Corridor

INAI Site	Nearest Town / County
Braceville Railroad Prairie	Braceville / Grundy
Carlinville Railroad Prairie	Carlinville / Macoupin
Chouteau Botanical Area	Madison
Denby Prairie	Macoupin
Funks Grove	Funks Grove / McLean
Godley Railroad Prairie	Will
Hitts Siding Prairie	Will
Joliet Army Ammunition Plant	Joliet / Will
Kankakee River	Will
Mackinaw River	McLean
Mazon River Bed	Morris / Grundy
Mazonia Railroad Prairie	Morris / Grundy
Paw Paw Woods	Willow Springs / Cook
Reiher Barrens	Macoupin
Route 66 Railroad Prairie – Cayuga	Livingston
Salt Creek	Lincoln / Logan
Timber Creek	McLean
Vermilion River – Illinois Drainage	Livingston

Table 3-13 identifies the dedicated Illinois Nature Preserve sites in or near the project corridor. The Illinois Natural Areas Preservation Act (525 ILCS 30/1 – P.A. 82-155) provides that “ areas dedicated as nature preserves are hereby declared to be put to the highest, best, and most important use for the public benefit. They shall be protected, managed and used in the manner provided by rules. They may not be taken under power of eminent domain or by other means for any other use except another public use and except upon approval of the Commission, the Governor, and any public owner of a dedicated interest therein after a finding by the Commission of the existence of an imperative and unavoidable public necessity for such other public use” (Section 14). The Illinois Department of Natural

Table 3-13. Summary of Illinois Nature Preserves Along the Project Corridor

Nature Preserve	Nearest Town / County
Denby Prairie Nature Preserve	Macoupin
Funks Grove Land and Water Reserve	Funks Grove / McLean
Funks Grove Nature Preserve	Funks Grove / McLean
Hitts Siding Prairie Nature Preserve	Will
Paw Paw Woods Nature Preserve	Willow Springs / Cook
Thaddeus Stubblefield Grove Nature Preserve	Funks Grove / McLean

Resources (IDNR) adds that the imperative and unavoidable public necessity for another public use standard has never been met before. Table 3-14 identifies the parks and 4(f) resources adjacent to the project corridor.

Table 3-14. Summary of Parks and 4(f) Resources

Parks/4(f) Resources	Nearest Town / County
Alton Municipal Golf Course	Alton / Madison
Beaver Dam State Park	Carlinville / Macoupin
Hanover Park	Summit / Cook
Hartford Park	Hartford / Madison
Jefferson NTNL Expansion Park	East St. Louis / St. Clair
Leclaire Courts-Hearst Park	Chicago / Cook
Lee Park	Venice / Madison
Malcom W. Martin Memorial Park	East St. Louis / St. Clair
Midewin Tall Grass Prairie	Elwood / Will
Hoyne Playground Park	Chicago / Cook
Railsplitter State Park	Lincoln / Logan
Stars and Stripes Park	Chicago / Cook
Westside Park	Lockport / Will

As shown in Table 3-13, Nature Preserves are located adjacent to the existing railroad tracks. The Hitts Siding Prairie Nature Preserve, Denby Prairie Nature Preserve, and Funks Grove Nature Preserve, which are also identified as INAI sites, may be located within the right-of-way.

Funks Grove includes a Nature Preserve, Land and Water Reserve, Timber Creek INAI site, and Sugar Grove Nature Center. The Nature Preserve and Nature Center are adjacent to the railroad and are within the railroad right-of-way. In addition, the railroad crosses Timber Creek INAI Site. Funks Grove is a high-quality upland and floodplain forest and includes the largest remaining intact prairie grove in Illinois. Portions of the preserve have been

designated a National Natural Landmark by the U.S. Department of the Interior¹. Timber Creek supports a population of state-threatened mussels².

Hitts Siding Prairie Nature Preserve, located west of Wilmington, has four endangered or threatened species.³ Several additional unnamed native railroad prairies are located along the project corridor.

In addition to the above, Illinois State Parks were identified within or adjacent to the proposed project area. Edward Madigan State Park, formerly known as Railsplitter State Park, is located south of Lincoln, in Logan County, on the east side of the railroad tracks and within the railroad right-of-way. Beaver Dam State Park is located approximately 200 feet west of the railroad tracks south of Carlinville in Macoupin County.

3.2.3.2 Potential Impacts

These sites may be located within the railroad right-of-way. These INAI sites are scattered throughout the length of the project. Avoidance of these sites may be impractical due to their proximity to the existing tracks. Construction of station buildings and parking have the potential to impact these sites. Also, the addition of new mainline rail, sidings, or related railroad infrastructure could impact these sites.

Several of the INAI sites are considered to be rivers and streams that are crossed by the proposed project. Temporary impacts to these sites could occur by construction or rehabilitation of existing bridges over these streams.

Nature Preserves are located adjacent to the existing railroad tracks and could be affected. Specifically, the Hitts Siding Prairie, Denby Prairie, and Funks Grove Nature Preserves, also INAI sites, may be located within the right-of-way and, therefore, have the potential to be impacted. Specific project impacts will be evaluated in the Tier 2 documents.

3.2.3.3 Mitigation

Permanent impacts to INAI sites can be avoided through proper design and construction practices.

Avoidance of Nature Preserve sites is required by Illinois law. Therefore, improvements to the existing railroad right-of-way would be required to consider the location of dedicated Nature Preserves.

Proposed station locations or station improvements can be sited to avoid impacts to INAI sites, nature preserves, and state parks through coordination and consultation with the USFWS and IDNR.

¹ www.sugargrovenaturecenter.org

² <http://dnr.state.il.us>

³ <http://dnr.state.il.us>

Coordination would also be conducted regarding the potential for the project to affect federal or state threatened or endangered species. This coordination and consultation would continue as appropriate to assure that appropriate mitigation measures are incorporated into the project so that impacts to protected plant and animal species are minimized or avoided.

3.3 Human Environment

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

3.3.1 Transportation

This section summarizes the transportation impacts expected under the No-Build and Preferred alternatives. Projected annual person trips for rail, air, bus, and automobile intercity travel are presented. Additionally, impacts to future freight and commuter rail operations and vehicular traffic are discussed, including impacts from construction and vehicular impacts associated with the changes proposed at the highway-railroad grade crossings in the corridor.

This document has been prepared as an Environmental Assessment subsequent to the Record of Decision that was received for the Final Environmental Impact Statement (EIS) for the Chicago-St. Louis High-Speed Rail Project in 2003. As such, it summarizes information from the FEIS and DEIS. The FEIS and DEIS can be referenced for additional information on any of the topics discussed in this section.

3.3.1.1 PROJECTED RIDERSHIP

Ridership projections for this project were developed as part of the Financial and Implementation Plan and were presented in the Ridership Forecast Technical Report (Wilbur Smith Associates, 1994). These forecasts were used when evaluating alternatives in the Draft EIS. Since the high-speed rail (HSR) forecasts were developed, simulated end-to-end running times have increased and the proposed frequency of service has been reduced from eight round trips per day to three. A cursory analysis was conducted to modify the ridership forecasts to reflect these changes. As a result, projected annual rail ridership in the Chicago - St. Louis corridor was reduced from approximately 1.3 million to 600,000.

No-Build Alternative: Based on the developed forecasts, rail passenger ridership in the corridor is projected to increase 50 percent from 1998 by the year 2010 to 406,000 annual passengers under the No-Build Alternative. This ridership increase reflects overall population and travel demand growth in the corridor. The No-Build Alternative is not

projected to divert additional travelers from other modes, as this alternative is a continuation of existing Amtrak service.

Preferred Alternative: Projected ridership for the Preferred Alternative is approximately 601,700 annual passengers. This projected ridership level is 50 percent greater than for rail passenger service projected for the No-Build Alternative. Increased train speeds will result in rail passenger service being a more viable transportation mode in the corridor. As such, most of this additional ridership can be attributed to travelers diverting from other modes of travel to HSR because of the enhancements in service. It is projected that approximately 31 percent of HSR passengers in the year 2010 will be travelers diverted from other modes. Sixty-seven percent of the ridership will be generated from existing rail ridership and projected growth, while approximately 2 percent will be realized from induced demand. Table 3-15 lists the projected annual person trips for the four modes of intercity travel in the corridor for both the No-Build and Preferred alternatives.

Table 3-15. Existing and Projected (2010) Annual Person Trips (1,000'S) in the Chicago-St. Louis Corridor

Mode	Alternative					
	Existing (1998)		No-Build (2010)		Preferred (2010)	
	Trips	Percent	Trips	Percent	Trips	Percent
Rail	271	0.8	406	0.9	602	1.3
Air	1,109	3.2	1,391	3.1	1,277	2.9
Bus	98	0.3	211	0.5	204	0.5
Auto	33,675	95.8	42,750	95.5	42,685	95.3
TOTAL	35,153	100	44,758	100	44,768	100

Source: Chicago-St. Louis Draft Environmental Impact Statement

3.3.1.2 ADDITIONAL IMPACTS TO RAIL OPERATIONS

Freight Traffic

No-Build Alternative: With the opening of the Joliet intermodal terminal existing UP freight operations will increase from 6 to 12 daily trips with the No-Build Alternative.

Preferred Alternative: A UP 2017 future growth scenario assumes an increase to 22 total trips per day in the Chicago - St. Louis corridor. Provision of a second main line track and new freight sidings and improvements to existing sidings will address impacts to freight service and passenger train operations to ensure reliability and safety.

Commuter Rail Service

No-Build Alternative: No changes to existing commuter rail service in the Chicago area will be required with the No-Build Alternative. 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.

Preferred Alternative: Implementation of HSR service under the Preferred Alternative will not result in changes in the number of commuter trains operating daily, and scheduling modifications are not anticipated. Under the Preferred Alternative, intercity passenger service will operate on the same tracks as the Metropolitan Rail Corporation (Metra) Heritage Corridor Line between Chicago Union Station and Joliet. Through this area existing maximum speeds will be maintained. Prior to expanding service beyond three round trips per day, an operational review will be conducted to identify potential conflicts with commuter rail service.

Construction Related Impacts on Railroad Operations

No-Build Alternative: Under the No-Build Alternative, construction will be limited to those projects included in the 2003 FEIS.

Preferred Alternative: In general, construction activities for HSR improvements will result in two types of impacts. The first impact will be the requirement to reduce the operating speeds through the construction zones that will add to rail travel time and, in turn, increased cost. The second impact will be the need to adjust the schedule of existing operations to create windows of opportunity for construction activities that require temporary shutdown of rail operations on selected track sections for limited time.

Permission from the railroad owners will be required for construction that will take place within the railroad right-of-way. Schedule adjustments will be required when construction activities will 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.

3.3.1.3 ADDITIONAL IMPACTS TO VEHICULAR OPERATIONS

Grade Crossings

No-Build Alternative: Under the No-Build Alternative, those grade crossing improvements included in the 2004 ROD are included.

All of the grade crossings from Dwight to St. Louis in the project area were evaluated as part of the EIS process. Closure of nonessential grade crossings will enhance the safety of railroad passengers and highway users. Specific recommendations for each crossing are provided in Appendix B of the FEIS.

Preferred Alternative: The project includes \$85 million for grade crossing and road closure improvements. Specific locations will be identified and evaluated in the Tier 2 documents.

Station Access

No Build Alternative: Under the No-Build Alternative, no major changes to station access will occur.

Preferred Alternative: If HSR service is implemented, the existing Amtrak stations will be used. All current Amtrak stations in the corridor have excellent access, except the St. Louis station which is located on the edge of downtown between an elevated freeway and the existing railroad tracks. The new multi-modal transportation terminal planned by the City of St. Louis will substantially improve access to this station.

In Chicago, where public transportation is more important for station access, Union Station is well served by Metra commuter trains, Chicago Transit Authority (CTA) elevated rapid transit lines, and CTA buses. Taxi service is also readily available.

The rail stations in other communities are all located in or near the heart of the town that they serve and are easily accessible to the local patrons. Drop-off and pick-up by friends and relatives is a very common mode of access.

Since much of the increase in rail ridership is projected to come by the way of diversion from air travel (see Section 4.1), the availability of car rental and taxi pick-up/drop-off service will be more important in the future in smaller towns and cities.

3.3.1.4 Intermodal Connections

The proposed Chicago - St. Louis Amtrak service will provide opportunities for many intermodal connections along its route. Specific intermodal connection opportunities at each passenger station location are discussed below.

Chicago, Illinois – Union Station

Chicago's Union Station offers many opportunities for transfers to other modes of public transportation. It is the major hub for existing Amtrak service in Chicago, and will continue to be the Chicago station associated with most of the proposed Midwest Regional Rail System routes and initiatives.

Six Metra commuter rail lines also terminate at Chicago's Union Station, providing convenient cross-platform access to Metra's commuter rail system on the following lines:

- Metra / Milwaukee District – North Line
- Metra / Milwaukee District – West Line
- Metra / North Central Service
- Metra / Burlington Northern Santa Fe Service
- Metra / Heritage Corridor
- Metra / SouthWest Service

Other Metra rail lines terminate at other nearby Chicago stations, providing access to all parts of Chicago and its six surrounding counties.

Union Station is directly served by the CTA buses, including routes 1, 7, 28, 38, 60, 121, 124, 125, 126, 130, 151 and 157. The CTA's heavy rail Blue Line has a station stop two blocks south of Union Station, and access to other CTA heavy rail lines is just three blocks east of Union Station. Additionally, CTA provides convenient connections to Chicago's O'Hare and Midway Airports.

Greyhound Lines bus provides service from its Chicago Terminal to all parts of the United States from its main Chicago Terminal located several blocks from Union Station at 630 W. Harrison Street.

Summit, Illinois

The Summit Station site at Archer Ave and South Center Avenue in Summit, Illinois offers intermodal opportunities for connection to existing transportation services.

Amtrak Lincoln Service and Texas Eagle Service currently serves the Summit Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

Metra's Heritage Corridor also provides service to the Summit Station. The Preferred Alternative for the proposed high-speed Chicago – St. Louis passenger rail service would operate along the same alignment as Metra's Heritage Corridor which also provides service to downtown Chicago, Joliet, and other intermediate stations. Parking is also available at the Summit Station for Metra Heritage Corridor service.

Pace Bus routes 307 and 330 currently serve the Summit Amtrak Station area within several blocks.

Joliet, Illinois

The Joliet Station site offers intermodal opportunities for connection to existing transportation services.

Amtrak Lincoln Service and Texas Eagle Service currently serves Joliet Union Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

The southwestern terminus for both Metra's Heritage Corridor Line and Rock Island Line is in downtown Joliet. The Preferred Alternative for the proposed high-speed Chicago – St. Louis passenger rail service would operate on the same alignment as Metra's Heritage Corridor which also provides service to downtown Chicago and other intermediate stations. The Rock Island service also serves downtown Chicago though different intermediate stations along a more easterly route.

Pace Bus Service provides extensive service to the Joliet area, including Pace route 834 to the Lockport Metra Station on the Heritage Corridor. Pace routes 501, 504, 505, 507, 508, 509, 511, 832, and 834 currently serve the Joliet Amtrak Station. Parking is also available at both the Lockport and Joliet Metra Stations.

Dwight, Illinois

Currently, no regularly scheduled transit bus service operates in Dwight, Illinois. Amtrak Lincoln Service and Texas Eagle Service currently serves the Dwight Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

Pontiac, Illinois

Amtrak Lincoln Service and Texas Eagle Service currently serves the Pontiac Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

Currently, no regularly scheduled transit bus service operates in Pontiac, Illinois.

It is approximately 33 miles from the Pontiac Amtrak Station to the Central Illinois Regional Airport at Bloomington-Normal. Bee Express provides local taxicab service.

Bloomington-Normal, Illinois

Amtrak Lincoln Service and Texas Eagle Service currently serve the Bloomington Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

Bloomington-Normal Public Transit Service (BNPTS) routes A, B, D, E, G, H, and I all serve the Bloomington-Normal Amtrak Station within one to two blocks. Several of these routes also connect with other BNPTS routes, providing connectivity to other parts of Bloomington-Normal.

It is approximately 5 miles from the Bloomington-Normal Amtrak Station to the Central Illinois Regional Airport at Bloomington-Normal.

Greyhound Lines has a limited service bus stop at the Bloomington Amtrak Station and also has a terminal in Bloomington at 527 Brock Drive, approximately 4 miles from the Bloomington-Normal Amtrak Station.

Lincoln, Illinois

Amtrak Lincoln Service and Texas Eagle Service currently serve the Pontiac Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

Currently, no regularly scheduled transit bus service operates in Lincoln, Illinois.

It is approximately 29 miles from the Lincoln Amtrak Station to the Abraham Lincoln Capital Airport. Lincoln Land taxi provides taxicab service.

Springfield, Illinois – 3rd Street Station

Amtrak Lincoln Service and Texas Eagle Service currently serves the Springfield Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

The Springfield Mass Transit District (SMTD) currently provides transit bus service to the Springfield Amtrak station site via the #4, #5, and #7S routes. The #1, #2, #7W, #3, #6, #8, #9, and #12 routes are also nearby and could possibly be diverted to serve the Amtrak Station.

It is approximately 4 miles from the Springfield Amtrak Station to the Abraham Lincoln Capital Airport.

Greyhound Lines has a bus terminal in Springfield at 2351 South Dirksen Parkway, approximately four miles from the Springfield Amtrak Station.

Carlinville, Illinois

Amtrak Lincoln Service and Texas Eagle Service currently serve the Carlinville Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

Currently, no regularly scheduled transit bus service operates in Carlinville, Illinois.

Alton, Illinois

Amtrak Lincoln Service and Texas Eagle Service currently serve the Alton Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

The St. Louis Metro system provides mass transit bus service for Alton. Bus route #11 serves the Alton Amtrak Station. Route #11 provides connecting service to routes in Alton which also serve East St. Louis and St. Louis. This station would operate as a skip-stop station in conjunction with the East St. Louis Station.

East St. Louis, Illinois

The St. Louis Metro system provides mass transit bus service for East St. Louis. Bus routes that could serve the proposed East St. Louis Amtrak Station include #1, #1X, #2, #2X, and #4. Additionally, the Metrolink light rail 5th and Missouri Station is located within walking distance of the proposed East St. Louis Station. Metrolink provides connecting service to St. Louis, Scott Air Force Base and other destinations. Numerous other bus routes are within close walking distance serving all parts of the city. Additionally, the Metrolink light rail serves the Civic Center MetroBus Center. Parking and taxicab service would also be available.

The St. Louis MidAmerica Airport and Scott Air Force Base are located approximately 25 miles southeast of the proposed East St. Louis Amtrak Station site. This station would operate as a skip-stop station in conjunction with the Alton Station.

St. Louis, Missouri

Amtrak Lincoln Service, Missouri River Runner Service, and Texas Eagle Service currently serve the St. Louis Station, the site of proposed high-speed Chicago-St. Louis passenger rail service. Parking is available at the existing Amtrak station.

The St. Louis Metro system provides mass transit bus service for St. Louis. Bus routes serving the Civic Center MetroBus Center, adjacent to the St. Louis Amtrak Station, include #11, #13, #32, #57, #73, #94, #99, and #97. Numerous other bus routes are within close walking distance serving all parts of the city. Metrolink provides connecting service to East St. Louis, Scott Air Force Base and other destinations. Additionally, the Metrolink light rail serves the Civic Center MetroBus Center. Parking and taxicab service is also available.

The Lambert St. Louis International Airport is located approximately 17 miles northwest of the St. Louis Amtrak Station site.

Greyhound Lines also has a major bus terminal at the St. Louis Amtrak Station.

3.3.1.5 Parking

No-Build Alternative: No changes to parking at the Amtrak stations are proposed under the No-Build Alternative.

Preferred Alternative: In the FEIS, parking demand was estimated for the year 2010 at each of the proposed HSR stations, assuming eight round trips per day. At that service level, the estimated demand ranges from 45 to 245 spaces. With three round trips per day, the estimated demand ranges from 20 to 115 spaces. Existing parking facilities are adequate to meet the demand associated with eight round trips per day service.

3.3.1.6 Safety

In the FEIS, accidents were estimated for all grade crossings in the HSR corridor. The purpose of that analysis was to determine the potential effectiveness of the grade crossing treatments proposed as part of the HSR Alternative. The results indicated that, relative to the No-Build Alternative, implementation of HSR service would reduce the predicted number of accidents occurring at the existing grade crossings because the overall accident exposure would be reduced. Since circulation of the Draft EIS, the grade crossing treatment recommendations had changed, and the FEIS included four quadrant gates at all public vehicular crossings where train speeds will exceed 90 mph (127 kph). There is no currently accepted method to predict accidents at grade crossings where four quadrant gates are provided. However, since 10 vehicular grade crossings will be closed and 174 will be provided with some form of enhanced warning devices as part of the Preferred Alternative,

it is projected that fewer accidents will occur than if these improvements were not made, even though trains will operate at higher speeds south of Dwight.

3.3.1.7 Construction Related Impacts on Vehicular Traffic

No-Build Alternative: Under the No-Build Alternative, construction will be limited to regular maintenance activities. Therefore, impacts to vehicular traffic will be minimal.

Preferred Alternative: Under the Preferred Alternative, vehicular traffic will be temporarily impacted to varying degrees at locations where grade crossings will be modified or improved. The grade crossing improvements will, 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 might be required.

This would reduce the amount of adverse travel but add to the total project cost. 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 will be temporary and are considered minor.

3.3.1.8 Impacts to Operations on Navigable Waters

Under the Preferred Alternative, HSR trains would cross two drawbridges, both over Navigable Waters, in the City of Chicago. The first bridge crosses the South Branch Chicago River at approximately mile post (MP) 1.90. The second crosses the South Fork of South Branch Chicago River at approximately MP 3.60. Information on vessel traffic and the number of times these bridges are raised is not readily available. For the bridge at MP 1.90, it is likely that the peak traffic seasons are in the spring and fall when recreational boats pass through this area. During these times, the bridge is typically raised two times during the week and two times per day on weekends for a duration of approximately 10 minutes. It is unlikely that the bridge at MP 3.60 is ever raised because in its lowered position it is at approximately the same height as the adjacent and parallel CTA Orange Line bridge which is not movable. HSR trains would be required to yield to vessel traffic. However, since the number of times these bridges are raised is limited, this impact is expected to be minor.

Conclusions

The Preferred Alternative would require some coordination with freight rail operators within the corridor. A number of logistical issues would need to be addressed, particularly in the urban areas of Chicago, Springfield and St. Louis. Funding has been included in the project application for freight mitigation measures in Springfield. Those issues are well-defined and there has been coordination between government officials on the state and local levels and freight operators.

The No Build Alternative would not directly impact freight rail operations, however the possible mutual benefits of the capacity improvements required by the Build Alternative would not be realized.

The No Build Alternative would not directly impact existing passenger (Amtrak) and commuter rail (METRA) operations, however, the possible future mutual benefits of the capacity improvements required by the Build Alternative would not be realized.

No Build Alternative would result in some impact the interstate corridors in the HSR corridor. Over time, vehicular congestion would increase on the roads and highways between Chicago and St. Louis.

3.3.2 Socioeconomics

This section is based on and provides updated data from the Chicago - St. Louis High-Speed Rail Project: Draft EIS, June 2002. As such, the high-speed rail corridor is the same as the corridor for the Preferred Alternative (also the project corridor).

3.3.2.1 Existing Conditions

Community Services and Facilities

Schools, medical centers, fire and police stations and agricultural facilities serve the daily needs of residents along the corridor for the Preferred Alternative. The corridor provides access to and from educational, medical and agricultural facilities and plays a critical role in providing these services, and in serving the health, safety and general welfare of those who use them. The district boundaries for schools and emergency services extend beyond the limits of municipalities to cover vast agricultural areas. Within the communities, public service districts typically overlap the railroad.

In the small rural communities, students either walk to the local school or take a bus. Students residing on individual farmsteads outside the populated areas are bused. In order to efficiently transport students, especially those within unincorporated rural areas, school bus routes are generally the shortest and most direct ones from the service area to the facility site. Bus routes are redrawn each academic year to reflect changes in the distribution of the student population. In the regional centers, institutions of higher education operate buses between campus facilities and to surrounding residential areas, providing students and faculty with frequent, convenient and affordable transportation.

Most incorporated villages and cities along the corridor are served by municipal police and fire departments. Unincorporated communities and rural areas are served by the county sheriff's departments and fire districts. In times of emergency, fire district teams from adjacent jurisdictions share equipment and personnel. Private ambulance companies also operate in communities along the corridor. Health care facilities are generally located in the regional centers and serve broad agricultural areas.

Emergency routes for fire, police and ambulance services provide direct access to medical facilities. Similar to school bus routes, emergency routes typically incorporate section line roads in rural areas.

Concentrations of agricultural facilities within the rural communities support the agricultural economy along the rail corridor. Grain elevators and seed and fertilizer suppliers, which serve a broad agricultural hinterland, are typically located adjacent to the railroad with sidings. These facilities require vehicular access from the surrounding agricultural areas to remain economically competitive and operational, especially during peak seasons.

3.3.2.2 Demographics

Population and Population Distribution

Table 3-16 lists the 2000 and the estimated 2008 population of the counties within the HSR project corridor, the percentage change in population between 2000 and 2008, and the estimated 2008 population density within each county. Table 3-17 provides a population breakdown for each county and community, listing the 2000 and 2008 population of communities located along the corridor.

Table 3-16. County Populations and Households

County	Land Area (Sq. Mi.)	Total Population (2000)	Total Population (2008 Estimated)	Percent Change 2000-2008	Population Density per Sq. Mi	Total Households (2000)
State of Illinois	55,593	12,419,293	12,901,563	3.9%	232	4,591,779
Cook	946	5,376,741	5,294,664	-1.5%	5597	1,974,181
Will	664	502,226	681,097	35.6%	1026	167,542
Grundy	837	37,535	47,958	27.8%	57	14,293
Livingston	1044	39,678	37,681	-5.0%	36	14,374
McLean	618	150,433	165,298	9.9%	267	56,746
Logan	1184	31,183	29,788	-4.5%	25	11,113
Sangamon	725	188,951	194,925	3.2%	269	78,722
Macoupin	868	49,019	48,138	-1.8%	55	19,253
Jersey	420	21,668	22,622	4.4%	54	8,096
Madison	864	258,941	268,078	3.5%	310	101,953
St. Clair	369	256,082	262,291	2.4%	711	96,810
St. Louis City	62	348,189	354,361	1.8%	5716	147,076

Source: U.S. Census Bureau, 2008 Population Estimates, Census 2000.

Table 3-17. County and Community Populations

County/Community	Total Population (2000)	Total Population (2008) Estimated	Percent Change (2000- 2008)
State of Illinois	12,419,293	12,901,563	3.9%
Cook	5,376,741	5,294,664	-1.5%
Chicago	2,896,016	2,853,114	-1.5%
Forest View	778	718	-7.7%
Summit	10,637	10,223	-3.9%
Willow Springs	5,027	5,898	17.3%
Lemont	13,098	16,176	23.5%
Will	502,226	681,097	35.6%
Romeoville	21,153	38,028	79.8%
Lockport	15,191	24,810	63.3%
Joliet	106,221	146,125	37.6%
Elwood	1,620	2,341	44.5%
Wilmington	5,134	6,122	19.2%
Braidwood	5,023	6,664	32.7%
Godley	594	703	18.4%
Monee	2,924	4,993	70.8%
Peotone	3,385	4,294	26.9%
Grundy	37,535	47,958	27.8%
Braceville	792	832	5.1%
Gardner	1,406	1,489	5.9%
Livingston	39,678	37,681	-5.0%
Dwight	4,363	4,267	-2.2%
Odell	1,014	992	-2.2%
Cayuga	Unincorporated Place		
Pontiac	11,864	11,258	-5.1%
Ocoya	Unincorporated Place		
McLean	150,433	165,298	9.9%
Chenoa	1,845	1,832	-0.7%
Lexington	1,912	1,899	-0.7%
Towanda	493	487	-1.2%
Bloomington	64,808	73,026	12.7%
Normal	45,386	52,056	14.7%
Shirley	Unincorporated Place		
Funks Grove	Unincorporated Place		
McLean	808	791	-2.1%
Logan	31,183	29,788	-4.5%
Atlanta	1,649	1,633	-1.0%
Lawndale	Unincorporated Place		
Lincoln	15,369	14,541	-5.4%
Broadwell	Unincorporated Place		
Elkhart	443	423	-4.5%

Table 3-17. County and Community Populations (continued)

County/Community	Total Population (2000)	Total Population (2008) Estimated	Percent Change (2000-2008)
Sangamon	188,951	194,925	3.2%
Williamsville	1,439	1,388	-3.5%
Sherman	2,871	3,827	33.3%
Springfield	111,454	117,352	5.3%
Chatham	8,583	10,676	24.4%
Auburn	4,317	4,362	1.0%
Thayer	750	688	-8.3%
Macoupin	49,019	48,138	-1.8%
Virден	3,488	3,364	-3.6%
Girard	2,245	2,166	-3.5%
Nilwood	284	274	-3.5%
Carlinsville	5,685	5,962	4.9%
Macoupin Station	Unincorporated Place		
Plainview	Unincorporated Place		
Shipman	655	634	-3.2%
Miles Station	Unincorporated Place		
Brighton	2,196	2,376	8.2%
Jersey	21,668	22,622	4.4%
Madison	258,941	268,078	3.5%
Godfrey	16,286	17,524	7.6%
Alton	30,496	29,393	-3.6%
East Alton	6,830	6,563	-3.9%
Wood River	11,296	10,973	-2.9%
Hartford	1,545	1,477	-4.4%
Granite City	31,301	30,703	-1.9%
St. Clair	256,082	262,291	2.4%
East St. Louis	31,542	28,773	-8.8%
St. Louis City	348,189	354,361	1.8%

Source: U.S. Census Bureau, 2008 Population Estimates, Census 2000. Unincorporated place population is part of larger census geography and not identified separately as a Census Designated Place by the U.S. Census Bureau.

Population concentrations are found in the Chicago and St. Louis metropolitan areas. Much of the major population growth along the HSR rail corridor has occurred in the southeast portion of the Chicago metropolitan area in Will and Grundy counties. As of 2000, the population was 502,266 in Will County. In 2008, the estimated population was 681,097, making it one of the fastest growing counties in Illinois and the United States. Grundy County experienced an overall 27.8 percent change in growth during the same period. The population increases in Will and Grundy counties is evident of the movement outward from Chicago and the inner ring of suburbs to developing fringe areas. Will County, once a predominantly agricultural area, is becoming increasingly urbanized, with an estimated 2008 population density of 5,590 persons per square mile.

Corridor counties with regional centers in the rural areas, including McLean and Sangamon counties, have relatively higher populations than rural counties that have smaller communities. However, countywide population densities within counties with regional centers are still relatively low, averaging 267 persons per square mile.

Three rural counties, Livingston, Logan and Macoupin, have experienced a decrease in population over the 8-year period (2000-2008), ranging from 5.0 to 1.8 percent, while the population of Jersey County has increased at 4.4 percent over the same period. Population densities in these rural counties range from 25 to 57 persons per square mile.

Racial Composition

The racial composition of the corridor is predominantly white, as illustrated in Table 3-18. However, minority populations are concentrated within the Chicago Metropolitan (Cook and Will counties) and St. Louis Metropolitan areas (Madison County, St. Clair County and St. Louis City). McLean and Sangamon counties, with their diversified regional centers, also have relatively higher minority populations than the predominantly rural counties that have smaller communities.

Table 3-18. Population by Race Hispanic Origin (2000)

County	White	Black	Am. Indian Eskimo or Aleutian	Asian or Pacific Islander	Other	Hispanic or Latino (of any race)
State of Illinois	8,424,140	1,856,152	18,232	423,032	13,479	1,530,262
Cook	2,558,709	1,390,448	6,754	259,386	7,291	1,071,740
Will	388,523	51,980	672	11,141	536	43,768
Grundy	35,502	67	81	114	3	1,552
Livingston	36,145	2,032	60	123	11	1,056
McLean	132,224	9,189	224	3,115	145	3,833
Logan	28,247	2,037	48	169	3	503
Sangamon	163,967	18,134	353	2,108	258	2,000
Macoupin	47,828	396	100	100	19	305
Jersey	21,148	113	38	61	6	162
Madison	231,313	18,825	626	1,565	237	3,925
St. Clair	171,151	73,282	577	2,362	265	5,604
St. Louis City	149,329	177,446	862	6,903	647	7,022

Source: U.S. Census Bureau, 2008 Population Estimates, Census 2000.

3.3.2.3 Economics

The proposed high-speed rail project corridor between Chicago and St. Louis passes through two major metropolitan areas and three regional cities, whose population, labor force and employment vary dramatically. Cook, Will and Grundy counties are located within the Chicago metropolitan area and have a diversified economic base. Regional cities include Bloomington, Normal and Springfield located in McLean and Sangamon counties,

respectively. Springfield, the Illinois State capital, serves as a regional commercial and industrial hub and is a national and international tourism destination.

Situated at the confluence of the Mississippi, Missouri, and Illinois rivers, the St. Louis metropolitan area includes 16 counties, eight each in Illinois and Missouri. The City of St. Louis is the most densely populated and industrialized county in the St. Louis metropolitan area. Prior to terminating in downtown St. Louis, the HSR rail corridor traverses portions of Jersey, Macoupin, and Madison and St. Clair counties. These counties range from urban to a range of suburban counties and more rural, agricultural counties.

Table 3-19 lists the approximate length of the HSR corridor through incorporated and unincorporated areas.

3.3.2.4 Employment

Employment in the 11 counties along the rail corridor equaled 55 percent of total Illinois non-farm employment (including government workers) in 2008, with 45 percent of the employment in the corridor located in Cook County. Between 2001 and 2008, employment in the corridor outside Cook County grew 3.2 percent compared to a 1.2 percent reduction for the State as a whole. Growth was strongest in Will and Grundy Counties, 30.7 percent and 10.4 percent, respectively. Both of these counties are benefiting from a shift in development patterns within the northeast Illinois region. These areas are attractive for development because they are closer to downtown Chicago than other undeveloped areas north and west of the city.

Illinois employment fell 1.2 percent from 2001 to 2008. The City of St. Louis and six of the counties in the HSR along the corridor reported declines in their employment levels during the same period. Cook and Sangamon counties, along with the City of St. Louis, had the largest employment loss within a metropolitan area, declining 5.2, 11.7, and 5.5 percent, respectively. Rural areas, including Livingston, McLean, Logan and Macoupin ranged in losses of 600 to 1,700 jobs. Counties located on the fringe of the Chicago and Saint Louis metropolitan areas were the only counties along the HSR corridor to retain jobs.

Detailed employment trends for each county, by industry, are shown in Table 3-20. In the northern section of the corridor, Cook County has the most diversified employment base; however, it competes with surrounding counties that have lower taxes and newer infrastructure and facilities. The county has not, therefore, been able to benefit from the current economic expansion in the region. Will and Grundy Counties are older agricultural and industrial areas that are expanding their manufacturing employment while continuing to diversify and increase the share of employment in services and other sectors. Grundy county is expected to be drawn into the orbit of economic activity radiating out from Chicago, but it is still beyond the focus of activity in Will County and experienced only a 10.4 percent increase in employment between 2001 and 2008. Firms in the transportation,

Table 3-19. Length of Rail Corridor within Communities

County	City	Distance (mi) of track within County / Community
Chicago Area	Union Station to Joliet, inclusive	40.98
Will	Braidwood	3.5
	Elwood	2.4
	Godley	0.7
	Wilmington	1.6
	<i>Unincorporated Area</i>	10.6
Grundy	Braceville	1.4
	Gardner	1.1
	Godley	0.7
	<i>Unincorporated Area</i>	9.0
Livingston	Dwight	1.9
	Odell	1.2
	Pontiac	1.5
	<i>Unincorporated Area</i>	24.9
McLean	Bloomington	2.0
	Chenoa	1.0
	Lexington	1.7
	McLean	0.8
	Normal	2.9
	Towanda	1.1
	<i>Unincorporated Area</i>	33.1
Logan	Atlanta	1.3
	Broadwell	0.5
	Elkhart	0.9
	Lincoln	2.7
	<i>Unincorporated Area</i>	21.8
Sangamon	Auburn	1.6
	Chatham	1.5
	Sherman	2.4
	Southern View	0.5
	Springfield	7.5
	Thayer	0.5
	Williamsville	0.8
	<i>Unincorporated Area</i>	19.5
Macoupin	Brighton	1.1
	Carlinville	1.7
	Girard	0.8
	Nilwood	1.0
	Shipman	1.3
	Virden	1.2
	<i>Unincorporated Area</i>	33.8
Jersey	Brighton	0.3
	<i>Unincorporated Area</i>	2.5
Metro-East	Godfrey to Mississippi River, inclusive	31.0
MISSOURI	St. Louis	1.4
Total Track Length		281.1

Source: PB, Unincorporated Area designates portion of the alignment is not within an incorporated community.

Table 3-20. Employment by Industry (2001-2008) Covered Employment 2001

Industry by Sector	Cook	Will	Grundy	Livingston	McLean	Logan	Sangamon	Macoupin	Jersey	Madison	St. Clair	St. Louis City	Illinois
Total Private Sector and Government Employment	2,615,961	148,852	14,611	15,818	87,343	10,606	145,696	12,153	4,680	95,646	92,769	247,173	5,866,588
Private Sector (NAICS Code)	2,293,088	124,818	12,269	12,320	74,994	7,867	78,327	9,285	3,585	81,013	76,132	220,061	5,033,504
GOODS-PRODUCING	403,511	34,206	2,746	3,948	10,422	2,072	9,100	2,343	416	25,169	11,336	42,169	1,082,077
Natural Resources and Mining (11,21)	1,583	831	71	174	268	366	435	554	47	495	410	562	24,039
Construction (23)	97,779	15,134	1,094	525	3,274	169	4,818	780	253	5,908	4,204	12,305	276,190
Manufacturing (31,32,33)	304,149	18,241	1,581	3,249	6,880	1,537	3,847	1,009	116	18,766	6,722	29,302	781,848
SERVICE-PROVIDING	1,889,577	90,612	9,523	8,372	64,572	5,795	69,227	6,942	3,169	55,844	64,796	199,419	3,951,427
Trade, Transportation, and Utilities (22,42,44,45,48,49)	514,948	34,811	4,543	2,558	13,745	2,158	17,546	2,856	1,168	19,350	20,026	43,410	1,228,678
Information (51)	74,506	2,496	196	1,656	0	74	3,213	164	31	1,017	1,090	5,040	151,110
Financial Activities (52, 53)	220,764	4,884	547	553	12,443	367	7,418	563	191	3,869	3,465	13,837	400,007
Professional and Business Services (54,55,56)	427,677	13,297	1,323	433	0	194	9,543	420	163	5,133	9,324	50,476	785,470
Educational and Health Services (61,62)	343,644	15,241	1,314	1,725	9,448	1,455	16,456	1,644	887	12,551	15,233	49,937	700,189
Leisure and Hospitality (71,72)	208,065	14,641	1,257	1,025	8,263	965	10,046	904	590	10,414	11,131	28,386	479,114
Federal, State & Local Government	322,873	24,034	2,342	3,498	12,349	2,739	67,369	2,868	1,095	14,633	16,637	40,725	833,084

Source: Illinois Department of Employment Security (IDES), Missouri Economic Research and Information Center (MERIC). 9/14/09

Table 3-20. Employment by Industry (2001-2008) (continued)
Covered Employment 2008

Industry by Sector	Cook	Will	Grundy	Livingston	McLean	Logan	Sangamon	Macoupin	Jersey	Madison	St. Clair	St. Louis City	Illinois
Total Private Sector and Government Employment	2,479,851	194,527	16,128	15,153	85,947	8,900	128,690	10,740	4,820	95,796	96,650	233,687	5,793,707
Private Sector (NAICS Code)	2,169,152	161,335	13,217	12,030	73,385	7,014	76,991	8,163	3,720	80,370	77,928	211,533	4,959,314
GOODS-PRODUCING	303,696	33,470	2,662	3,577	8,377	1,496	8,004	1,556	364	19,335	9,772	33,266	901,144
Natural Resources and Mining (11,21)	1,094	636	63	188	364	142	617	84	49	427	426	244	24,379
Construction (23)	82,856	12,646	1,062	601	2,618	202	3,968	699	201	5,904	4,099	9,143	239,395
Manufacturing (31,32,33)	219,746	20,188	1,537	2,788	5,395	1,152	3,419	773	114	13,004	5,247	23,879	637,370
SERVICE-PROVIDING	1,865,456	127,865	10,555	8,453	65,008	5,518	68,987	6,607	3,356	61,035	68,156	200,423	4,058,170
Trade, Transportation, and Utilities (22,42,44,45,48,49)	467,778	50,592	5,233	3,119	13,701	2,004	17,046	2,578	1,176	20,955	22,472	36,663	1,197,761
Information (51)	56,050	3,169	163	1,193	936	39	2,425	108	48	898	1,502	5,205	112,744
Financial Activities (52, 53)	203,768	7,035	578	623	11,931	386	7,245	463	130	4,580	3,835	10,295	379,857
Professional and Business Services (54,55,56)	423,597	17,122	555	318	16,751	257	10,190	517	186	7,167	9,691	46,224	840,224
Educational and Health Services (61,62)	386,161	22,973	1,884	1,863	9,617	1,577	17,648	1,698	933	13,268	15,856	56,867	804,924
Leisure and Hospitality (71,72)	227,119	19,556	1,687	965	9,461	845	9,350	945	715	10,578	10,476	29,067	512,497
Federal, State & Local Government	310,699	33,192	2,911	3,123	12,562	1,886	51,699	2,577	1,100	15,426	18,722	34,200	834,393
Change 2001-2008	-136,110	45,675	1,517	-665	-1,396	-1,706	-17,006	-1,413	140	150	3,881	-13,486	-72,881
Percent Change 2001-2008	-5.2%	30.7%	10.4%	-4.2%	-1.6%	-16.1%	-11.7%	-11.6%	3.0%	0.2%	4.2%	-5.5%	-1.2%

Source: Illinois Department of Employment Security (IDES), Missouri Economic Research and Information Center (MERIC) 9/14/09

communication, and public utilities sectors provide a strong economic base for Grundy County.

In the central portion of the corridor, Livingston County has the highest percentage of employment in manufacturing at 18.4 percent in 2008, compared to a statewide average of about 11.0 percent. Its retail trade employment is below average, primarily because the population in the northern section of the county tends to patronize retailers in Will and Kankakee counties. In contrast, McLean County has only 6.3 percent of its employment in the manufacturing sector. The economic base for this county is its finance and insurance sector. The headquarters for State Farm Insurance are located in Bloomington which is also the location of Illinois State University. Service-providing providing employment accounts for 75.6 percent of the total jobs in McLean County.

In Sangamon County, manufacturing employment accounts for only 2.7 percent of total employment. Like McLean County, Sangamon shows strength in the insurance category; two insurance companies have headquarters in Springfield. Springfield is also the state capital, and where state government provides the base employment for the county. Sandwiched between the two insurance/government/educational service counties is Logan County, which has a small but diverse workforce that complements its basic agricultural economy.

The southern section of the corridor contains four counties. Macoupin and Jersey are heavily rural and agricultural, while Madison and St. Clair are more urban and industrial. Only 114 persons, less than 2.4 percent of the non-farm workforce, were employed in manufacturing in Jersey County in 2008. Macoupin had about 7.2 percent of its workers in manufacturing. It also had a high percentage, 6.5 percent (compared to 4.1 percent statewide), in construction. Approximately 13.6 percent of non-farm employment in Madison County is in manufacturing, while the economic base of St. Clair County is in the services sector, which accounts for 70.5 percent of the county's employment.

Employment change in the corridor is shown in Table 3-21. Outside of Cook County and St. Louis City, the service sectors of the economy within the project corridor showed a 12.3 percent increase between 2001 and 2008. Will County had the highest increase in the service sector at 41.1 percent. The state wide average for service sector employment is 2.7 percent.

3.3.2.5 Income and Wages

Table 3-22 shows 1999 and American Community Survey (ACS) 2005-2007 median household incomes for the corridor counties. Generally, the northern counties have the highest incomes in each category. Will County has the highest per median income at \$73,159. In Cook, Will, Grundy and McLean counties, median income is lower than the statewide median.

Table 3-21. Employment Change by Sector (2001 to 2008)

Industry by Sector	Percent Change (11 Counties)	Percent Change (without Cook County)	Percent Change City of St. Louis	Percent Change City of Illinois
Total Private Sector and Government Employment	-3.3%	4.6%	-5.5%	-1.2%
Private Sector (NAICS Code)	-3.3%	7.0%	-3.9%	-1.5%
GOODS-PRODUCING	-22.4%	-12.9%	-21.1%	-16.7%
Natural Resources and Mining (11,21)	-21.9%	-17.9%	-56.6%	1.4%
Construction (23)	-14.2%	-11.5%	-25.7%	-13.3%
Manufacturing (31,32,33)	-25.3%	-13.4%	-18.5%	-18.5%
SERVICE-PROVIDING	1.0%	12.3%	0.5%	2.7%
Trade, Transportation, and Utilities (22,42,44,45,48,49)	-4.3%	16.9%	-15.5%	-2.5%
Information (51)	-21.2%	5.5%	3.3%	-25.4%
Financial Activities (52, 53)	-5.7%	7.3%	-25.6%	-5.0%
Professional and Business Services (54,55,56)	4.0%	57.6%	-8.4%	7.0%
Educational and Health Services (61,62)	12.8%	15.0%	13.9%	15.0%
Leisure and Hospitality (71,72)	9.1%	9.0%	2.4%	7.0%
Federal, State & Local Government	-3.5%	-3.0%	-16.0%	0.2%

Source: Illinois Department of Employment Security (IDES); Missouri Economic Research and Information Center (MERIC) 9/14/09

Table 3-22. Median Incomes in High-Speed Rail Corridor Counties

County	Median Household Income (1999)	Median Income 2005-2007 ACS	Percent Change in Median Income (1999 - ACS 2005-2007)
Cook	\$45,922	52,358	14.0%
Will	\$62,238	73,159	17.5%
Grundy	\$51,719	64,249	24.2%
Livingston	\$41,342	49,213	19.0%
McLean	\$47,021	54,252	15.4%
Logan	\$39,389	48,164	22.3%
Sangamon	\$42,957	48,803	13.6%
Macoupin	\$36,190	44,791	23.8%
Jersey	\$42,065	52,029	23.7%
Madison	\$41,541	50,356	21.2%
St. Clair	\$39,148	46,462	18.7%
St. Louis	\$27,156	33,221	22.3%
Illinois	\$46,590	53,745	15.4%

Source: U.S. Census Bureau, American Community Survey (2005-2007) and Census 2000

3.3.3 Environmental Justice and Title VI

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

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (EO 1994), directs federal agencies to "promote nondiscrimination in federal programs substantially affecting human health and the environment, and provide minority and low-income communities access to public information on, and an opportunity for public participation in matters relating to human health or the environment." The EO directs agencies to use existing laws to ensure that when they act:

- They do not discriminate on the basis of race, color, or national origin;
- They identify and address disproportionately high and adverse human health or environmental effects of their actions on minority and low-income communities; and
- They provide opportunities for community input during the National Environmental Policy Act (NEPA) process, including input on potential effects and mitigation measures.

EO 12898 does not define the terms "minority" or "low-income." However, guidance provided by the Council on Environmental Quality (CEQ) describes these terms in the context of an environmental justice (EJ) analysis. These definitions are unique to EJ analysis and are the basis for the methodology that follows:

- **Minority Individual** - A Minority individual is classified by the US Census Bureau as belonging to one of the following groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black (not of Hispanic Origin), and Hispanic.
- **Minority Populations** - According to the CEQ Guidelines, minority populations should be identified 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.
- **Low-income Population** - Low-income populations are identified where individuals have incomes below the US Department of Health and Human Services poverty guidelines. A low-income population is either a group of low-income individuals living in proximity to one another or a set of individuals who share common conditions of environmental exposure or effect.

Detailed information regarding minority and low-income populations in the rail corridor was compiled from Bureau of Census 2000 and American Community Survey 2005-2007 data. Data from the 2005-2007 ACS three-year estimates are available for geographic areas with a population of 20,000 or more.

Table 3-23 provides the percentage of the population in each community along the rail corridor comprised of minority and low-income persons. Within the project area municipalities outside of Cook County and St. Louis metropolitan area, minority populations make up between 0.2 and 28.9 percent of the population in 2000. East St. Louis, Illinois and St. Louis, Missouri have the highest percentage of minority population at 98.5 and 54.8 percent, respectively.

In comparison, minority populations make up 41.7 percent of the population in Cook County and 24.9 percent in the state of Illinois (see Table 3-23). In 2005-2007 minority populations increased within all counties within the project area. Romeoville in Will County showed the highest increase of minority population between the Census 2000 and ACS 2005-2007 from 13.4 to 30.7 percent. During this period, Romeoville experienced nearly an 80 percent increase in population from 21,153 to 38,028 as shown in Table 3-17.

Within the project area municipalities outside of Cook County and St. Louis metropolitan area, between 1.1 and 14.0 percent of the population have an income below the poverty level. In Cook County and the state of Illinois, approximately 15.5 and 19.3 percent of persons live below the poverty level. Nineteen communities and St. Clair County within project area were equal to or exceeded the statewide poverty level percentage of 10.7 and 12.1 percent for Census 2000 and ACS 2005-2007. East St. Louis, Illinois and St. Louis, Missouri showed the highest percentage of persons in poverty at 35.1 and 24.6 percent, respectively.

Conclusions

The rail corridor and stations are situated within areas where the percentages of people living below the poverty levels and percentage of minorities comprising the population would not exceed the county-wide levels based upon a review Census 2000 block group data. The project does not result in any residential and/or business displacements along the entire route for utilization of an existing track, implementation of a proposed second track or for improvements to existing stations. Furthermore, the land uses within the immediate vicinity of the rail corridor are in many cases, railroad-related, commercial or industrial. Given that the a proposed second track utilizes the existing UP rail corridor and stations sites are used for existing Amtrak service, there are no perceived adverse impacts on minority or low impact populations.

Improved train service would also benefit affected communities. The placement of improved stations in the communities could be perceived as an overall benefit to the affected communities and the low-income and minority population residing within these

Table 3-23. Minority Population and Poverty Level

County/Community	Percent of Minority Persons (2000)	Percent of Minority Persons (ACS 2005-2007)	Percent of People Below Poverty Level (2000)	Percent of People Below Poverty Level (ACS 2005-2007) ⁴
State of Illinois	24.9%	28.9%	10.7%	12.1%
Cook	41.7%	48.0%	13.5%	14.9%
Chicago	55.7%	72.4%	19.6%	21.0%
Forest View	5.1%	NA	5.2%	NA
Summit	33.8%	NA	16.2%	NA
Willow Springs	4.0%	NA	6.2%	NA
Lemont	2.0%	NA	3.6%	NA
Will	16.8%	22.9%	4.9%	5.7%
Romeoville	13.4%	30.7%	1.9%	7.7%
Lockport	3.1%	5.7%	3.5%	5.9%
Joliet	28.9%	32.3%	10.8%	10.0%
Elwood	1.5%	NA	4.6%	NA
Wilmington	2.0%	NA	5.2%	NA
Braidwood	1.6%	NA	5.5%	NA
Godley	3.2%	NA	14.2%	NA
Monee	4.8%	NA	3.4%	NA
Peotone	1.1%	NA	0.8%	NA
Grundy	2.1%	4.8%	4.8%	4.5%
Braceville	0.3%	NA	4.3%	NA
Gardner	1.2%	NA	6.8%	NA
Livingston	6.9%	8.2%	8.8%	9.7%
Dwight	2.4%	NA	10.8%	NA
Odell	1.2%	NA	8.9%	NA
Cayuga	Unincorporated Place			
Pontiac	13.6%	NA	11.7%	NA
Ocoya	Unincorporated Place			
McLean	9.6%	13.1%	9.7%	12.8%
Chenoa	1.7%	NA	5.7%	NA
Lexington	0.3%	NA	4.4%	NA
Towanda	0.8%	NA	5.3%	NA
Bloomington	13.5%	19.3%	7.8%	11.1%
Normal	11.2%	12.6%	19.3%	21.8%
Shirley	Unincorporated Place			
Funks Grove	Unincorporated Place			
McLean	1.5%	NA	0.7%	NA
Logan	7.8%	10.2%	8.1%	9.9%
Atlanta	0.2%	NA	4.4%	NA
Lawndale	Unincorporated Place			
Lincoln	4.5%	NA	10.7%	NA
Broadwell	Unincorporated Place			
Elkhart	0.7%	NA	4.2%	NA

⁴ The American Community Survey (ACS) is a nationwide survey conducted by the US Census Bureau. The ACS collects information such as age, race, income, commute time to work, home value, veteran status, and other important data on an annual basis.

Table 3-23. Minority Population and Poverty Level (continued)

County/Community	Percent of Minority Persons (2000)	Percent of Minority Persons (ACS 2005-2007)	Percent of People Below Poverty Level (2000)	Percent of People Below Poverty Level (ACS 2005-2007)
Sangamon	11.5%	14.1%	9.3%	NA
Williamsville	1.7%	NA	3.1%	NA
Sherman	1.8%	NA	3.0%	NA
Springfield	17.7%	22.1%	11.7%	15.0%
Chatham	2.0%	NA	4.7%	NA
Auburn	1.1%	NA	5.5%	NA
Thayer	0.7%	NA	5.1%	NA
Macoupin	1.4%	2.4%	9.4%	10.6%
Virden	0.9%	NA	10.7%	NA
Girard	0.4%	NA	13.2%	NA
Nilwood	0.0%	NA	16.7%	NA
Carlinville	2.3%	NA	12.5%	NA
Macoupin Station	Unincorporated Place			
Plainview	Unincorporated Place			
Shipman	1.7%	NA	14.6%	NA
Miles Station	Unincorporated Place			
Brighton	0.7%	NA	6.5%	NA
Jersey	1.2%	3.1%	7.1%	6.9%
Madison	8.8%	11.0%	9.8%	11.2%
Godfrey	5.3%	NA	5.9%	NA
Alton	26.2%	30.9%	18.7%	20.2%
East Alton	1.8%	NA	13.3%	NA
Wood River	1.8%	NA	14.8%	NA
Hartford	1.0%	NA	13.0%	NA
Granite City	3.9%	7.9%	11.3%	12.3%
St. Clair	31.0%	32.7%	14.5%	13.6%
East St. Louis	98.5%	NA	35.1%	37.0%
St. Louis City	54.8%	54.1%	24.6%	24.7%

Source: U.S. Census Bureau, 2008 Population Estimates, Census 2000. Unincorporated place population is part of larger census geography and not identified separately as a Census Designated Place by the U.S. Census Bureau.

communities. The primary benefit is improved regional access to major metropolitan areas and provision of an alternative form of transportation to highway or air travel.

The No Build Alternative would not have disproportionate adverse impacts on minority or low impact populations. However, the No Build Alternative would not allow the opportunity provide increased public transportation choices that may be of value to low-income residents who may not be able to afford reliable personal transportation.

3.3.4 Public Health and Safety

At least two aspects of public health and safety would be affected by this project. The first is the potential benefit of improved access from rural or small communities to metropolitan areas (Chicago, St. Louis) that offer concentrations of medical services not available in the smaller areas. This consideration is addressed in the larger discussion of improved access overall.

The second aspect is the impact of the rail service on the provision of emergency health and safety services in the communities. Specifically, this assessment would look at the impact on fire, police and medical response time due to the train passing through and temporarily affecting cross-community access at at-grade road – rail crossings.

3.3.4.1 Existing Conditions

The corridor consists of upgrading the existing passenger rail service over approximately 280 miles of existing rail lines between Chicago and St. Louis. The route crosses numerous two- to four-lane state and local roads. These crossings have various forms of control, from actively protected grade crossing gates and flashing light signals to passively lights- and bells-only crossing signals. The IDOT and the rail companies are working to upgrade and or grade-separate these crossings as funds become available.

3.3.4.2 Public Health Considerations

Standard minimum warning time for a highway/rail grade crossing is 20 seconds per American Railway Engineering and Maintenance-of-Way Association (AREMA) 2009 recommended practices (section 3.1.20 H1). Actual warning time requirements must be determined per individual site requirements. At all locations gates must be in a horizontal position a minimum of 5 seconds prior to a train entering the roadway surface.

This issue becomes more critical in communities with stations, as the train would slow as it approaches the station. The slower speed would increase the length of time that the road would be blocked.

Table 3-24 summarizes the railroad crossing by community and the existing status of the crossing (i.e., if it is currently grade-separated or if it is at-grade and therefore is a potential barrier).

Conclusions

All measures would be taken during the engineering design phases to meet or exceed all rail operation safety standards in this area as well as the remainder of the corridor. By diverting traffic from the interstate system and local roads, the Preferred Alternative is anticipated to help reduce the rate of congestion growth and improve safety on the roads and highway. Additional grade separations and railroad crossing upgrades would further minimize the potential for collisions.

Table 3-24. Rail Road Crossings by Community

County	City	At-Grade Crossings
Chicago Area	Union Station to Joliet, inclusive	19
Will	Braidwood	3
	Elwood	2
	Godley	1
	Wilmington	4
	<i>Unincorporated Area</i>	7
Grundy	Braceville	2
	Gardner	6
	Godley	0
	<i>Unincorporated Area</i>	5
Livingston	Dwight	6
	Odell	4
	Pontiac	7
	<i>Unincorporated Area</i>	17
McLean	Bloomington	3
	Chenoa	3
	Lexington	4
	McLean	2
	Normal	7
	Towanda	3
	<i>Unincorporated Area</i>	10
Logan	Atlanta	3
	Broadwell	1
	Elkhart	1
	Lincoln	5
	<i>Unincorporated Area</i>	9
Sangamon	Auburn	4
	Chatham	2
	Sherman	2
	Southern View	0
	Springfield	24
	Thayer	1
	Williamsville	3
	<i>Unincorporated Area</i>	6
Macoupin	Brighton	1
	Carlinsville	3
	Girard	2
	Nilwood	1
	Shipman	0
	Virden	2
	<i>Unincorporated Area</i>	19

Table 3-24. Rail Road Crossings by Community (continued)

County	City	At-Grade Crossings
Jersey	Brighton	0
	<i>Unincorporated Area</i>	2
Madison	Alton	1
	East Alton	0
	Godfrey	4
	Granite City	5
	Hartford	5
	Madison	1
	Venice	1
	Wood River	1
	<i>Unincorporated Area</i>	1
St Clair	Brooklyn	0
	East St. Louis	0
	<i>Unincorporated Area</i>	0
MISSOURI	St. Louis	0

Source: PB, Unincorporated Area designates portion of the alignment is not within an incorporated community.

3.3.5 Hazardous Materials

Potential hazardous material affected sites in the project area were identified along the corridor. Environmental Data Resources (EDR) performed an electronic search of local, state and federal environmental databases along the corridor and provided an associated report of their findings. The databases and search distances were in accordance with U.S. EPA's All Appropriate Inquiries (AAI) regulations and ASTM 1527-05. Numerous sites were identified along the corridor and an electronic copy of EDR's report is included in the attached compact disc. Using the information in the EDR report, the sites within critical databases that were proximate to the corridor were identified.

Sites selected for evaluation primarily focused on those included in the databases listed in Table 3-25.

Although EDR's report identifies all the sites within the distances required by the All Appropriate Inquiries and ASTM standards, the evaluation was narrowed for some databases so that it focused on facilities within reduced distances that better reflect the common extent of contaminant movement associated with the likely contaminants. NPL sites were identified within 1 mile of the corridor; CERCLIS sites were identified within 0.5 miles; and all other databases that were evaluated were identified within 500 feet of the corridor. The approximate distance between the facility and the closest point of the corridor were calculated using geographic information (latitude and longitude). Table 3-25 shows the number of facilities identified within each database within the prescribed distance from the corridor.

Table 3-25. Sites Selected for Hazardous Materials Evaluation by Database

Database	# of Sites
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)	29
US EPA's National Priority List (NPL)	5
Leaking Underground Storage Tank sites (LUST)	192
Drycleaner sites (DRYCLEANER)	2
Solid Waste Facilities/Landfill Sites (SWF/LF) (IL NIPC)	10
Institutional Control sites, state and U.S. (INST CONTROL)	17
Manufactured gas plant sites (MGP)	13
Engineering Control sites, state and U.S. (ENG CONTROLS)	19
Superfund Consent Decrees (CONSENT)	0
Illinois Site Remediation Program (SRP) and Missouri Voluntary Cleanup Program (VCP) sites	50
State Hazardous Waste Sites (SHWS)	9
Illinois and Missouri Category List (CAT)	6
Section 7 Tracking Systems; pesticide production sites (SSTS)	1
Records of Decision sites (ROD)	5
RCRA Treatment, Storage, and Disposal Facilities (TSDF)	5
Brownfields, state and U.S. (BROWNFIELD)	6
Illinois and Missouri Spills (SPILLS)	8
Corrective Action Report (CORRACTS)	14
Formerly Used Defense Sites (FUDS)	0

The table in Appendix B summarizes the facility name, location, and environmental databases that were evaluated for those facilities in proximity to the corridor. Each facility has an EDR map identification number and focus map number that is referenced to the attached EDR report. The table also identifies the approximate calculated distance to the corridor.

Field work consisted of a 'windshield survey' of locations within the project area that could be observed from public roadways and areas. No private drives or property were accessed, and no prior arrangements were made for access to private properties. The entire route was observed, focusing on facilities identified in the EDR report within 500 feet on either side of the corridor centerline. Some sections of the corridor where it was not readily accessible from public highways and streets were not viewed.

Five NPL sites were found within 1 mile of the corridor. The "US Army Joliet Army Ammo Plt Uniroyal" NPL is an approximate 36-square-mile area through which the corridor travels near Joliet, Illinois. Much of the site was used during World War II, the Korean War, and the Vietnam War for the production of ammunition. The site has been deactivated, and much of the land has been transferred to other entities, including the U.S. Department of Agriculture's Medewin National Tallgrass Prairie. The "Mig/Dewane Landfill" NPL is immediately south of the corridor on the east side of Belvidere, Illinois. Contamination at

the Metalico-Granite City facility was created by the recycling and burying of lead-acid batteries. Preliminary information gathered indicates that lead-contaminated soil was buried under a large berm alongside the plant. The EDR report identified 38 CERCLIS facilities within 0.5 miles of the corridor. Including the NPL and CERCLIS sites, 305 known or potentially-contaminated facilities were identified in the databases that were evaluated within 500 feet of the corridor.

Potential Effects

The survey of the corridor between Chicago Union Station and St. Louis Union Station demonstrates that most of the corridor is in rural areas generally with a low potential for contamination. Even in rural areas, however, contaminated sites are found where the corridor passes through small towns and adjacent to isolated manufacturing or farm chemical facilities.

As shown by the list of sites compiled by EDR, the risk that a section of the corridor is contaminated is greater in urban than rural areas. In Chicago and the adjacent communities, and cities such as Joliet, Normal/Bloomington, Lincoln, and Springfield, the sources of contamination include somewhat scattered manufacturing plants, service stations, fuel storage depots, waste management facilities, chemical manufacturing plants, railroad maintenance yards, and multiple other facilities within, adjacent to, and near the right-of-way. Although 281 nearby facilities were identified in databases researched by EDR as known or potential sites with contamination, additional unidentified contaminated sites likely exist.

Several sections of the corridor passed through areas with multiple chemical refining, manufacturing and storage facilities where the railroad has been a key artery for transport of supplies and product. Many of these facilities are identified as known or potential contaminated sites in the EDR databases. The survey showed that the communities along the corridor where the railway passes the greatest concentration of chemical plants and storage facilities were Lemont, Joliet, Wood River, Alton, Hartford, Granite City, and East St. Louis. Along these sections of the corridor, the risk that contamination will be encountered during construction of the high-speed railroad increases.

IDOT guidelines for highway construction require identification of the locations of nearby contaminated sites in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) compiled by the U.S. Environmental Protection Agency (EPA). The more comprehensive review of other environmental databases shows that in addition to the most highly contaminated sites on the CERCLIS list, other locations with known and potential contamination exist within, adjacent, and near the corridor.

Section 22-6.03 of IDOT's "Bureau of Design & Environment Manual – 2002 Edition" states that "[p]rior to acquiring a property interest in a potential hazardous waste or hazardous substance site (whether included on the CERCLIS list or otherwise made known to the

district office), the district office should consider the possible risks and liability that may be involved.” Although much of the construction of the high-speed railway will primarily be done within existing railroad rights-of-way, some sections will require new properties to be acquired for station construction and other improvements. The inventory of contaminated sites helps guide the selection of suitable new station locations and sections of the corridor where additional land may need to be acquired.

The environmental conditions of soil and groundwater below the existing right-of-way, and on properties adjacent to the corridor will affect the safety precautions required to protect construction workers during construction, and maintenance workers after construction. During the construction process, much of the railroad bed will need to be widened to accommodate additional track. For this process, top soil and soil with poor structural stability will need to be removed, and new track ballast will need to be installed. In locations where new stations will be constructed or remodeled, soil will be removed or disturbed during the installation of foundation footings, grading of parking lots, and trenching of utilities. The process of soil excavation, removal, and grading could expose construction workers to contamination caused by releases on adjacent properties. Furthermore, excess or undesirable contaminated soil could also be unknowingly transported and disposed as fill in unsuitable locations, which could spread the impact of the contaminants.

3.3.6 Cultural Resources

This section provides an evaluation of Historic Architectural and Archeological resources within the rail corridor previously assessed for the Chicago – St. Louis High-Speed Rail Project (FEIS January 2003). Also provided is an assessment of potential impacts from implementing the Second Mainline Track (Preferred Alternative) within that corridor. This discussion provides a summary of previously identified historic architectural and archeological resources that lie within the currently defined project Area of Potential Effect (APE). Inventory information for these properties was derived from the state on-line databases for the following counties: Cook, Will, Livingston, Mclean, Logan, Sangamon, Macoupin, Madison, and St. Clair counties in Illinois and St. Louis County, Missouri.

3.3.6.1 Existing Conditions

Regulatory Environment

Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act 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).

Complying with Section 106 requires that historic properties be identified in the project's area of impact or the APE and that the proposed project's effects upon historic properties be evaluated. Efforts should be made by the agency to avoid, minimize, or mitigate potential adverse effects to historic properties. Procedures for carrying out the requirements of Section 106 are outlined in 36 CFR 800. The Section 106 process must be fully documented to indicate that all provisions have been met, including: identifying, contacting, and coordinating with relevant agencies and interested parties (termed consulting parties); identifying and evaluating historic properties within the APE, including NRHP-listed properties and properties 50 years of age or older that are eligible for listing in the NRHP; and evaluating the project's potential effects on historic properties.

The APE is the geographic area within which an under-taking may directly or indirectly alter the character or use of historic properties. The APE is commonly developed in consultation with the State Historic Preservation Office (SHPO) for the state(s) where the project is located. A reasonable and good faith effort must be made to identify all historic properties within the APE for a federal undertaking.

For the purposes of Section 106, historic properties are defined as those properties listed in or determined eligible for listing in the NRHP. Generally, such properties must be at least 50 years of age or older. Properties are listed or determined eligible for listing in the NRHP through application of the Criteria for Evaluation found in 36 CFR 60. These criteria indicate that the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- a. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. Are associated with the lives of persons significant in our past; or
- c. Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. Have yielded, or may be likely to yield, information important in prehistory or history. Thus, properties are listed in the NRHP or determined eligible for listing if they are shown to be significant under one or more criteria and if they also retain relevant aspects of integrity related to that criterion.

Criteria considerations found in 36 CFR 60 also allow properties that would normally not be considered eligible to be listed. The property types that the considerations address include cemeteries, churches, properties that have been moved, and properties that have attained significance within the past 50 years.

Environmental Evaluation

Identification of historic properties is conducted through background research and field review by architectural historians and archeologists that meet the *Secretary of the Interior's Professional Qualification Standards* (48 FR 22716, September 1983). All properties of 50 years of age or older identified within the APE are documented. Only properties identified as listed in the NRHP or determined eligible for listing in the NRHP are further evaluated for project effects.

To determine if any historic properties would be affected by an undertaking or project, architectural historians and archeologists review documentation for all identified historic (NRHP-listed or eligible) properties, review project plans, and make field visits to each historic property. Additional photographs of relevant views may be taken, and notes addressing each aspect of integrity for each property and potential project impacts may be made.

Each historic property that is found to be within the APE is further evaluated within its context and setting, with regard to its identified historic significance and level of retention of historic integrity, as well as in relation to changes to the property or within its vicinity that a project would or may cause. During field visits, project plans and typical sections would be used to evaluate effects. Effects assessments are based on the Criteria of Adverse Effect as defined in 36 CFR 800.5 "Assessment of adverse effects." According to this portion of the Section 106 regulations, the criteria of adverse effect are defined as follows:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Examples of adverse effects are identified in this part and include, but are not limited to physical destruction of or damage to all or part of the property; alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the *Secretary's Standards for the Treatment of Historic Properties* (36 CFR 68) and applicable guidelines; removal of the property from its historic location; change of the character of the property's use or of physical features within the property's setting that contribute to its historic

significance; introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; or transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

- For each historic property, a finding is made regarding the undertaking's potential to affect a property's aspects of integrity. The finding would correspond to the guidelines set forth in 36 CFR 800 and supported by information on integrity in the National Register Bulletin *How to Apply the National Register Criteria for Evaluation*. If no aspect of integrity for an individual historic property is altered, the finding may indicate that the historic property is not affected by the undertaking.
- If the undertaking would alter one or more aspects of integrity for an individual historic property but the effect would not alter a characteristic that qualifies that property for inclusion in the NRHP, then the finding for the property would be "No Adverse Effect." If the undertaking would alter a characteristic that qualifies a property for inclusion in the NRHP in a manner that diminishes the significant aspect(s) of integrity, then the finding for the property would be "Adverse Effect." Although often difficult to identify and quantify with precision, indirect and cumulative effects to historic properties are also considered. Such effects may include reasonably foreseeable land use changes.

The assessment of effects evaluation is also documented. Each historic property is treated individually, with relevant discussion regarding the application of the Criteria of Adverse Effect. This discussion may generally describe project impacts and their effect on a property's historic characteristics or features and/or discuss effects to each specific aspect of integrity. Relevant mapping and photographs are typically included.

If any historic properties are determined to be adversely affected by an undertaking, the agency is required to contact the Advisory Council for Historic Preservation (ACHP) and continue consultation with the consulting parties, including the SHPO, to resolve the adverse effect. Depending on the circumstances, the ACHP may join the consultation. Resolution of adverse effects may include alternatives to avoid the identified adverse effect, plans to minimize the undertaking's harm, or appropriate mitigation of the adverse effect.

As required, a Memorandum of Agreement (MOA) is executed and implemented to evidence the agency's compliance with Section 106. Signatories include, at a minimum, the agency official and the SHPO, but may also include other relevant parties as invited by the agency official. In addition, consulting parties may be invited to concur with the MOA. If adverse effects are not resolved, or agreement on the MOA cannot be reached, additional coordination with the ACHP is required.

The Section 106 process requires that groups with a demonstrated interest in the undertaking or historic properties in the project area be included as consulting parties during the planning and development of the project. Section 106 public involvement is often undertaken at the same time and in conjunction with similar efforts required under the National Environmental Policy Act (NEPA). At a minimum, consulting parties include the SHPO. During the current phase of the project, the Illinois DOT received letters from the National Trust for Historic Preservation (June 30, 2009) and the Gaylord Building Historic Site (September 16, 2009) expressing concerns about the potential effects of the proposed High Speed Rail alignment on the Lockport Historic District (listed on the NRHP). The IDOT will be contacting both groups to acknowledge the comments received, and will invite both groups to participate in the Section 106 consultation process. Copies of these letters can be found in Chapter 4.

This HSR project requires multi-state coordination as described in the Section 106 regulations. The SHPO for Illinois (Illinois Historic Preservation Agency [IHPA]), and Missouri (Missouri Department of Natural Resources [MDHR]) would be a consulting party for the Preferred Alternative. In addition, representatives of local governments, public agencies, Native American Tribes, preservation-related groups, the ACHP, and/or members of the public with a proven interest may be granted consulting party status. Consulting parties would be provided an initial opportunity to comment on the cultural resources identification and evaluation process at public meetings to be held in October, 2009. Public meetings would provide an opportunity for citizens to learn about the project and discuss any cultural resources concerns. Information of the Section 106 Process and the historic properties in the vicinity of the proposed corridor would be available at each public meeting. In addition, project personnel would be available to answer questions and record public comments related to historic resources and potential project effects.

Section 106 also requires formal consultation with federally recognized Native American tribal groups that may consider portions of the project APE to have cultural or historical significance. Although Illinois and Missouri do not have resident federally recognized tribes, there is a series of non-resident tribal groups who have formally declared that that they consider specific portions of Illinois to have cultural or historic significance to their group.

Area of Potential Effects for the Chicago — St. Louis Corridor

In the early stages of project planning, an Area of Potential Effects (APE) for the IHSR was defined as the existing railroad right-of-way (Draft Environmental Impact Statement; Chicago-St. Louis High-Speed Rail Project, 2003). As the Preferred Alternative addressed herein represents an upgrade to an existing rail corridor, the anticipated impacts would be limited to the vicinity of the existing rail line. The exception to this APE would be any lands that would be acquired for new or existing alignments. In these areas, the APE would be widened to take into account additional development and land acquisitions outside the existing railroad right-of-way. During the current data collection, resources within 0.25 mile

of the station locations were taken into consideration, although only those resources close enough to be potentially impacted by station development/ redevelopment (including parking, vehicle access and station-oriented development) are discussed in detail. As this corridor would use existing Amtrak passenger stations no new land acquisition for rail stations is anticipated. A summary of prior cultural resources survey efforts is included in Appendix B.

Historic Architectural Resources

This report contains an inventory of known and previously documented historic architectural resources for the Chicago-to-St. Louis Corridor, shown on Figure 3-1. This preliminary cultural resources inventory includes information and existing documentation (county and city surveys, NRHP nominations, and local landmark designations) gathered from online databases created by the Illinois SHPO and Missouri SHPO, the National Park Service (NRHP, National Historic Landmarks, Historic American Buildings Survey, and Historic American Engineering Record), and local government agencies (e.g. historic preservation commissions). It should be noted that these existing SHPO databases may not contain a comprehensive record of all previously identified historic properties, as the databases were compiled using the results of prior surveys (which may have been conducted several years ago) and may not have been recently updated.

The current study represents a preliminary inventory of previously identified resources and does not include a formal survey effort to identify and evaluate additional potential historic properties. As a result, the current study does not fulfill all the requirements of Section 106 of the National Historic Preservation Act (NHPA) or the relevant state regulations: Illinois State Agency Historic Preservation Act (20 ILCS 3420) and State Historic Preservation Act (Sections 253.408 to 253.412). Additional studies to locate and evaluate historic properties would be conducted as the project planning process continues. Table 3-26 shows previously evaluated resources within the APE as it is currently defined. This includes the rail line itself, as well as the areas that encompass station locations. The resources include railroad bridges or historic districts that span the railroad right-of-way. At this time, the railroad corridor itself has not been evaluated for National Register eligibility.

Railroad Corridor

The Chicago-to-St. Louis railroad corridor was originally laid out in the 1850s through the 1870s and has been actively used for rail transportation for some 120 to 150 years. By the 1890s, it had been “double-tracked” (parallel tracks). This rail corridor has played a significant role in the economic development (agriculture, commerce, industry) of the Midwest and the railroad towns located along the corridor between Chicago, Illinois, and St. Louis, Missouri, and passenger and freight service continue along the corridor to this day. In recent years, however, portions of the corridor were converted to single-track, with removal one of the tracks. The Preferred Alternative would reconstruct double-track along the entire route and would continue to use existing Amtrak passenger stations. There is

Figure 3-1. Project Location and Rail Corridor



Table 3-26. Previously Evaluated Resources within the APE

County	Town	Name	Built	Survey#	NR/NHL Status
Cook	Chicago	Chicago Union Station 210 South Canal Street Designed by Daniel Burnham and Graham, Anderson, Probst & White	1913-1925	N/A	No prior Determination of Eligibility LL
Cook	Lemont vicinity	RR Bridge over Calumet Sag Channel, west SR-83	ca. 1900	N/A	No prior Determination of Eligibility
Cook	Lemont	Chicago & Alton RR Depot 101 Main Street	1853	157579	No prior Determination of Eligibility
Will	Lockport	Lockport Historic District – ROW bisepts HD – boundary increase 1980, includes Gaylord Bldg, Norton Bldg, and several commercial, museum, and residential buildings that flank the ROW	1836-1896 69 buildings on 31.6 acres	200646	NR-Listed
Will	Lockport	Gaylord Building 200 W 8 th Street, 3- story stone bldg built as part of I&M Canal, RR ROW flanks building	1836-1853	124790	NR-Listed
Will	Lockport	Norton Building/Lockport Iron Works – 10 th & Commerce, 3 story stone industrial bldg built as part of I&M Canal, – RR ROW flanks building	1848-1850	304564	NR-Listed
Will	Lockport	GM&O RR Depot SE corner 13 th St & Commerce, RR ROW flanks bldg	1870	124792	No prior Determination of Eligibility
Will	Lockport	Illinois & Michigan Canal National Heritage Corridor (NHC, 1984), Locks and Towpath run through Lockport along with public greenway – ROW flanks NHC	1836	N/A	NR-Listed NHL
Will	Lockport	Lockkeeper's House for Lock No.1, I&M Canal, 1513 S State St, SE of canal, ROW bisepts area between canal and this resource	1848-1850	304565	No prior Determination of Eligibility
Will	Joliet	Joliet Steel Works – ROW bisepts historic district	1869-1932 17 buildings on 16 acres	200824	NR-Listed
Will	Joliet	Amtrak Union Station 50 East Jefferson Street	1912 4.6 acres	200115	NR-Listed
Will	Joliet	East Side Historic District – ROW flanks historic district	1850-1920 275 buildings on 100 acres	200304	NR-Listed
Will	Joliet Elwood Wilmington	Alternate Route 66, Wilmington to Joliet (SR 53) 2 and 4 lane section of US Route 66 within 60' ROW between Joliet and Wilmington, linear resource flanks this RR ROW for nearly 2 miles south of Elwood	1926-1956 7 structures 275 acres on 15.9 miles	223414	NR-Listed

Table 3-26. Previously Evaluated Resources within the APE (continued)

County	Town	Name	Built	Survey#	NR/NHL Status
Will	Elwood	Joliet Army Ammunition Plant (Joliet Arsenal), ROW bisects former military installation; HAER documented in 1983-1985 and determined site was not NR-Eligible at that time	1940-1943 1,391 buildings on 23,544 acres in 1980s	N/A	No prior Determination of Eligibility
Livingston	Dwight	Amtrak Dwight RR Depot & Office – East Street	1891 <1 acre	200351	NR-Listed
Livingston	Odell	Odell RR Station	ca. 1900	122892	No prior Determination of Eligibility
McLean	Lexington	Lexington Park – John Patton Log Cabin, RR ROW flanks park site	1829-1832 1 building on <1 acre	201456	NR-Listed
McLean	Bloomington	Chicago & Alton RR Freight Depot, 802 North Allin Street	1888	200463	NR-Listed
McLean	Bloomington	RR Bridge over Market St.	1889	154192	NR-Eligible
Logan	Atlanta	Atlanta Public Library 100 Race Street – RR ROW flanks site	1907-1908 1 building on <1 acre	200133	NR-Listed
Logan	Atlanta	J.H. Hawes Elevator 2 nd St RR ROW flanks site	1903-1941 1 building on <1 acre	200843	NR-Listed
Logan	Lincoln	Lincoln Courthouse Square Historic District – 10 blocks, RR ROW bisects district	1865-1932 89 buildings on 27 acres	201385	NR-Listed
Logan	Lincoln	Amtrak Lincoln RR Depot 101 N Chicago, part of Lincoln Courthouse Square Historic District	1911	115285	NR-Listed
Logan	Lincoln	RR Freight Depot 200 N Sangamon, part of Lincoln Courthouse Square Historic District	1890	115497	NR-Listed
Sangamon	Williamsville	Former Williamsville RR Depot Walnut St (now public library)	ca. 1900	111712	No prior Determination of Eligibility
Sangamon	Springfield	Ridgely Interlocking Tower 1501 Percy, near Sangamon Ave Bridge – within RR ROW	ca. 1910s	163658	No prior Determination of Eligibility
Sangamon	Springfield	Amtrak Springfield RR Depot	1895	N/A	No prior Determination of Eligibility
Sangamon	Springfield	Hickox Apartments at 4 th & Cook – flank ROW on east	1919-1929 5 buildings on <1 acre	201281	NR-Listed
Sangamon	Springfield	Dana-Thomas House 301 Lawrence Street ROW flanks site (museum)	1902-1906 2 buildings on <1 acre	200818	NR-Listed NHL
Sangamon	Chatham	Former RR Depot 100 N State Street (museum)	1902	N/A	No prior Determination of Eligibility

Table 3-26. Previously Evaluated Resources within the APE (continued)

County	Town	Name	Built	Survey#	NR/NHL Status
Sangamon	Auburn	RR Lights near Gillmore on east side tracks	1900-1925	531390	No prior Determination of Eligibility
Sangamon	Auburn	RR Depot west side tracks between Adams and Jefferson (may no longer be extant)	1900-1925	111787	No prior Determination of Eligibility
Macoupin	Viriden	RR Depot -118 N Masterson	1900-1925	108619	No prior Determination of Eligibility
Macoupin	Girard	RR Depot - 151 E. Center still (may no longer be extant)	1900-1925	108593	No prior Determination of Eligibility
Macoupin	Girard	RR Depot – 160 E. Center still (may no longer be extant)	1900-1925	108935	No prior Determination of Eligibility
Macoupin	Girard to Nilwood	US Route 66 from Girard to Nilwood – NR-Listed US Route 66 crosses this RR at grade just south of Girard and at grade in downtown Nilwood, otherwise the 4-mile linear resource is outside the APE	1919-1931	219065 8 structures on 15.5 acres	NR-Listed
Macoupin	Carlinville	Amtrak Carlinville Depot 120 Alton Road	1900-1925	163788	No
Macoupin	Carlinville	RR Depot – Alton Street south of town	1900-1925	108540	NR-Listed
Madison	Alton	Amtrak Alton Depot – 3400 College Ave	1900-1924	105740	No prior Determination of Eligibility
St. Clair	East St. Louis	MLK Bridge (I-55, I-70, I-64, US 40) over MS River – 4,000' truss vehicular bridge – RR ROW goes beneath east approach span	1950-1951	154976 103518	NR-Listed
St. Clair St. Louis	East St. Louis, IL St. Louis, MO	MacArthur Bridge over Mississippi River – huge 18,261' long truss bridge for RR and vehicles connects East St. Louis, IL to St. Louis, MO – half in Illinois and half in Missouri	1907-1917	163479	No prior Determination of Eligibility

Notes:

- NHL National Historic Landmark
- NR National Register of Historic Places
- LL Locally Listed

existing survey and documentation of a number of railroad-related infrastructure (e.g. bridges, switch stations, depots, etc.). The railroad corridor itself has not previously been evaluated for eligibility for listing in the NRHP, but this evaluation may be required as the project planning process continues.

Archeological Resources

This preliminary inventory of archeological resources includes the technical report completed for the 2003 FEIS, supplemented with information and existing documentation

gathered from an archeological database maintained by the IHPA, MDHR, the National Park Service (NRHP and National Historic Landmarks), and local government agencies (historic preservation commissions).

The current study represents a preliminary inventory of previously identified resources; it does not include a formal survey to identify and evaluate additional potential historic properties. As a result, the current study does not fulfill all the requirements of Section 106 of the NHPA or the relevant state regulations: Illinois State Agency Historic Preservation Act (20 ILCS 3420) and Missouri State Historic Preservation Act (Sections 253.408 to 253.412). Additional studies to locate and evaluate historic properties would be conducted as the project planning process continues.

Prior Archeological Survey

The proposed HSR corridor was the subject of a prior archeological survey (ARI 1998) that examined alternatives of a proposed upgrade to a rail corridor between Chicago, Illinois, and St. Louis, Missouri. The methodology, results and recommendations of the earlier study are summarized below and are followed by supplemental archeological data derived from the IHPA and MDHR archeological database.

A Phase I Archeology Report was prepared for the previous HSR project by Archaeological Research Inc. (ARI) in September of 1998. The study covered 450 rail crossings traversing a total of 283 miles and spanning twelve Illinois counties: Cook, Will, Kankakee, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Jersey, Madison and St. Clair. ARI designated an APE of 250 feet from the center point of each crossing to be intensively examined. A 50-foot right-of-way was surveyed along proposed service and frontage roads. An additional 150 to 250 feet were surveyed in areas of proposed grade separation (ARI 1998).

Methodology

Field investigations of the corridor began with a preliminary field view of all crossings scheduled for modification. Investigations focused on a 250-foot radius from the center point of the crossing. Some crossings, where closure was proposed, required construction of a frontage or service road between the closed crossing and the nearest open crossing. Survey was performed at 50 feet on either side of these service or frontage roads. Areas where new right-of-way was acquired for grade separation and station improvements were also surveyed. Where grade separation was proposed, the survey area was extended 350 to 400 feet to examine all areas proposed for the new alignment. These areas were surveyed at 5- to 10-meter intervals, and shovel testing was employed at 10-meter intervals.

Several methods were employed to assess the archeological potential of the crossings (ARI 1998). Crossings located in highly developed urban areas and within areas of severe disturbance were subject to a pedestrian survey. The pedestrian survey method was utilized at 5-meter intervals on plowed agricultural fields with a ground surface visibility exceeding 50 percent. Agricultural fields with a ground surface visibility less than 50 percent were

excavated using small sampling pits. These sample pits were excavated using shovel and posthole diggers at a 5- to 10-meter intervals. Ten previously recorded archeological sites (11WI6, 11WI70, 11MI56, 11LO400, 11MP468, 11MS30, 11MS50, 11MS75, 11MS76, and 11MS1472) were located in proximity to the rail crossings and were revisited during the course of this survey (ARI 1998).

Results

Only two crossings (TR234 and Maryville Road) yielded significant results during the Phase I survey. Crossing TR234 (Mile Post 231.00) in Macoupin County, Illinois, is located in proximity to previously recorded site Mp-468. Artifacts recovered during the pedestrian survey of this crossing included pottery, lithics, and two broken projectile points (ARI 1998). The Marysville Road (MP 270.00) crossing in Madison County, Illinois, is located within proximity of sites 11MS30, 11MS50, 11MS75, 11MS76 and 11MS1472. Madison County, because of its location in the American Bottom of the Mississippi River, is considered a high probability area for archeological sites. The remaining 448 crossings have been modified by disturbances due to industrial activity, grading, paving, erosion, outwash, and commercial and residential development (ARI 1998).

Supplemental Archeological Information

In addition to the archeological data collected during the 1998 survey of the rail corridor, the IHPA and MDHR archeological database includes the resources shown in Table 3-27 that have been identified near the station locations along the corridor.

Table 3-27. Previously Recorded Archeological Resources in Vicinity of Station Location

County	Station	Site number	Cultural Affiliation	NRHP Eligible
Grundy	Dwight	No sites/surveys	N/A	N/A
Livingston	Pontiac	11LI163	Historic	Not eligible
McLean	Bloomington-Normal	No sites/surveys	N/A	N/A
Logan	Lincoln	No sites/surveys	N/A	N/A
Sangamon	Springfield	11SG1286	Historic	Phase III completed-Not eligible
Sangamon	Springfield	11SG1301	Historic	Phase III completed-Not eligible
Sangamon	Springfield	11SG1368	Historic	Phase III completed-Not eligible
Macoupin	Carlinville	No sites/surveys	N/A	N/A
Madison	Alton	11MS1333	Historic	No prior Determination of Eligibility

Based on the available data, the only site that is close to a proposed station location is 11MS1333 in Alton, Madison County, Illinois. However, this historic site is largely disturbed by later construction. Based on the proposed rail station development in Alton, additional archeological investigation of the resources may be required.

Tribal Consultation

The 1992 amendments to the NHPA require all federal agencies to consult with Indian Tribes or Native Hawaiian organizations for undertakings that may affect properties of

traditional religious and cultural significance. Section 36 CFR 800.2(c) (2)(ii)(A) states that "the agency official shall ensure that consultation in the Section 106 process provides the Indian Tribe or Native Hawaiian organization a reasonable opportunity to identify its concerns about historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects."

The current version of the regulations implementing Section 106 of the NHPA, effective August 5, 2004, reflect this approach and require federal agencies to consult with any tribe that may attach religious and cultural significance to resources affected by an agency action, whether those resources are on or off tribal lands.

Illinois and Missouri do not have resident federally recognized tribes, but there are non-resident tribal groups who have formally declared that they consider specific portions of Illinois to have cultural or historic significance to their group. Table 3-28 provides a listing of specific tribal groups that have expressed an interest in the various counties along the rail corridor. Available data do not indicate any non-resident groups with an expressed interest in St. Louis County, Missouri. In accordance with Section 36 CFR 800.2, the IDOT would assist the FRA in initiating contact with the listed tribal representative for each of these tribal groups, providing the opportunity for them to: 1) Provide information on concerns they might have on potential project impacts on these areas and 2) Request Section 106 consulting party status. The results of these tribal contacts would be included in later versions of the project NEPA documentation. Tribal groups requesting consulting party status would receive cultural resource assessment reports and related documentation, be invited to attend project meetings with FRA, IDOT, MoDOT, and IHPA, and be asked to provide input throughout the process.

3.3.6.2 Potential Impacts

The preliminary historic resource inventory for the Chicago-St. Louis corridor contains 42 historic architectural resources, 21 of which have been previously listed in or determined eligible for listing in the NRHP. In addition, this inventory contains two National Historic Landmarks and one National Heritage Corridor, administered by the National Park Service. This inventory also features previously documented railroad infrastructure such as bridges and depots located within the railroad right-of-way.

Table 3-28. Chicago - St. Louis: Tribal Groups by County

Tribal Group	Illinois County												
	Contact	Cook	Will	Kankakee	Grundy	Livingston	McLean	Logan	Sangmon	Macoupin	Jersey	Madison	St. Clair
Citizen Potawatomi Nation	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
Delaware Nation	N	N	N	N	N	N	N	N	N	N	N	N	N
Forest County Potawatomi Community	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
Hannahville Indian Community	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
Ho-Chunk Nation of Wisconsin	N	N	N	N	N	N	N	N	N	N	N	N	N
Iowa Tribe of Kansas and Nebraska	N	N	N	N	N	N	N	N	N	N	N	N	N
Iowa Tribe of Oklahoma	N	N	N	N	N	N	N	N	N	N	N	N	N
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Kickapoo Tribe of Oklahoma	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Kiowa Indian Tribe of Oklahoma	N	N	N	N	N	N	N	N	N	N	N	N	N
Peoria Tribe of Indians of Oklahoma	Y	N	N	N	N	N	N	N	N	N	N	Y	N
Prairie Band of Potawatomi Nation, Kansas	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
Quapaw Tribe of Indians	Y	N	N	N	N	N	N	N	N	N	N	Y	N
Sac & Fox Nation, Oklahoma	N	N	N	N	N	N	N	N	N	N	N	N	N
Sac & Fox Nation of Missouri in Kansas and Nebraska	N	N	N	N	N	N	N	N	N	N	N	N	N
Sac & Fox Tribe of the Mississippi in Iowa	N	N	N	N	N	N	N	N	N	N	N	N	N
Santee Sioux Nation	N	N	N	N	N	N	N	N	N	N	N	N	N
Winnebago Tribe of Nebraska	N	N	N	N	N	N	N	N	N	N	N	N	N

Y = Yes contacted: Yes present in county

The preliminary archeological inventory for the Chicago-St. Louis corridor did not identify existing National Register-listed or National Register-eligible sites within the project APE. However, the 1998 Phase I survey recommended additional Phase II survey work at two at-grade rail crossings located at TR234 (MP 231.00) in Macoupin County, Illinois. The recommendation was made because of the large amount of cultural material recovered during excavations and proximity to another archeological site (11MP468). The high artifact density identified during pedestrian reconnaissance at this crossing suggests a high potential for sub-surface features. The at-grade rail crossing at Maryville Road (MP 270.70) in Madison County, Illinois, is also recommended for Phase II testing. Several prehistoric burial and habitation sites are located near (but not within) the project APE at this location. The presence of these previously identified sites suggests a high potential for deeply buried resources. No further testing was recommended for the remaining 448 rail crossings.

Potential Future Studies

The current assessment represents a summary of data for previously documented historic architectural and archeological resources available from online GIS databases.

Consequently, as the project planning process continues, it would be necessary to supplement this information with additional survey, research, and documentation not included on available online databases. In addition, supplementary and up-to-date historic architectural and archeological survey efforts would be required to assess portions of the current project APE that are not included in prior environmental studies. The scale and methodology of this additional work would be determined during continued consultation with the staffs of the State Historic Preservation Offices in Illinois and Missouri. These future studies would include procedures for the identification of additional consulting parties, who would be invited to participate in the consultation process. This work is necessary in order for the project to comply with Section 106 requirements of the National Historic Preservation Act of 1966, as amended, for federally funded transportation projects.

This future intensive-level field survey of the project APE would identify, document, and evaluate all properties more than 50 years of age. NRHP-listed properties, including individually listed properties and historic districts, would be field reviewed to determine if substantial changes have occurred to the resources that may impact their status. All properties more than 50 years of age and not listed in the NRHP would be documented. Based on research and field review, properties may be documented individually or in groups (e.g., districts). Documentation would include field evaluation and notation, and digital photography.

The project team would document all properties that required field documentation on appropriate forms in accordance with SHPO instructions. Properties would be evaluated for eligibility for listing in the NRHP using established professional criteria and considerations set forth in *How to Apply the National Register Criteria for Evaluation*. Properties that are not listed in but appear to be eligible for the NRHP would be documented on Determination of Eligibility forms. Properties that are more than 50 years of age but are not eligible for the NRHP would be documented on Short Forms for Ineligible Properties. Required mapping, which includes a tax parcel map and USGS quadrangle map for each resource, would also be completed.

With completion of the Identification and NRHP Evaluation, analysis would turn to the evaluation of potential project effects to all identified NRHP-listed and NRHP-eligible properties. Proposed project activity and its potential to directly and/or indirectly affect NRHP-listed or NRHP-eligible properties would be evaluated per the criteria of adverse effect set forth in Section 106 regulations. Potential effects may include, but are not limited to, impacts related to property acquisition, visibility, noise, vibration and property access.

With completion of the evaluation of effects, the project team would complete an architectural history technical report that would document the project methodology and all eligibility and effects determinations. Each property documented and its NRHP status would be listed. NRHP-listed and NRHP-eligible properties would be described. Potential project effects to each NRHP-listed and NRHP-eligible property, or the lack thereof, would

be documented. The report would also include substantial historic context on the project corridor and surrounding neighborhoods and, as appropriate; information on relevant architectural styles, trends, and buildings types; information on significant people; and associated historic events. The report would include all relevant mapping, photography, and other supporting materials.

3.3.6.3 Mitigation

Should the effects analysis indicate a potential adverse effect to an NRHP listed or eligible property (that cannot be avoided, it would be necessary to develop a mitigation treatment plan, which would be included in a Memorandum of Agreement or Programmatic Agreement. This agreement would be developed in consultation with the appropriate SHPO and other consulting parties.

3.4 Construction Impacts

Impacts associated with construction of the Build Alternative (second mainline track) would be local and temporary. The most noticeable impacts would likely be noise, vibration, dust, and traffic disruptions. There is also the potential for impacts to streams and wetlands.

These temporary impacts would occur from operation of equipment and short-term closure of streets crossing the rail line for installation of additional track, upgrade of crossing surfaces, rehabilitation of existing track, and upgrade/installation of bridges and signal devices at intersections. Normal traffic may be re-routed at various times. 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 at each site.

Modification or improvement of station facilities would create impacts typical of urban low-rise building construction. Implementation of industry-standard control measures (e.g., traffic control, dust/erosion and sedimentation controls, properly fitted emission control devices, mufflers) would minimize temporary impacts. Further, these impacts would cease upon completion of construction at each site.

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.

As with any construction project, an increase in noise is expected at construction sites. However, construction activity would generally occur on weekdays between the hours of 7:00 a.m. and 6:00 p.m. and so would not interfere with normal activities of persons who

may live or work nearby. Construction noise would be reduced to the extent feasible by including specific noise control requirements in the construction contract specifications. The specifications should require contractors to: 1) select the equipment and techniques that generate the lowest noise levels; 2) use equipment with effective mufflers; 3) certify compliance with noise monitoring; 4) select haul routes that minimize truck noise in residential areas; and 5) select air compressors that meet federal noise level standards and locate them away from or shield them from residences and other sensitive noise receptors.

Vibration during construction is generally limited to annoyance effects and not to building damage effects. Vibration impacts could be mitigated by restricting the procedures and time permitted for vibration-intensive activities, such as pile-driving and by requiring vibration monitoring to certify compliance with vibration limits. In addition, an active community liaison program could be implemented to ensure residents are kept informed of construction activities and have a means to register complaints.

For the more vibration-intensive activities, care would be taken to prevent vibration damage to adjacent structures. In areas where vibration is anticipated, surveys could be conducted before construction begins to aid in documenting damage that may occur as a result of construction.

Construction could temporarily impact floodplains, wetlands, streams, and surrounding streambanks. Track improvements would involve replacement of some rail, crossties and track ballast, plus other improvements to trackside equipment, stations, platforms and parking facilities. These procedures are primarily restricted to the current right-of-way. Where a new second track is added, extension of culvert or bridge structures may be required, with temporary construction impacts where new bridge structures are installed. New track installation would also require subgrade preparation and earthwork.

These potential impacts would be minimized, however, as the contractor would be required to avoid wetlands that may be located within the railroad right-of-way during the establishment of construction staging areas and other construction activities. In addition, erosion, sedimentation and bank stabilization measures would be employed where construction occurs at or near creeks or creek crossings and the Vermillion River, consistent with the IDOT Bureau of Design and Environment Manual, and IDOT's Standard Specification for Road and Bridge Construction, January 1, 2007.

3.5 Secondary and Cumulative Impacts

3.5.1 Secondary Impacts

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

distance but are still reasonably foreseeable. Indirect effects would include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” (40 CFR 1508.8b).

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

With the No Build Alternative, the existing rail service along the project corridor would continue. Over time, a potential indirect effect could be to bring additional attention to a need for improvements to rail service along the corridor to accommodate additional rail traffic.

The Preferred Alternative would result in indirect impacts as the additional rail traffic could result in the need for further development in the vicinity of stations. This transit-oriented development would likely occur in already built-up areas. Local review boards would be responsible for investigating the impacts to water, sewer, traffic and other environmental factors from future transit-oriented development.

3.5.2 Cumulative Impacts

The consideration of cumulative effects consists of an assessment of the total effect on a resource, ecosystem, or community from past, present, and future actions that have altered the quantity, quality, or context of those resources within a broad geographic scope. Under the CEQ regulations, cumulative effects are defined as “...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). The cumulative effects analysis considers the aggregate effects of direct and indirect impacts – from federal, non-federal, public, or private actions – on the quality or quantity of a resource.

The intent of a cumulative-effects analysis is to determine the magnitude and significance of cumulative effects, both beneficial and adverse, and to determine the contribution of the proposed action to those aggregate effects. Contributions to cumulative effects associated with the Build Alternative on the resources analyzed would be limited to those derived from the direct and secondary impacts of the action.

The No Build Alternative would have a slight negative contribution to cumulative impacts. The No Build Alternative would not provide any benefits to regional air quality because it would continue the existing dependence on personal automobiles for travel between Chicago and St. Louis.

The Preferred Alternative would have slight beneficial contributions to cumulative impacts. The proposed extension of passenger rail service is expected to provide an overall benefit to air quality. The rail service is expected to provide service to motorists who would otherwise travel between Chicago and St. Louis by motor vehicle. This shift in travel mode is expected to reduce overall vehicle emissions. The addition of passenger rail service would also encourage the transit-oriented development already occurring adjacent to existing stations.