Draft
Environmental Impact Statement

Chicago - St. Louis
High-Speed Rail Project

PREPARED BY

THE U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL RAILROAD ADMINISTRATION
AND
ILLINOIS DEPARTMENT OF TRANSPORTATION

June 2000

FHWA-IL-EIS-99-01-D
FEDERAL HIGHWAY ADMINISTRATION

Chicago - St. Louis High-Speed Rail Project
from Chicago to St. Louis
in Cook, Will, Kankakee, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Jersey, Madison, and St. Clair Counties, Illinois, and St. Louis County, Missouri

Draft Environmental Impact Statement

Submitted Pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303
by the
U.S. Department of Transportation
Federal Highway Administration
Federal Railroad Administration
and
Illinois Department of Transportation

Cooperating Agency:
U.S. Coast Guard, Eighth District

MAY 16 2000
Date of Approval

for FHWA Division Administrator

MAY 17 2000
Date of Approval

for FRA Administrator

MAY 15 2000
Date of Approval

for IDOT

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This Draft Environmental Impact Statement evaluates alternatives for providing High-Speed Rail (HSR) service in the 450-kilometer (280-mile) Chicago-St. Louis corridor in Cook, Will, Kankakee, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Jersey, Madison, and St. Clair Counties in Illinois and in St. Louis County in Missouri. The proposed action would help provide a more balanced use of the passenger transportation network in the corridor, resulting in benefits to the human environment. No-Build and High-Speed Rail alternatives are evaluated. High-Speed Rail service would include eight round trips per day with maximum operating speeds between 110 and 125 mph (180 and 200 kph). Between Chicago and Dwight, three alternative alignments are evaluated: 1) utilizing the existing Amtrak route through Joliet; 2) utilizing the IC mainline between Chicago and Kankakee and the Norfolk Southern (formerly the Conrail) between Kankakee and Dwight; and 3) utilizing the Rock Island District between Chicago and Joliet and the Union Pacific between Joliet and Dwight.

Important socio-economic and environmental issues include impacts associated with grade crossing treatments and fencing, agricultural impacts, air quality impacts, noise and vibration impacts, and impacts to wetlands and native prairie remnants.

Comments on this Draft Environmental Impact Statement should be received by AUG 07 2000 and should be sent to Mr. Merrill Travis at the above address.

SUMMARY

S.1 PROPOSED ACTION

The proposed action would provide High-Speed Rail (HSR) passenger service between Chicago and St. Louis, operating at top speeds of 110 mph (180 kph) through most of the project area, except for a 29-kilometer (18-mile) segment between Lincoln and Springfield where 125 mph (200 kph) would be achieved. Service would consist of eight round trips per day on two-hour headways, with one-way end-to-end travel times of approximately 3.5 hours.

Existing track would be utilized for the proposed action throughout most of the project area. Between Chicago and Dwight, three alternative alignments are evaluated. One of the alignments — the Illinois Central/Union Pacific — is the current Amtrak route. Another utilizes Illinois Central mainline and Norfolk Southern (formerly Conrail) track via Kankakee to provide a better route of entry into Chicago and would provide access to the proposed South Suburban Airport site in Peotone. This alignment is referred to as the Norfolk Southern alignment. The third alignment, referred to as the Rock Island District alignment, utilizes Metra Rock Island District track between Chicago and Joliet and Union Pacific track between Joliet and Dwight. South of Dwight, one alternative alignment is evaluated. The alignment matches the existing Amtrak route between Dwight and Granite City. South of Granite City and into St. Louis, the proposed alignment would operate on existing track, but on a different route than the one currently used by Amtrak. For identification purposes, the Chicago to Dwight alternative alignment names are used to represent an entire alignment between Chicago and St. Louis. When Chicago - St. Louis alignments are referred to, the following names are used: Illinois Central/Union Pacific (IC/UP), Norfolk Southern (NS), and Rock Island District (RID). Figure S-1 shows these three Chicago - St. Louis alignments and provides some of the characteristics of each.

All HSR trains would stop at stations in Chicago, Bloomington/Normal, Springfield, Alton, and St. Louis. Between Chicago and Dwight, service on the IC/UP and Rock Island District alignments would stop in Joliet; service on the Norfolk Southern alignment would stop in Kankakee, and Peotone if the South Suburban Airport were constructed. New stations would be required in Joliet with the Rock Island District alignment and in Kankakee and Peotone with the Norfolk Southern alignment. Potential limited skip-stop service may also be provided at most of the other Amtrak stations in the project area.

In addition to potentially adding new stations, provision of HSR service would require construction of 20 to 42 kilometers (12 to 26 miles) of double track; 40 to 43 kilometers (25 to 27 miles) of freight siding; three to five grade-separated highway-railroad grade crossings; and 24 to 28 kilometers (15 to 17 miles) of service roads.

The Federal Highway Administration (FHWA) and the Federal Railroad Administration (FRA) are joint lead agencies for preparation of the documentation required by the National Environmental Policy

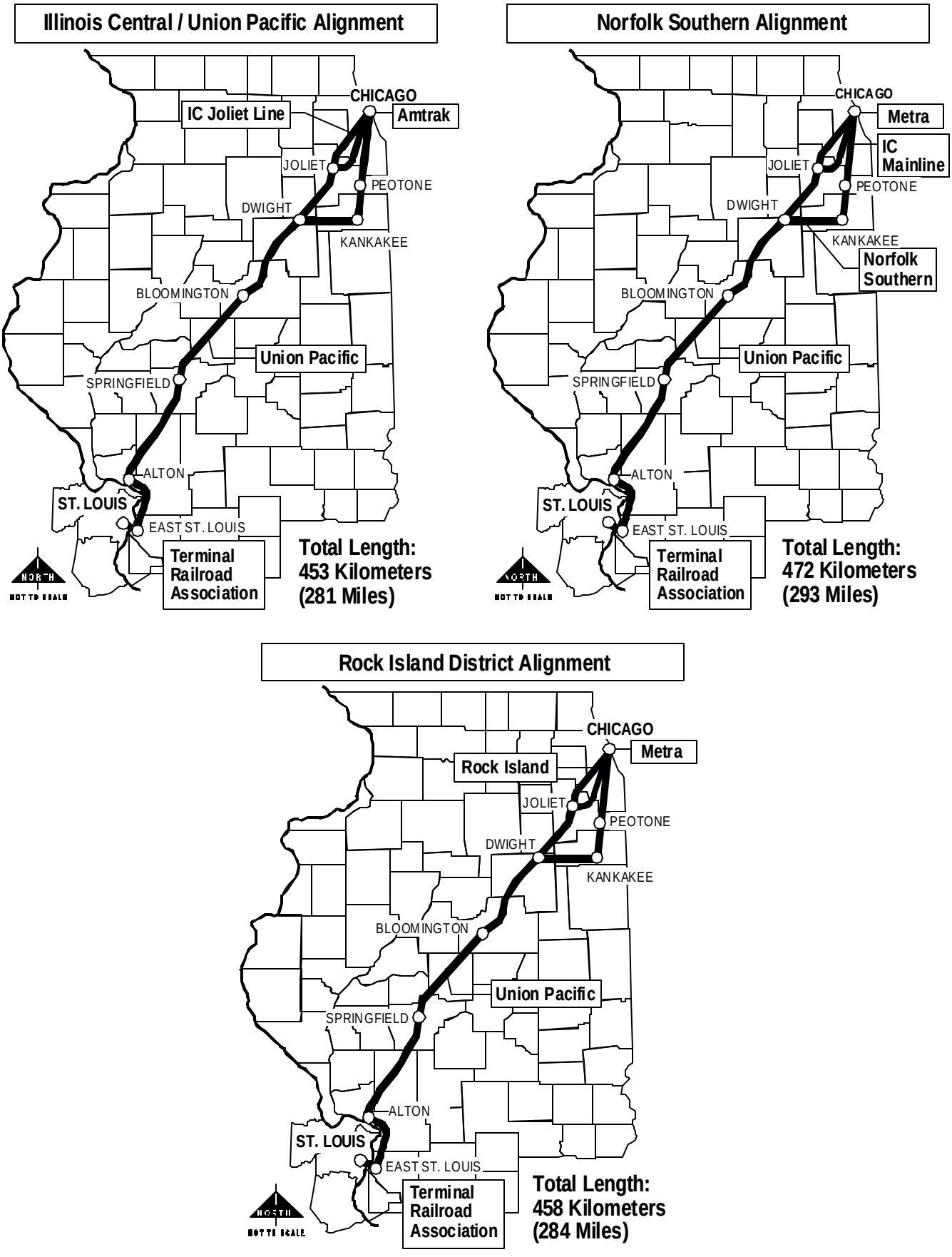

FIGURE S-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ALIGNMENTS

Act (NEPA) of 1969 and related statutes. The responsibility for direct oversight of the environmental studies and preparation of appropriate documentation was undertaken by FHWA's Illinois Division, acting on behalf of FHWA and FRA. The FHWA has determined that the utilization of federal funds for this project will constitute a "major Federal action" according to NEPA. As such, this document has been prepared pursuant to 23 CFR Part 771 (Environmental Impact and Related Procedures).

S.2 ALTERNATIVES CONSIDERED

The alternatives selected for evaluation in this Draft Environmental Impact Statement (DEIS) are: 1) the No-Build alternative consisting of the continuation of existing Amtrak service in the project area, and 2) the High-Speed Rail alternative. As part of the HSR alternative, different alignments, double track and freight sidings, grade crossing treatments, stations, and equipment options were evaluated.

S.2.1 No-Build Alternative

The No-Build alternative is a continuation of existing Amtrak service. Passenger service will operate on the current Chicago - St. Louis Amtrak route between Union Station in Chicago and the Amtrak Station in St. Louis. Service between Chicago and St. Louis will consist of three daily round trips with scheduled one-way trip times of between five hours and 30 minutes and five hours and 45 minutes. No changes in station stops, equipment, or grade crossing treatments will occur with this alternative. Additionally, only regular maintenance and rehabilitation will occur in the project area. No new construction or additional right-of-way will be required.

This alternative will not meet the purpose and need of the project since it will not enhance the passenger transportation network in the Chicago - St. Louis corridor.

S.2.2 High-Speed Rail Alternative

High-Speed Rail passenger service is evaluated as an alternative to current Amtrak service that will address the existing rail passenger service problems in the corridor and that will serve as a more viable alternative to intercity automobile, air, and bus travel between Chicago and St. Louis. This alternative, as described in Section S.1, will help provide a more balanced use of the passenger transportation network in the corridor, resulting in benefits to the human environment. These benefits to the human environment include reductions in volatile organic compound and carbon monoxide emissions and energy consumption associated with intercity travel in the Chicago - St. Louis HSR corridor.

S.3 ALTERNATIVES CONSIDERED AND DISMISSED

High-Speed Rail alternatives providing 140 mph (225 kph) electric and 90 mph (145 kph) diesel service were evaluated and found not to be prudent. Added revenues associated with shorter travel times provided by the 140 mph (225 kph) service would not be sufficient to support the additional costs of an electrified system. The 90 mph (145 kph) service was dismissed from consideration because it was concluded that systems with maximum operating speeds of less than 110 mph (180 kph) would require capital costs similar to a 110 to 125 mph (180 to 200 kph) system, while providing a much smaller service improvement.

S.4 SUMMARY OF IMPACTS

The following is a summary of the impacts associated with the No-Build and High-Speed Rail alternatives. A more detailed description of the alternative impacts evaluated and proposed mitigation is provided in Section 5. Figures S-2A through S-2C depict the environmental constraints identified in the HSR project area. A summary of the impacts identified for the HSR alternative alignments is presented in Table S-1.

S.4.1 Land Use and Farmland

The No-Build alternative will not require any additional right-of-way. Of the HSR alternative alignments, the Norfolk Southern alignment will require the most additional right-of-way — 63 hectares (156 acres). Of this land, 54 hectares (134 acres) have been classified as prime farmland. In contrast, the Rock Island District alignment will require the least amount of additional right-of-way of the alternative alignments — 39 hectares (97 acres). Thirty-two hectares (79 acres) of this total have been classified as prime farmland.

S.4.2 Displacements

No displacements will occur with the No-Build alternative. Displacements associated with the HSR alternative range from one, with the Rock Island District alignment, to 14, with the IC/UP alignment. Eleven of the structures that will be displaced by the IC/UP alignment are residences. This alignment will also displace one business, a church, and one commercial outbuilding. The Norfolk Southern alignment will displace 10 structures — three residences, one business, and six outbuildings.

S.4.3 Employment

The No-Build alternative is not expected to have an impact on employment in the corridor. Implementation of the HSR alternative, however, will result in new jobs from construction and operation. Annual construction employment is projected to range from 1,780 to 3,240 employees depending on the alternative alignment and the year of construction. Employment increases associated with HSR operation are projected to be over 800 employees in the first year of operation.

S.4.4 Water Resources

Under the No-Build alternative there will be no direct impacts that will degrade water quality or aquatic habitat. Short-term impacts to water quality and aquatic biota could occur with the Build alternatives. Between 46 and 61 streams and small tributaries could be affected. Long-term maintenance will be similar to the No-Build. Of all HSR alternative alignments, the Rock Island District alignment will have the least impact on water resources.

S.4.5 Wetlands

With the No-Build alternative no wetland habitat will be lost. The HSR alternative alignments will require the loss of from 5.01 to 5.97 hectares (12.38 to 14.74 acres) of wetland. The build alternative

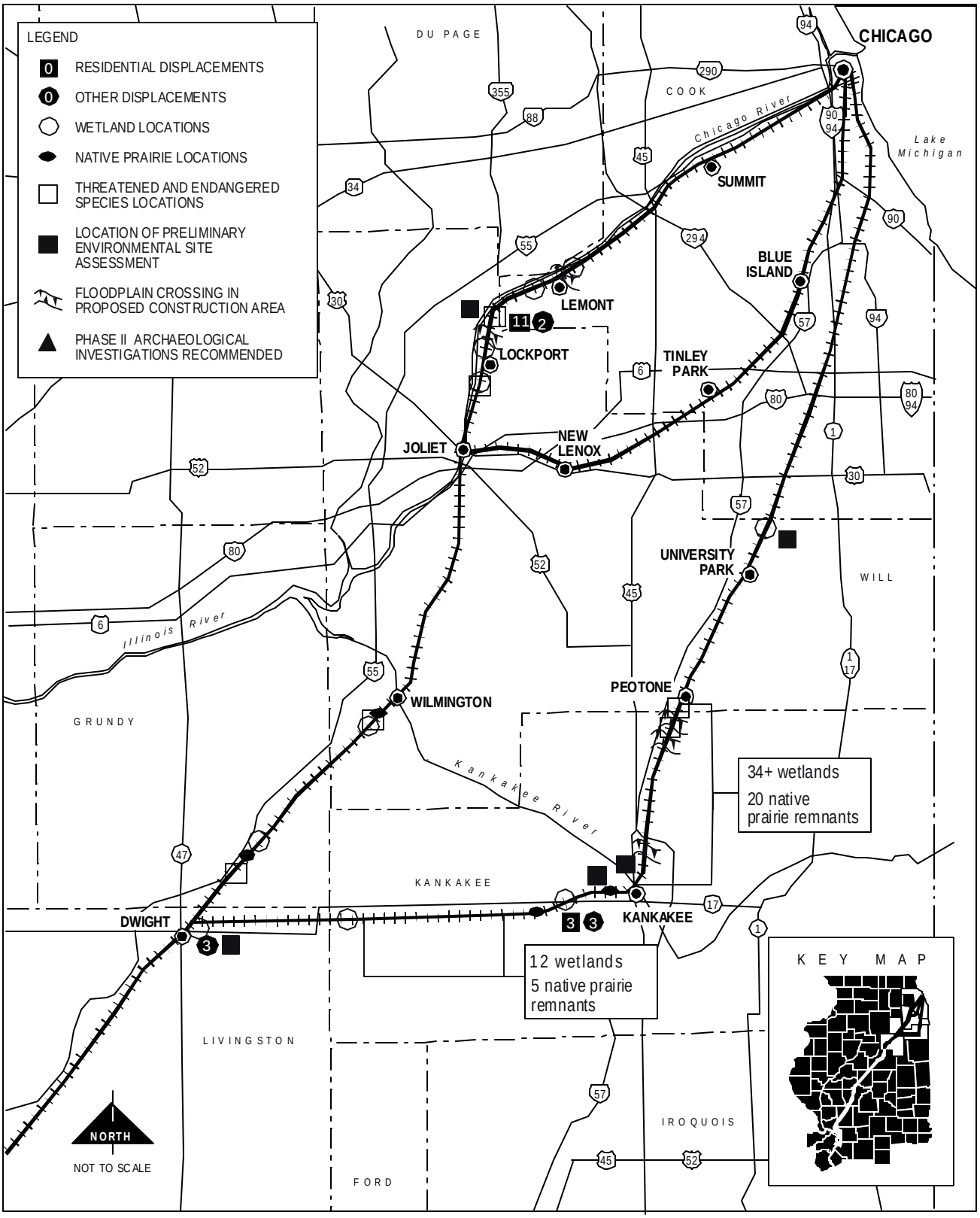

FIGURE S-2A
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ENVIRONMENTAL CONSTRAINTS MAP
(Chicago to Pontiac)

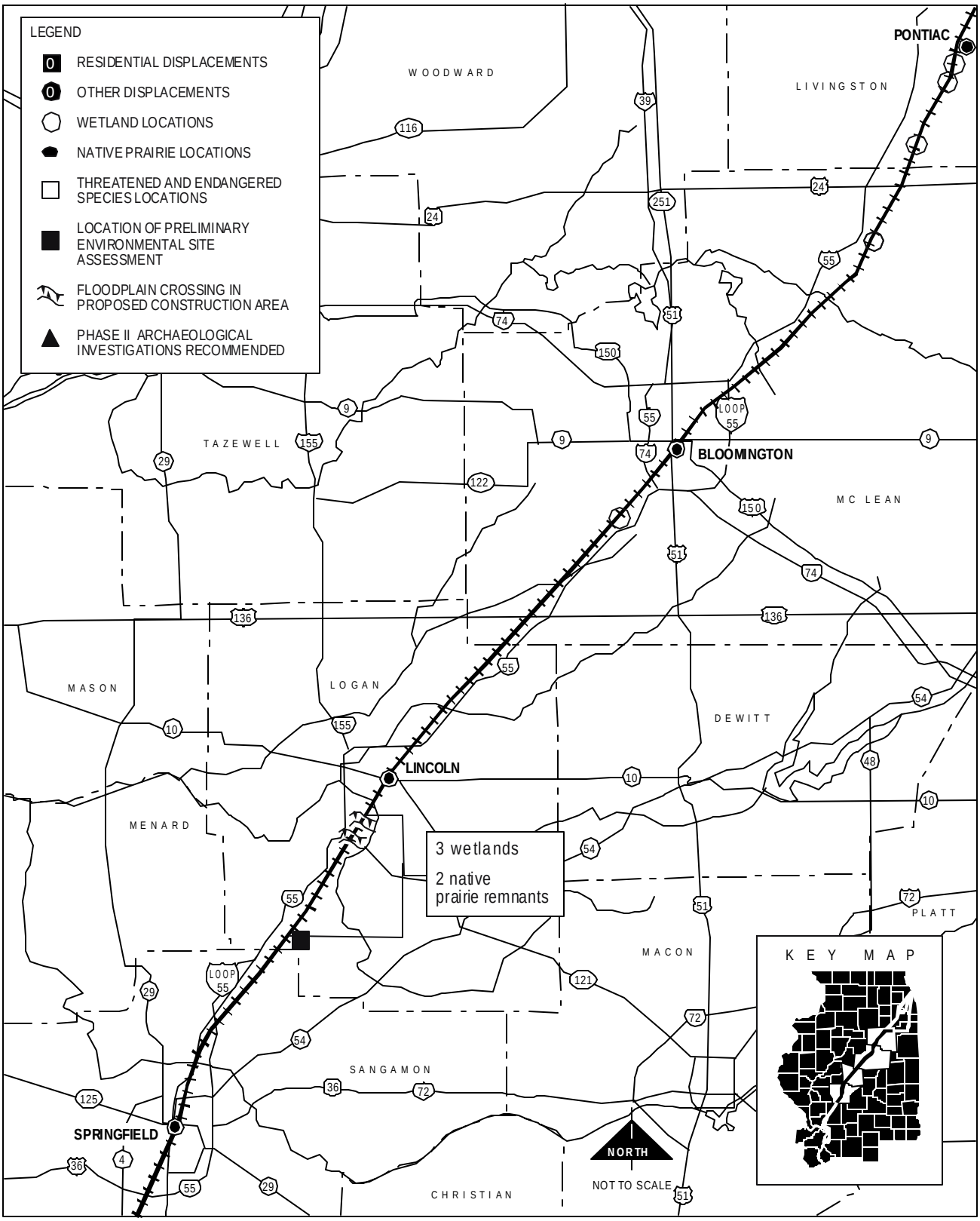

FIGURE S-2B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ENVIRONMENTAL CONSTRAINTS MAP
(Pontiac to Springfield)

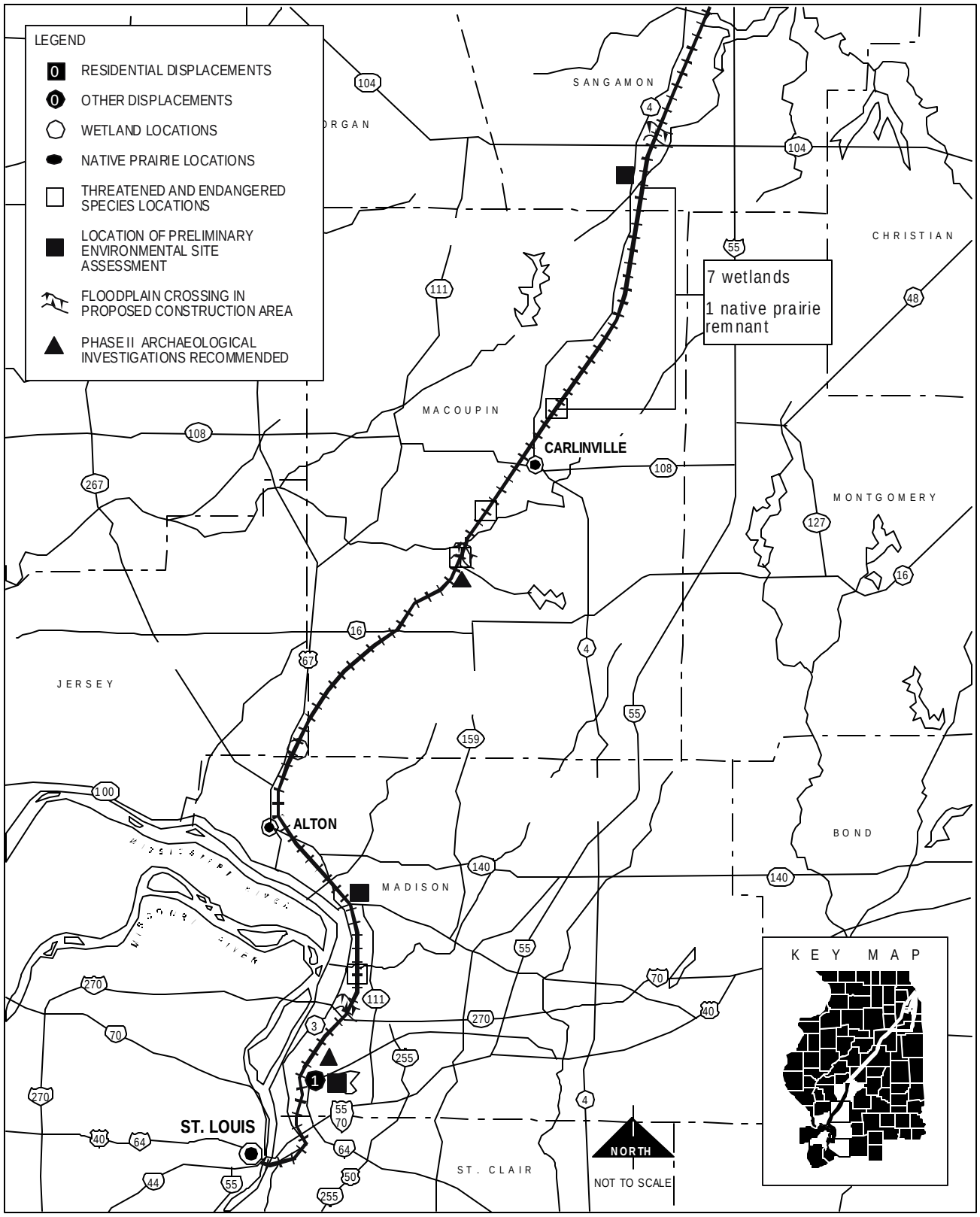

FIGURE S-2C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ENVIRONMENTAL CONSTRAINTS MAP
(Springfield to St. Louis)

Table S-1

IMPACT SUMMARY FOR HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS

	High-Speed Rail Alternative Alignment		
	IC/UP	**Norfolk Southern**	**Rock Island District**
Right-of-Way Acquisition - Hectares (Acres)			
Direct Conversion	49 (121)	63 (156)	39 (97)
Agricultural	31 (76)	47 (115)	31 (76)
Prime Farmland	32 (79)	54 (134)	32 (79)
Displacements (Number)			
Residential	11	3	0
Commercial	1	1	0
Institutional	1	0	0
Other Structures	1	6	1
Noise Impacts (Number of Receptors)	0	0	0
Stream and Tributary Crossings (Number)	56	61	46
Wetland Impacts - Hectares (Acres)			
Impacts	6 (15)	6 (14)	5 (12)
Mitigation Required	25 (62)	8 (20)	22 (53)
Natural Resource Impacts - Hectares (Acres)			
All Upland Vegetation	95 (234)	119 (293)	84 (207)
Native Vegetation (All)	2 (4)	7 (18)	2 (4)
Native Vegetation (Grade C+ or higher)	1 (2)	6 (14)	1 (2)
Floodplains (Projects with floodplain crossings	6	5	4
Cultural Resources (Number)			
Above-ground Resources	0	0	0
Archaeological Resources	0	0	0
Forest Preserves and Parks (Number)	0	0	0
Undetermined Waste Sites (Number)	5	6	4
Highway-Railroad At-Grade Crossings (Number)			
Existing	322	310	350
Proposed for Closure - Pedestrian	17	19	17
Proposed for Closure - Vehicular	68	71	74
Railroad-Railroad At-Grade Crossings (Number)	18	12	15

Note: Impacts listed are for the alignments in their entirety between Chicago and St. Louis.

with the least wetland loss will be the Rock Island District alignment. Wetland impacts will be mitigated through a wetland mitigation plan approved by the Illinois Department of Natural Resources.

S.4.6 Natural Resources

There will be no removal of upland vegetation with the No-Build alternative. From 84 to 119 hectares (207 to 293 acres) of upland vegetation will be removed by the HSR alternative alignments. From 78 to 80 percent of this will be agricultural land, pasture, developed land or forbland. Of the alternative alignments, the Rock Island District alignment will have the least impact on all upland vegetation.

Under the No-Build Alternative there will be no direct removal of native vegetation. The IC/UP and the Rock Island District alignments will require the loss of 1.59 hectares (3.93 acres) of native vegetation. The Norfolk Southern alignment will result in the loss of 7.46 hectares (18.42 acres). Unavoidable impacts to native communities will be mitigated through a prairie mitigation plan.

No direct loss of wildlife habitat will occur due to the No-Build alternative. The alternative alignment with the least impact on all habitat types will be the Rock Island District alignment. The IC/UP alignment will require the greatest loss of upland forest. The Norfolk Southern alignment will have the greatest impact on all habitat types with the exception of upland forest.

Under the No-Build alternative threatened and endangered species and their habitats will not be directly affected. The IC/UP alignment may have potential impacts on the Federally endangered Hine's emerald dragonfly due to the increased frequency of trains and the likely increase in collisions with adult dragonflys crossing the tracks near Lemont, Illinois. The Rock Island District and Norfolk Southern alignments do not pass through this area.

The IC/UP and Rock Island District alignments have the potential to adversely affect the state endangered Eryngium stem borer, while all alternative alignments have the potential to impact the state threatened red-veined leaf hopper and the Federally endangered Indiana bat.

All HSR alternative alignments will require the removal of wetland and prairie habitats within and adjacent to the existing right-of-way. Some of these are high quality areas providing potential habitat for protected species. However, only the little green sedge, a state endangered plant, was found during field surveys.

Coordination has been conducted with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources regarding the potential for the project to affect Federal or state threatened or endangered species. This coordination and consultation will continue in order to assure that appropriate mitigation measures are incorporated into the project so that impacts to protected plant and animal species are minimized or avoided.

S.4.7 Floodplains

Under the No-Build alternative, no impacts to floodplains will occur. Four to six construction projects associated with the High-Speed Rail alternative will occur in areas where 100-year floodplains have been identified.

S.4.8 Cultural Resources

No impacts to archaeological resources were identified under the No-Build or HSR alternatives. No historic above-ground resources will be displaced. However, visual impacts to historic resources could occur under the HSR alternative where grade crossing warning devices are installed, grade separations are constructed, or fencing is added. The State Historic Preservation Office (SHPO) has determined a no adverse effect finding can be accomplished through compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Preservation, 1995.

S.4.9 Special Waste

No CERCLIS sites will be involved or impacted by this project. Ten Preliminary Environmental Site Assessments (PESAs) for special waste were conducted by the Illinois Department of Transportation, Bureau of Railroads. The assessments concluded that the HSR alternative alignments could involve other special waste sites. Further investigations should be conducted to determine risks and liabilities of the involvement prior to land acquisition.

S.4.10 Grade Crossing Treatments

No changes to existing at-grade crossings are proposed for the No-Build alternative. Between 310 and 350 existing at-grade crossings are located along the HSR alternative alignments. Twenty-six to 29 percent of these crossings (85 to 91 crossings) are proposed for closure. However, 17 to 19 of these crossings service pedestrian traffic only.

S.5 AREAS OF CONTROVERSY

One of the more prominent issues associated with the implementation of HSR service is related to the proposed grade crossing treatments. All of the at-grade crossings in the project area were reevaluated as part of the preparation of this DEIS. The recommendations developed and presented in this document supersede those included in the Chicago - St. Louis HSR Study, Grade Crossing Safety Analysis prepared for the Illinois Department of Transportation in 1993 and 1994. Closure of at-grade crossings will disrupt local vehicular operation and inconvenience frequent users. While 26 to 29 percent of the crossings are proposed for closure, these crossings accommodate less than three percent of the average daily traffic (ADT) crossing the alternative alignments throughout the HSR corridor, and many of these crossings serve pedestrian use only. As a result of the grade crossing analysis and review conducted for this project, no crossing is proposed for closure that has an ADT over 2,210 vehicles.

Other areas of controversy include the increase of speeds through small towns where historic buildings or districts are within close proximity to the track and the fencing of the right-of-way that is recommended for most urbanized areas where there are at-grade crossings. The Illinois Department of Transportation will work with local communities on the detailed design of fencing, as well as crossing treatments, when and if a HSR alternative alignment is selected.

S.6 UNRESOLVED ISSUES WITH OTHER AGENCIES

Coordination with the SHPO will continue to determine compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Preservation, 1995, so that a determination of no adverse effect can be accomplished.

Preliminary Environmental Site Assessments were conducted for ten sites in the project area to determine the likelihood of construction occurring in areas where there is known hazardous or non-hazardous waste. Additional testing may be warranted for the special waste locations investigated. At least six months prior to land acquisition the PESAs should be validated. If right-of-way acquisition does not include the ownership or operation of any aboveground or underground storage tanks or discarded waste and if construction grading and excavation does not involve any of the documented or suspected sites, then no additional preliminary testing for the project will be necessary. If the stipulations can not be met after the scope of involvement has been determined and after validation, then additional investigation could be required. In either case, the project will not be implemented until all risks and liabilities of involvement are known and are acceptable to the Illinois Department of Transportation.

Additionally, there is a local air quality issue associated with the Norfolk Southern alignment at the proposed northern terminus in Chicago. The Chicago 1919 Lake Front Development Ordinance precludes operation of fossil-fueled locomotives north of Roosevelt Road extended. If HSR service is to be provided over the most northerly 1.9 kilometers (1.2 miles) of the Norfolk Southern alignment, this issue must be addressed. In the past, dispensations have been given to allow non-electric powered railroad operations into the Randolph Street station. However, these dispensations have only been temporary. Dual-powered locomotives could also be considered as a mitigation action for operation into Randolph Street Station. If permanent access to the Randolph Street Station is not available for HSR service, trains will be routed to Union Station as the Chicago - Carbondale Amtrak route currently is. This issue can not be resolved at this time.

S.7 PERMITS REQUIRED

There will be permit requirements for construction of the HSR alternative associated with the crossing and filling of water resources and wetlands. Section 404 permits will be needed from the U.S. Army Corps of Engineers for wetlands where filling occurs. In addition, a Section 401 water quality certification will have to be obtained from the Illinois Environmental Protection Agency.

Permits from the Illinois Department of Natural Resources, Office of Water Resources, will be required for construction activity in and around streams and floodplains.

It is anticipated that this project will result in the disturbance of two or more hectares (five or more acres) of total land area. Therefore, it will be subject to the requirement of a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction sites. Permit coverage for the project will be obtained either under the Illinois Environmental Protection Agency General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit No. ILR10) or under an individual NPDES permit.

If endangered species are identified during project implementation, all activity in the immediate area would cease. Coordination with the U.S. Fish and Wildlife Service would be initiated as required by Section 7 of the Endangered Species Act of 1973, and appropriate state or federal permits would be sought.

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

S.8 TECHNICAL DOCUMENTS

A series of technical documents were produced to support the development of this document. They are on file with the Illinois Department of Transportation and can be reviewed upon request. They cover the following areas:

- Grade Crossing Treatments;
- Wetlands;
- Native Vegetation;
- Threatened and Endangered Species;
- Phase I Archaeological Research;
- Above-Ground Cultural Resources;
- Air Quality; and
- Noise and Vibration.

Additionally, documentation regarding the Special Waste Screening and the Preliminary Environmental Site Assessments is on file with the Geologic and Waste Assessment Unit.

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Section 1
PURPOSE AND NEED

1.1 PURPOSE OF THE PROPOSED ACTION

1.1.1 Purpose

The primary purpose of this proposal is to enhance the passenger transportation network in the Chicago - St. Louis corridor, resulting in a more balanced use of its components. The existing network consists of highway (automobile and bus), air and rail (Amtrak) travel. Currently, 99 percent of the 35 million trips made annually in the Chicago - St. Louis corridor are accomplished through automobile and air travel. This proposal is intended to result in more balanced use of the network by diverting trips made by automobile and air. A more balanced use of the network will also provide benefits to the human environment over the existing network use. As identified below, congressional initiative has focused this proposal on the study and advancement of High-Speed Rail (HSR).

1.1.2 Intermodal Surface Transportation Efficiency Act - Section 1036

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established as policy that the United States should develop a National Intermodal Transportation System which is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and moves people and goods in an energy efficient manner. Provisions for high-speed ground transportation are set forth in Section 1036 of this legislation and state that it is the policy of the United States to promote the construction and commercialization of high-speed ground transportation systems.

As part of ISTEA, Congress authorized funds for a national high-speed ground transportation technology demonstration program. Congress provided funding to the Illinois Department of Transportation (IDOT) to advance the proposed Chicago - St. Louis HSR project as part of an overall Federal effort to research and develop high-speed ground transportation technologies in order to foster the implementation of high-speed steel wheel on rail transportation systems as alternatives to existing transportation systems.

1.1.3 Project Description

This proposal involves the development, implementation and operation of HSR service in the approximately 450-kilometer (280-mile) Chicago - St. Louis corridor. The project area and the alternative alignments considered for HSR service are shown on Figure 1.1-1.

Currently, the metropolitan population in the Chicago - St. Louis corridor is 10.8 million. Ninety-seven percent of this population resides in the metropolitan areas of Chicago and St. Louis. Ridership

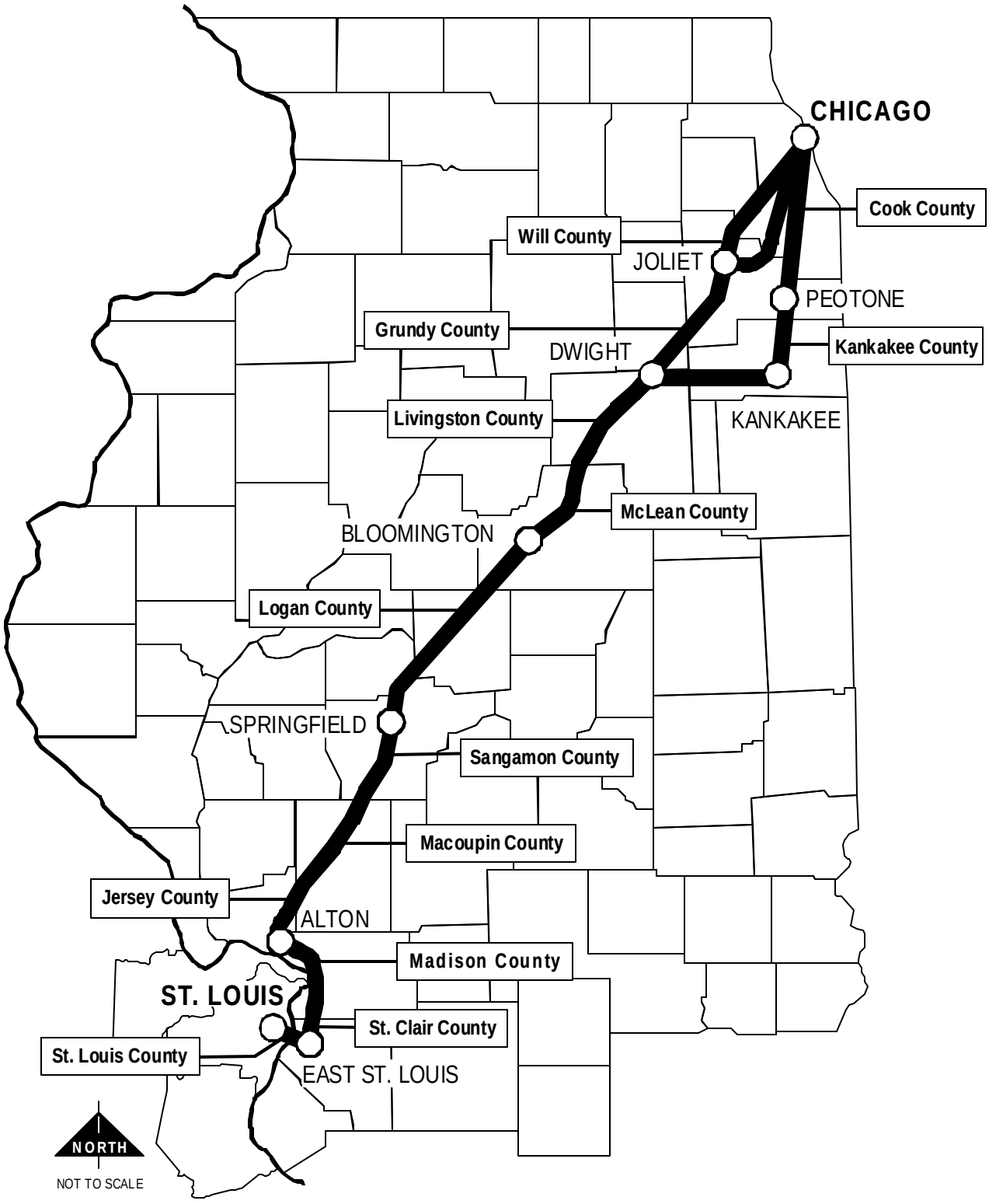


FIGURE 1.1-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
PROJECT AREA

forecasts developed for high-speed rail service indicate that approximately 50 percent of future trips will originate and terminate in Chicago and St. Louis, and that projected ridership is predominantly made up of travelers residing within the corridor.

1.2 PROJECT HISTORY

Prior to the enactment of ISTEA, high-speed rail in the Chicago - St. Louis corridor was first studied in 1979. A system consisting of a 150 mile per hour (240 kilometer per hour), electrified, double tracked system was evaluated. It was estimated that implementation of this system would cost approximately $2.2 billion in 1994 dollars. At the end of the study, it was concluded that the potential cost of new alignment high-speed rail service was unaffordable, and that efforts should be concentrated on improving existing passenger train service instead of implementing high-speed rail using new alignments.

Over the past several years, IDOT has been vigorously pursuing the improvement of passenger train service between Chicago and St. Louis. These efforts have involved subsidizing Amtrak operations and investing capital to upgrade Amtrak facilities. Extensive rehabilitation of the track between Joliet and East St. Louis was completed using $40 million in loans and grants provided by IDOT and additional loans from the Federal Railroad Administration (FRA). In all, approximately $10 million has been provided in federal loans and grants for the track upgrade between Joliet and East St. Louis and construction of a new route between Granite City and East St. Louis. Additionally, approximately $4 million in Section 1010 funds from the FRA has been used to test vehicle arresting barriers in the high-speed rail corridor.

In 1992 the Secretary of Transportation designated the Chicago - St. Louis line part of the "Chicago Hub Network" high-speed rail corridor. That same year IDOT developed a conceptual plan analyzing HSR service between Chicago and St. Louis. In 1992, IDOT, in cooperation with Amtrak, initiated a feasibility study of high-speed rail passenger service in order to develop a realistic and achievable blueprint for implementation of HSR service in the Chicago - St. Louis corridor. During the feasibility study, different alignments were evaluated using both diesel- and electric-powered trains at different ranges of speed. At the completion of the study in May 1994, it was concluded that 110 to 125 mile per hour (180 to 200 kilometer per hour) HSR diesel-powered service operating primarily on existing rail lines would be viable from both a ridership and financial perspective. The findings were documented in the Chicago - St. Louis High Speed Rail Financial and Implementation Plan (May 1994) and validated in the commercial feasibility study released by the FRA, High-Speed Ground Transportation for America (August 1996).

As part of the Financial and Implementation Plan, estimates of ridership, revenue and cost were developed. It was estimated that implementation of HSR service would cost approximately $400 million. Approximately one-fifth of the costs would be required to improve safety conditions at existing highway-railroad at-grade crossings. With service consisting of eight daily round trips between Chicago and St. Louis at speeds of up to 125 miles per hour (200 kilometers per hour), annual operation costs were estimated at $32 million. Annual ridership projections were approximately 1.3 million for the year 2010, which would produce approximately $62 to $64 million in annual revenue. Cost and revenue estimates developed for the Financial and Implementation Plan are in 1993 dollars.

While the Financial and Implementation Plan study was being conducted, the issue of a third regional airport in the Chicago area materialized. As a result of the site assessments conducted, Peotone was selected as the preferred site for a south suburban airport. An important element in the viability of a south suburban airport will be its accessibility to the Chicago metropolitan area. To serve this proposed airport, HSR service

alternative alignments were analyzed that could connect Peotone to Chicago and to the Union Pacific line, south of Joliet. One of these alternative alignments is still under consideration and is evaluated in this Draft Environmental Impact Statement (DEIS). HSR serving the airport would stop north of Peotone and west of the airport, where shuttle service would be provided between this HSR station and the airport terminal. Regardless of whether or not the third airport is constructed, this alternative alignment is considered viable from a ridership perspective. Intercity ridership estimates for this alignment, assuming no airport is constructed, are similar to those on the other alignments. Additionally, this alignment would impact fewer at-grade crossings than the other alignments with only three grade crossings in the first 37 miles from Chicago as opposed to the over 30 on the current Amtrak route to Joliet.

1.3 NEED FOR THE PROPOSED ACTION

According to the ridership estimates prepared in conjunction with the Financial and Implementation Plan, the 1991 mode split for annual person trips in the corridor is 95.5 percent for automobile, 3.1 percent for air, 1.1 percent for rail (Amtrak), and 0.3 percent for bus. The person trip estimates updated for 1998 indicate a similar split. Over 90 percent of the over 35 million corridor trips have origins or destinations in either Chicago or St. Louis. For there to be a more balanced transportation system in the corridor, trips must be diverted from the predominant modes of automobile and air. To achieve this, either a new transportation mode must be introduced or improvements to an existing, less frequently used transportation mode must be made. The conditions that will attract travelers from automobile and air travel to a new or improved mode of transportation are reduced travel time, service reliability, and safety. In addition to diverting travelers, the new or improved mode, as part of the entire transportation network, must result in improvements to the human environment relative to air pollution and energy consumption. These improvements to the human environment will be realized through the use of modern, state-of-the-art equipment and efficiency.

This proposal focuses on improving rail transportation by introducing HSR service to replace the existing passenger rail service.

1.3.1 Reduced Travel Time and Improved Service Reliability

Reducing travel time and improving service reliability are of paramount importance to increasing the viability of an improved mode of transportation.

The HSR service would reduce travel time between Chicago and St. Louis, resulting in travel times that are shorter than can be achieved by automobile or bus. Additionally, downtown-to-downtown travel times by rail would be comparable to air service.

Reliability, relative to HSR, is a product of frequency of service, on-time performance, and accessibility. The HSR proposal advanced would have significant improvements in terms of frequency of service and on-time performance over the existing Amtrak service and would also be more or as accessible as existing and future proposed air service. The HSR service would also not be subject to highway congestion near the Chicago and St. Louis downtown areas or airports.

1.3.2 Safety

To divert travelers from automobile and air modes, potential HSR passengers must also believe use of the service is safe, as well as faster and more reliable. Safety pertains to passengers getting to and using the

parking facilities at the HSR stations, walking through the stations to board the service, and traveling on the HSR service. Safety enhancements included as part of the HSR proposal advanced would result in improvements to overall rail passenger safety when compared to existing rail service and the other modes of travel.

1.3.3 Human Environment

Provision of a transportation network with a more balanced use of the different modes would result in benefits to the human environment. The HSR proposal would include modern, state-of-the-art rail equipment that would result in an overall reduction in passenger transportation-related emissions in the corridor when air quality is considered. Emissions from existing rail service, with the exception of nitrogen oxides, are less than either auto or air travel when compared on a passenger-kilometer (passenger-mile) basis. As a result, diversions of travel from these modes to HSR service would result in reduced volatile organic compound and carbon monoxide emission levels in the corridor.

Additionally, implementation of the HSR proposal advanced would result in an overall reduction in energy consumed by the alternative modes of travel in the corridor. Existing rail passenger service in the corridor is currently more efficient than air and automobile travel, in terms of energy consumption per passenger-kilometer (passenger-mile), and the proposed HSR service would improve upon this efficiency.

Section 2
AFFECTED ENVIRONMENT

This section describes the existing environmental conditions in the Chicago - St. Louis High-Speed Rail (HSR) project area. The communities and counties in the HSR project area are identified in Figure 1.1-1 (in Section 1). The project area is defined as the area of potential impact along the railroads considered as alternative alignments for the Chicago - St. Louis HSR project. (See Section 3 for a description of alternative alignments.) The term corridor is also used in a broader sense to describe the affected environment relative to travel, ridership, general land use and demographics, air quality, and energy.

2.1 EXISTING LAND USE

2.1.1 Development Patterns

Historically, St. Louis and Chicago have served as major continental transportation centers, both tracing their origins to water and rail transportation routes. St. Louis originally developed from its role as a port on the Mississippi River which provided access to domestic and foreign markets. Chicago prospered from its strategic location on Lake Michigan and access to eastern markets through the Erie Canal and the Great Lakes. During the 19th Century, the addition of railroads linking these cities forged an economic lifeline between Chicago and St. Louis. Construction of the rail network spawned the growth of numerous communities which served as regional centers for the collection and distribution of goods for a rich agricultural hinterland. The influence of the railroad remained strong until interstate highways joined the transportation system in the 1950s and 1960s. In contrast to the railroads, which created new communities along their length, interstate highways were constructed around, and bypassed, the existing rural communities. Because the interstates had limited points of access, county roads that connected with, or crossed over them, linking existing communities, became particularly important to the rural areas. As the economy of the region and the nature of agribusiness have changed, both highways and railroads have remained important elements of community life.

Rural communities, which developed along the historic rail corridor, were typically laid out in a grid pattern consistent with the township-and-range system established by the Land Ordinance of 1785. As part of this ordinance, six-mile square townships were designated, each with 36 one-mile square sections. Since the railroad is located in a general northeast-southwest direction between Chicago and St. Louis, city and village streets, typically designed on a north-south/east-west grid system, cross the tracks at sharp angles. This configuration was not a serious traffic problem when rail crossings were traversed by pedestrians or horses. However, the combination of automobile and truck traffic, at significantly increased volumes, and the diagonal orientation of intersections, has compromised safety and operational efficiency at rail crossings within rural communities. The use of larger agricultural vehicles, which are periodically driven to town to deliver grain to the local grain elevator, has also contributed to traffic congestion and hazards at highway-railroad at-grade crossings. Depending upon the size of the community, the number of highway-railroad at-grade crossings — those that occur at the same elevation — typically ranges from three to 15, with three to five crossings typically in the smaller communities and 10 to 15 in the regional centers.

In the rural areas, the road network follows the national grid system established by the above referenced ordinance, and primary county highways typically cross at 1.6-kilometer (one-mile) intervals, on section lines. Old U.S. Route 66, a historic federal road, runs parallel to the rail corridor between Cook County and Springfield and serves a unique and important role in providing direct highway access along the railroad to each corridor community. Roads crossing the railroad tracks are generally at-grade and are important to the maintenance of continuity of the roadway system, providing access across the tracks to Old U.S. Route 66, farmland, rural residences or the interstate. Private rail crossings have been constructed for privately-owned parcels which are crossed, or separated from roadway access, by the tracks. In some instances, private crossings provide the sole access to a parcel.

The downtown areas of the small rural communities along the corridor developed in a compact pattern along the railroad. The location of buildings and uses, determined by railroad accessibility, resulted in a clustering around the train stations and sidings. Land uses which relied heavily upon rail service concentrated in this area and include uses such as: grain elevator, post office, passenger train station, commercial establishments and industrial plants and mills. Other facilities important to community life, such as the town hall, a civic park, school, fire station, post office, hotel and dining establishments, were also often constructed in proximity to the railroad passenger station. These facilities continue to play a key role in the economic and social livelihood of the downtown core while serving residents throughout the community.

Buildings of historic value help to give an identity to a local community and are therefore noted in the characterization of land uses. Within each segment, there are downtown areas that have historic value recognized at the local, state or federal level.

Eight rural communities along the corridor have developed into regional centers over the past century. These are: Joliet, Kankakee, Pontiac, Bloomington/Normal, Lincoln, Springfield, Carlinville, and Alton. Population, land uses, building density, and the local transportation system distinguish the regional centers from the rural communities. The regional centers also typically have a wide range of agricultural, commercial and industrial services and suppliers; and provide medical facilities and opportunities for higher education not available in the smaller rural communities. For example, Springfield, the state capital located near the geographic center of the state, has expanded from its original core concentration of government uses and major tourist attractions. The City of Springfield is home to more than 50 percent of the 195,833 persons living within the Springfield Metropolitan Statistical Area (MSA) which includes Sangamon and Menard counties. Bloomington/Normal has developed into an educational hub with four universities and colleges serving a student population of 24,400.

Interstate highways that generally run parallel to the alternative alignments in the HSR corridor are Interstate 55 and Interstate 57. They link corridor communities to the major metropolitan areas of Chicago and St. Louis. These highways also carry substantial vehicular traffic between the smaller communities along the corridor. Typically, these interstates have bypassed older communities. Within the regional centers, the bypasses have stimulated growth in fringe areas where land was available with easy access to an interchange. Development in the vicinity of interchanges tends to be large-parcel manufacturing plants, shopping centers and industrial facilities which rely upon the highway network and employee and consumer accessibility. Residential subdivisions and recreational uses also occur in proximity to the interchanges, generally beyond the immediately adjacent parcels.

The existing land use conditions in the corridor are described by county in Section 2.1.3.

2.1.2 Agriculture and Prime Farmland

The State of Illinois is an agricultural state, as illustrated by the data provided in Table 2.1-1. Eighty percent of the state's total area is farmland used for the production of crops, timber or livestock. With the exception of the urbanized metropolitan areas of Chicago and St. Louis, agriculture is the primary land use along the high-speed rail corridor. Of the 12 corridor counties in Illinois, farmland accounts for over 90 percent of the total county land area in Livingston, McLean, and Logan counties, and over 80 percent of the total land area in three others. Value of agricultural products sold in 1995 was highest in McLean, Livingston and Sangamon Counties with $251, $209 and $169 million, respectively. Will, Kankakee, Logan, and Macoupin Counties generated farm product values over $120 million in 1995. Since the HSR project area in St. Louis County is within a completely urbanized area, agriculture data for this county is not presented in Table 2.1-1.

Prime farmland, as defined by the Farmland Protection Policy Act, is "land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage" (Farmland Protection Policy Act of 1981, Title 7, Agriculture).

All of the high-speed rail alternative alignments follow and will occur primarily within existing railroad right-of-way. Project improvements, including the construction of grade separations, frontage/service roads, double track, and freight sidings, will occur within or adjacent to the existing rights-of-way. For this reason, there will be little acquisition of farmland. Impacts to farmland, including that classified as prime, is described in Section 5.2.

2.1.3 Existing Land Use Description by County

2.1.3.1 Cook County

Existing Land Use:

Three railroads — the Illinois Central (IC) Joliet Line (with Amtrak tracks), the IC New Orleans Mainline (with Metropolitan Rail Corporation (Metra) tracks), and the Metra-owned Rock Island District (RID) Line — that could potentially accommodate HSR service are located in Cook County. Current Chicago - St. Louis Amtrak service operates on the IC Joliet Line in Cook County.

Table 2.1-1
AGRICULTURE DATA FOR COUNTIES IN HIGH-SPEED RAIL PROJECT AREA

County	County Land Area Sq. Km. (Sq. Mi.)		Total Value of Products Sold* ($1,000)	Land in Farms Hectares (Acres)		Percent of Land Farmed
State of Illinois	144,000	(55,593)	6,376,801	11,549,300	(28,526,664)	80.20
Cook	2,450	(946)	24,396	17,100	(42,244)	6.97
Will	2,170	(837)	120,653	132,000	(326,054)	60.80
Kankakee	1,760	(678)	141,014	145,300	(358,920)	82.70
Grundy	1,090	(420)	79,849	91,300	(225,506)	80.30
Livingston	2,700	(1,044)	209,032	258,800	(639,149)	95.70
McLean	3,070	(1,184)	251,105	289,800	(715,736)	94.50
Logan	1,600	(618)	134,796	150,100	(370,624)	93.70
Sangamon	2,250	(868)	168,927	181,800	(448,925)	80.80
Macoupin	2,240	(864)	122,583	163,700	(404,382)	73.10
Jersey	960	(369)	47,963	74,000	(182,772)	77.40
Madison	1,880	(725)	83,060	123,000	(303,779)	65.50
St. Clair	1,720	(664)	73,236	107,800	(266,200)	62.60

Source: Illinois Agricultural Statistics, Annual Summary 1997. Illinois Department of Agriculture and USDA.
Compiled by Planning Resources, Inc.

*Based on Annual Livestock Cash Receipts-1995 and Annual Crop Cash Receipts-1995 as reported in Illinois Agricultural Statistics, Annual Summary 1997.

Illinois Central Joliet Line. The IC Joliet Line (with Amtrak tracks) extends from Union Station in Chicago's downtown for approximately 44 kilometers (27 miles) in Cook County, passing through Chicago and older Chicago suburbs, including Cicero, Forest View, Summit, Bedford Park, Willow Springs, and Lemont. Heavy industrial land use is predominant along the tracks in Cook County between Chicago and Lemont. In Lemont, the railroad passes through the central business district. Between Chicago Union Station and the Lemont area, there are three public highway-railroad at-grade crossings. Five public grade crossings currently exist within the Lemont village limits.

The existing land uses which occur adjacent to this historic railroad corridor reflect the influence of heavy rail traffic. The raised embankment along much of the length allows grade separated roadway crossings at selected points but creates a physical and visual barrier in the intervening areas. Within industrial districts, at-grade crossings are generally private, providing access to large-parcel, heavy industrial facilities. The Chicago Sanitary and Ship Canal, which runs parallel to and west of the tracks, and I-55 to the east, also disrupts road network continuity and limits access across the IC Joliet Line tracks. Metra commuter rail stations are located in Summit, Willow Springs, and Lemont; Chicago - St. Louis Amtrak service also stops at the station in Summit.

Lemont's business core was originally stimulated by rail service and access to the Illinois and Michigan Canal. The central business district in Lemont continues to provide a mixture of retail commercial, institutional and recreational land uses in proximity to the railroad. As part of downtown revitilization efforts, Lemont is working to preserve the historically significant structures located close to the railroad. Enhancing pedestrian access and movement is important to this downtown.

Illinois Central New Orleans Mainline. The IC mainline (with Metra tracks) extends for approximately 48 kilometers (30 miles) in Cook County from Randolph Street Station in Chicago to Richton Park, passing through several southern suburbs of Chicago, including Homewood, Flossmoor, Matteson, and Olympia Fields. The tracks are located entirely within incorporated areas of Cook County.

There is one highway-railroad at-grade crossing, a private crossing located at the south end of the county near Richton Park, along the IC mainline as the tracks are almost entirely grade separated.

Rock Island District Line. The Metra-owned Rock Island District Line extends for approximately 42 kilometers (26 miles) in Cook County from the LaSalle Street Station in Chicago to Tinley Park. In addition to these two communities, the RID passes through Blue Island, Robbins, Midlothian, and Oak Forest. While there are 48 at-grade crossings located along the RID in Cook County, 17 are pedestrian crossings associated with the Metra stations located throughout the county.

The RID is located primarily within incorporated areas of Cook County. A variety of land uses are located along the railroad track throughout the county.

Special Areas:

Illinois Central Joliet Line. The Illinois and Michigan Canal National Heritage Corridor, which extends through Lemont along the IC Joliet Line, is a 190-kilometer (120-mile) long urban cultural park which has historic value and is a tourist attraction.

2.1.3.2 Will County

Existing Land Use:

Four existing railroads — the IC Joliet Line, the Union Pacific (UP), the IC New Orleans Mainline, and the Rock Island District Line — that could potentially accommodate HSR service are located in Will County. Current Chicago - St. Louis Amtrak service operates on the IC Joliet Line and the Union Pacific in this county.

Illinois Central Joliet Line and Union Pacific (IC/UP). In Joliet, the IC Joliet Line switches to the Union Pacific tracks. The IC/UP tracks extend for approximately 53 kilometers (33 miles) in Will County, passing through Romeoville, Lockport, Joliet, Elwood, Wilmington, Braidwood, and Godley.

The IC/UP tracks pass through the center of communities whose business core was originally stimulated by rail service and access to the Illinois and Michigan Canal. The central business districts in Lockport, Joliet and Elwood continue to provide a mixture of retail commercial, institutional and recreational land uses in proximity to the railroad. Highway-railroad at-grade crossings occur in the downtown areas of Lockport and

Elwood. Joliet has two highway-railroad at-grade crossings located immediately north of its downtown area. All highway-railroad crossings within Joliet's downtown are grade separated.

Within the industrial areas along the IC/UP tracks in Will County, highway-railroad at-grade crossings are generally private, providing access to large-parcel, heavy industrial facilities, such as petroleum tank farms and chemical plants. South of Joliet, outside of the incorporated areas of Wilmington, Braidwood, and Godley, most of the land use adjacent to the tracks is agricultural.

Illinois Central New Orleans Mainline. The IC mainline extends for approximately 21 kilometers (13 miles) in Will County, passing through agricultural areas and the downtown areas of Monee and Peotone. Interstate 57 generally runs parallel to and 1.6 kilometers (one mile) west of the IC mainline through Will County.

Land uses adjacent to the railroad in Monee and Peotone are characteristic of those found in the small rural communities. All of the highway-railroad crossings in Monee are grade separated. There are five at-grade crossings in Peotone.

With the growth of the Chicago Metropolitan area, development has moved outward to the communities and unincorporated areas within eastern Will County. These areas already have several large-site facilities along the railroad, including industry and Governor's State University, in University Park.

Rock Island District Line. The Metra-owned Rock Island District Line extends for approximately 23 kilometers (14 miles) in Will County, between Mokena and the Union Pacific Railroad in Joliet. The railroad passes through Mokena, New Lenox, and Joliet. There are Metra commuter service stations in all three communities. In Will County, there are 16 highway-railroad at-grade crossings along the RID.

Through this county, a variety of residential, commercial, and industrial uses are located along the railroad.

Special Areas:

Illinois Central Joliet Line and Union Pacific (IC/UP). In downtown Lockport, there are numerous buildings concentrated along the railroad with historical significance. Lockport is working to preserve these buildings as a part of revitalization efforts. Enhancing pedestrian access and movement is important in Lockport. In addition, the Illinois and Michigan Canal National Heritage Corridor extends through Lockport and Joliet.

South of Elwood, the railroad passes through the Joliet Arsenal, a 9,500-hectare (23,500-acre) site where ammunition was once produced for the U.S. Army. The Arsenal Coordinating Council has been formed to facilitate a reuse plan that calls for the conversion of 7,700 hectares (19,000 acres) into a prairie parkland. This parkland, titled the Midewin National Tallgrass Prairie, is owned by the U.S. Forest Service. It will serve as both a nature preserve and a recreational open space with biking and hiking trails. The Joliet Arsenal redevelopment plan also includes: construction of a 370-hectare (910-acre) National Veteran's Cemetery on the west side adjacent to the railroad; two industrial parks; and a 170-hectare (425-acre) county landfill. In 1995, the Illinois Land Conservation Act of 1995 was introduced to create the Midewin National Tallgrass Prairie and implement the Joliet Arsenal Land Use Concept Plan. The Midewin National Tallgrass Prairie will be the largest prairie east of the Mississippi River.

An additional special area in this county is the Unicom Braidwood Nuclear Power Plant, located immediately southeast of Braidwood. Roadways serving this facility that cross the railroad are designated emergency evacuation routes.

Illinois Central New Orleans Mainline. The agricultural area east and north of Peotone has been selected as the site for the proposed South Suburban Airport.

2.1.3.3 Kankakee County

Existing Land Use:

Two existing railroads — the Illinois Central New Orleans Mainline and the Norfolk Southern (NS) — that could potentially accommodate HSR service are located in Kankakee County. Current Chicago - St. Louis Amtrak service does not operate on either of these railroads.

Illinois Central New Orleans Mainline. The IC mainline extends for approximately 19 kilometers (12 miles) in this county, between the Will-Kankakee County line and the intersection with the Norfolk Southern railroad. In Kankakee County, this railroad passes through Manteno, Bourbonnais, Bradley, and Kankakee. Kankakee is a regional center in east-central Illinois. Interstate 57 generally runs parallel to and west of the railroad. In Bourbonnais, Interstate 57 crosses the IC mainline; south of this crossing, it runs east of the railroad.

The railroad passes through the downtown area of Manteno, where there are four at-grade crossings. Land uses adjacent to the railroad in Manteno are characteristic of those found in the small rural communities.

With the growth of the Chicago Metropolitan area, development has moved outward to the communities and unincorporated areas in northern Kankakee County. Manteno, an agricultural community with 3,500 residents, has experienced industrial growth with commercial traffic generated by Illinois Diversatech and the Sears and K-Mart distribution centers. An asphalt plant, a large stone quarry, and a steel plant are located north of Kankakee.

An urbanized regional center comprised of three contiguous communities — Bourbonnais, Bradley, and Kankakee — is located along the IC mainline. Bourbonnais, since its beginning, has functioned as an educational center with the Olivet Nazarene University, established in 1907. Residential construction is occurring in Bourbonnais. Bradley, once the area known as "North Kankakee", has experienced residential growth east of Interstate 57. The Northfield Mall, Wal-Mart, and several restaurants are located in Bradley.

The City of Kankakee, which emerged as an agricultural and manufacturing hub along the IC mainline tracks, has experienced a recent population increase resulting from the growth and expansion of the transportation, food and chemical industries. Land uses include a central business district along the railroad, a regional shopping center (Meadowview Shopping Center), and industrial development. Industry has concentrated around the two major railroads within Kankakee, the IC mainline and the Norfolk Southern. There are two underpasses on the IC mainline in Kankakee.

Norfolk Southern. The Norfolk Southern (formerly the Consolidated Rail Corporation Streator Secondary Line or Conrail) extends for approximately 32 kilometers (20 miles) in Kankakee County in an east-west direction through the project area. The railroad passes through the heart of downtown Kankakee and Union

Hill. However, most of the Norfolk Southern track in Kankakee County is located in unincorporated agricultural areas. There are a total of 29 at-grade crossings of the Norfolk Southern in Kankakee County, mostly occurring in unincorporated areas.

The Riverside Medical Complex, a regional hospital in Kankakee, is located adjacent to the railroad. Commercial land uses also surround the railroad in Kankakee. Further west, outside Kankakee's densely urbanized areas, the railroad passes near grain elevators, the Norfolk Southern railyard, and Phillips Pipeline Company, a petroleum distribution company. Development is occurring within the agricultural areas west of Kankakee.

Union Hill is a small agricultural community with less than 100 residents. Grain storage facilities surround the only rail crossing in this community.

Special Areas:

No special land use areas were identified within the HSR corridor in Kankakee County.

2.1.3.4 Grundy County

Existing Land Use:

The Union Pacific extends for approximately 19 kilometers (12 miles) in the southeast corner of Grundy County. Most of the land adjacent to the track is used for agriculture in this county. However, it also passes along the edge of Braceville and through the center of Gardner.

Residential development occurs along the Union Pacific in Braceville. In Gardner, numerous institutional and commercial uses, as well as a grain elevator, are found along the railroad. There are a total of 16 highway-railroad at-grade crossings, including two in Braceville and six in Gardner, in Grundy County.

Special Areas:

No special land use areas were identified within the HSR corridor in Grundy County.

2.1.3.5 Livingston County

Existing Land Use:

Two existing railroads — the Union Pacific and the Norfolk Southern — that could potentially accommodate HSR service are located in Livingston County. Current Chicago - St. Louis Amtrak service operates on the Union Pacific.

Union Pacific. The Union Pacific extends for approximately 48 kilometers (30 miles) in Livingston County, passing through the communities of Dwight, Odell, Cayuga, Pontiac, and Ocoya. Both the Village of Dwight and the City of Pontiac serve as regional centers for the Grundy-Livingston County agricultural area. Outside of the urbanized areas, the railroad passes through agricultural areas where the highway network follows section lines and rail crossings are commonly spaced at 1.6-kilometer (one-mile) intervals. Rail crossings typically occur on section line roads to provide access to farmland and rural residences, and to maintain road network continuity over the tracks.

The Village of Dwight, located at the north side of the county, is bordered to the west by Interstate 55, and intersected by two railroads, Union Pacific and Norfolk Southern, and two state highways, Illinois Route 17 and Illinois Route 47. There are some historically significant buildings near the Union Pacific railroad in Dwight. These features provide some distinction to the character of the community.

Dwight has experienced growth to the west and north. The Dwight Correctional Center and the Dwight Country Club are located approximately three kilometers (two miles) west of the village near the Interstate 55 interchange on Illinois Route 17. An agricultural area north of Dwight, bounded by Illinois Route 47, Interstate 55 and the Norfolk Southern, is planned for industrial development. In addition to agribusiness, major employers in Dwight include the RR Donnelley & Sons Company, a printing company located within the developing area north of Dwight, and Coils, Inc., a manufacturer of electrical devices.

The City of Pontiac, located towards the center of the county, is an important regional trading center with a blend of agriculture, manufacturing and service industries. Heartland Community College and St. James Hospital are among the facilities which distinguish Pontiac from the smaller rural communities. Major employers include Caterpillar, Inc., the Pontiac Correctional Center, RR Donnelley & Sons, Inc., Interlake, Inc., and Johnson Press.

Throughout the Chicago - St. Louis HSR corridor, there are some communities with less than 25 households which have the identity of a name but are not incorporated. An example in Livingtston County is unincorporated Cayuga with a small residential area, a closed grain elevator, and one rail crossing. The Wolf Creek Golf Club and Golf Course, located east of and adjacent to the railroad in the Cayuga area, serves as a regional attraction. Old U.S. Route 66 and Main Street serve as the primary roadways through Cayuga.

Ocoya functions as an agricultural service stop, with its grain elevator and rail siding.

Norfolk Southern. The Norfolk Southern extends for approximately 15 kilometers (nine miles) in Livingston County in an east-west direction through the project area. The portion of the Norfolk Southern evaluated for HSR service is located between Reddick and the Union Pacific railroad in Dwight, passing through primarily agricultural areas.

The railroad passes through areas where the highway network follows section lines and rail crossings are commonly spaced at 1.6-kilometer (one-mile) intervals. Rail crossings typically occur on section line roads to provide access to farmland and rural residences, and to maintain road network continuity over the tracks.

Reddick, immediately south of the Norfolk Southern tracks, has one at-grade crossing at Illinois Route 17. A construction company and stone quarry transport crushed rock over this rail crossing.

Special Areas:

Union Pacific. There are several stone quarries within the southern portion of Livingston County. County Route (CR) 8, an east-west road just south of Ocoya, is a designated truck route with an 36,000 kilogram (80,000 pound) weight limit. It serves as the primary route to Vulcan Materials, Livingston Stone, Markgraf Materials and Valley View Industries. Trucks hauling materials to and from there use the CR 8 railroad crossing to access Old U.S. Route 66 west of the tracks.

2.1.3.6 McLean County

Existing Land Use:

In McLean County, the HSR corridor extends for approximately 69 kilometers (43 miles) through the center of the Town of Normal and the City of Bloomington, contiguous communities which together function as an urbanized regional center. The corridor also passes through unincorporated agricultural areas and rural communities, including Chenoa, Lexington, Towanda, Funks Grove, and McLean.

Chenoa, Lexington, and Towanda are located north of the Bloomington/Normal area. Single-family residential and commercial land uses, including those related to agriculture, are generally located within the HSR corridor in these communities. In each of these communities, there are three existing highway-railroad at-grade crossings.

The Bloomington/Normal area serves as a transportation hub, with a developed transportation system including three interstate highways (Interstate 39, Interstate 55 and Interstate 74) and the Union Pacific and Norfolk Southern railroads. The local road network has 10 highway-railroad at-grade crossings spaced every one to two blocks within the Town of Normal. In Bloomington at-grade crossings are less frequent, and most of the rail crossings are grade separated. There are three highway-railroad at-grade crossings in Bloomington.

Land uses in the Bloomington/Normal area reflect the area's economic strength in education, insurance, agribusiness and industry. The Illinois State University (ISU) campus is on the west side of the tracks in central Normal and includes university facilities and student housing within walking distance to the Normal Amtrak station. Other institutions of higher education in the Bloomington/Normal urban area include the Illinois Wesleyan University, Mennonite College of Nursing, and Heartland Community College.

There are a number of historically significant sites scattered throughout Bloomington/Normal. Most of these sites are located on the east side of the corridor within 20 blocks from the railroad.

The Long Range Transportation Plan for the Bloomington/Normal, Illinois, Urbanized Area identifies four growth areas outside the urbanized area and proposed roadway extensions and improvements to accommodate this growth. The two growth areas in proximity to the railroad are northeast of Normal and southwest of Bloomington. Both are experiencing residential subdivision development. The northeast growth area in Normal, situated north of Illinois Route 9 and east of Illinois Route 51, extends along both sides of the railroad. Northward extensions of Towanda Avenue and Beech Street are planned to serve the Tramore, Ironwood, and Pinehurst subdivisions, and the existing Ironwood Golf Course.

The Fox Creek Municipal Golf Course, Fox Creek Country Club Subdivision, Pepperidge Subdivision and the Palmer property, are the major Bloomington developments south of Illinois Route 9 and west of Illinois Route 51. New roads are being constructed along the southern edge of Bloomington to facilitate access to employment centers and shopping from the southwest residential areas. For example, employees living within the developing southwest quadrant will be able to access the State Farm Corporate South facility at the southern edge of Bloomington by traveling on Six Points Road. Six Points Road, a two-lane county highway, has become increasingly important in this area as it provides a direct east-west transportation link from residential subdivisions to the interstate highways, the State Farm Insurance offices, and the central areas of Bloomington/Normal. Roadway improvements and extensions are also planned for Beich Road, West Oakland Avenue, Martin Luther King Drive, and Wylie Drive to meet transportation needs within Bloomington's southwest quadrant.

Funks Grove and McLean are located south of Bloomington/Normal in McLean County. Funks Grove is an unincorporated community with one at-grade crossing. Land use in the Funks Grove area within the HSR corridor consists mainly of forested areas. However, there is some commercial land use near the railroad tracks in Funks Grove. The HSR corridor passes through the center of McLean. Land use is mixed near the railroad in this community. Two at-grade crossings are located along the corridor in McLean.

Special Areas:

The Funks Grove Pure Maple Sirup Company, located in Funks Grove Township has been in operation since 1891. Access to Old U.S. Route 66 is provided by a private grade crossing from this enterprise. This private crossing is used to transport sap. During the spring season, this crossing is actively used.

2.1.3.7 Logan County

Existing Land Use:

The HSR corridor extends for approximately 44 kilometers (27 miles) in Logan County and passes through several rural communities, including Atlanta, Lawndale, Lincoln, Broadwell, and Elkhart. In the unincorporated agricultural areas, there are isolated agricultural and industrial facilities adjacent to the railroad. These facilities are generally located near a rail crossing providing access to Old U.S. Route 66 and Interstate 55. The number of highway-railroad at-grade crossings in these communities ranges from one in Elkhart to nine in Lincoln. Land uses in Logan County are characteristic of those in predominantly agricultural areas.

The City of Lincoln serves as the regional center for Logan County. Two institutions of higher education are located in the Lincoln area — Lincoln College and Lincoln Christian College. Historically significant buildings are located one to two blocks from the tracks in Lincoln. The downtown streetscape is built at a pedestrian scale which encourages consumer and tourist activity.

Historic resources are also present in the smaller rural communities. The Village of Atlanta grain elevator and library are listed on the National Register of Historic Places.

Special Areas:

The City of Lincoln has received a downtown development grant for historic preservation. The City received approximately $800,000 in ISTEA funds to restore building facades on structures immediately surrounding the railroad in the downtown historic district.

The Lincoln and Logan Correctional Facilities are located approximately three kilometers (two miles) south of Lincoln on CR 1350. The Township Route (TR) 128 highway-railroad at-grade crossing is the only crossing used to access these facilities from the west. Railsplitter State Park is north of the correctional facilities and generates seasonal traffic on Business Route Interstate 55 and the TR 128 rail crossing.

2.1.3.8 Sangamon County

Existing Land Use:

The HSR corridor extends for approximately 55 kilometers (34 miles) in Sangamon County, passing through Springfield and the rural communities of Williamsville, Sherman, Chatham, Auburn, and Thayer. Outside of Springfield, land uses in Sangamon County are characteristic of those in predominantly agricultural areas. The number of highway-railroad at-grade crossings in the rural communities ranges from one in Sherman to seven in Auburn.

Land uses in Springfield, the state capital, are generally mixed around the railroad, with a high concentration of government buildings and businesses in the downtown district. The Springfield train station is also located in the downtown district. Grade crossings are located every one to two blocks within the urbanized area.

Springfield is the home of five higher level education facilities — SIU School of Medicine, University of Illinois at Springfield, Lincoln Land Community College, Springfield College in Illinois, and Robert Morris College.

Special Areas:

The railroad passes near several state historic sites in Springfield, including the Old State Capitol, the Lincoln-Herndon Law Offices, the Dana-Thomas House, and Lincoln's Home. The concentration of Lincoln sites, government institutions, and research and conference facilities generate high levels of tourist activity throughout Springfield.

2.1.3.9 Macoupin County

Existing Land Use:

The HSR corridor extends for approximately 66 kilometers (41 miles) in Macoupin County, passing through mostly agricultural areas, as well as rural communities, including Virden, Girard, Nilwood, Carlinville, Plainview, and Shipman. The number of highway-railroad at-grade crossings within these communities range from one in Nilwood to five in Carlinville.

As the county seat, Carlinville serves as a regional center for Macoupin County. The Carlinville Area Hospital, Blackburn College, and the Loveless Park Sports Complex are facilities which distinguish Carlinville as a regional center for medical, educational and recreational services. Several historically significant buildings are located within Carlinville's downtown.

Special Areas:

Four special areas within the HSR corridor are present in Macoupin County.

Beaver Dam State Park, a 300-hectare (737-acre) woodland area located 11 kilometers (seven miles) south of Carlinville, experiences high seasonal traffic.

Crown Coal Mine No. 2, located on CR 58 2.4 kilometers (1.5 miles) east of the tracks, generates truck traffic and rail activity.

The Burlington Northern Railroad crosses over the Union Pacific tracks in Girard, creating double track highway-railroad at-grade crossings through this community.

The Malham Orchard, approximately 4.0 kilometers (2.5 miles) south of Carlinville, is accessed by a private rail crossing. The private crossing is used by the public visiting the orchard store and by trucks transporting produce to markets.

2.1.3.10 Jersey County

Existing Land Use:

The HSR corridor extends for less than five kilometers (three miles) in unincorporated areas in the southeast corner of Jersey County. Land use is predominantly agricultural, but there is some single-family residential land use. A total of three highway-railroad at-grade crossings are located within the HSR corridor in Jersey County.

Special Areas:

No special land use areas were identified within the HSR corridor in Jersey County.

2.1.3.11 Madison County

Existing Land Use:

The HSR corridor extends for approximately 44 kilometers (27 miles) in Madison County, passing through urbanized, incorporated communities with heavy industrial uses. The Lewis and Clark Community College in Godfrey, the Alton Square Shopping Center in Alton, and the Explorer Pipeline Company in Hartford, each located adjacent to the railroad, represent the diversity of land uses within Madison County. Small agricultural fields remain active in the unincorporated areas.

The railroad right-of-way contains multiple tracks with several at-grade crossings. All highway-railroad crossings are grade separated through Alton, the largest community in the River Bend area with approximately 33,000 residents. The River Bend area, along the Mississippi River, is composed of 11 communities, five of which are along the high-speed rail corridor.

Traveling south from Alton, the adjacent land use becomes increasingly industrial, comprised of petroleum tank farms, refineries and rail yards located in East Alton, Wood River, and Hartford. Because these facilities are near or adjacent to the railroad, hazardous materials are routinely transported over the tracks to access SR 3, a major highway serving this area. The railroad also serves as a division or barrier between residential and industrial land uses in the East Alton-Wood River area. Small parcels of farmland, located between tank farms, occur in East Alton and Hartford. Larger farmland parcels are present farther south in the unincorporated area between Hartford and Granite City.

In the southerly portion of Madison County, the corridor parallels SR 3 into St. Clair County. The area adjacent to the railroad is vacant land surrounding transportation infrastructure.

Special Areas:

No special land use areas were identified within the HSR corridor in Madison County.

2.1.3.12 St. Clair County

Existing Land Use:

The proposed HSR corridor extends for approximately six kilometers (four miles) in St. Clair County, passing through the City of East St. Louis. As at the southern end of Madison County, the corridor parallels SR 3 into East St. Louis. The area adjacent to the railroad is vacant land surrounding transportation infrastructure. There is one highway-railroad at-grade crossing in the HSR corridor in St. Clair County.

Special Areas:

No special land use areas were identified within the HSR corridor in St. Clair County.

2.1.3.13 City of St. Louis

Existing Land Use:

The proposed HSR corridor extends for approximately three kilometers (two miles) in the City of St. Louis. The railroad is located just south of the St. Louis downtown area. There are no highway-railroad at-grade crossings along the railroad through this area.

Special Areas:

No special land use areas were identified within the HSR corridor in the City of St. Louis.

2.2 SOCIO-ECONOMIC AND COMMUNITY CHARACTERISTICS

2.2.1 Community Services and Facilities

Schools, medical centers, fire and police stations, and agricultural facilities serve the daily needs of residents along the high-speed rail corridor. Access to and from educational, medical and agricultural facilities 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 live close enough to walk to the local school or take a bus. Students residing on individual farmsteads outside the populated area 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 high-speed rail corridor are served by municipal police and fire departments. Unincorporated communities and rural areas are served by the county sheriff department and fire districts. In times of an 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 high-speed 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.

School bus, emergency vehicle and agricultural traffic routes were considered in the evaluation of highway-railroad at-grade crossings. As part of the data collection process, meetings were conducted with county

engineers and representatives from county and regional planning commissions to gather crossing-specific information. Land use and socio-economic information helped the team to identify the vehicle use characteristics at each at-grade crossing and document which crossings and routes have a significant role in the movement of students, emergency vehicles, and agricultural products and supplies. Following these meetings, city planners, school superintendents and county farm bureau managers were contacted to provide additional information regarding facility operations and transportation needs within their jurisdictions.

2.2.2 Demographics

2.2.2.1 Population and Population Distribution

Table 2.2-1 lists the 1992 populations of the counties within the proposed HSR corridor, the percentage change in population between 1980 and 1992, and the population density within each county. Table 2.2-2 provides a population breakdown for each county, listing the 1990 populations of communities located along the corridor.

Population concentrations are found within the Chicago and St. Louis metropolitan areas, including Cook, Will, Madison and St. Clair counties, and St. Louis City, Missouri. Both Cook County and St. Louis City have experienced population decreases between 1980-1992, 2.2 percent and 15.3 percent, respectively. However, the 15.7 percent population increase in Will County evidences a 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 a 1992 population density of 160 persons per square kilometer (427 persons per square mile).

Corridor counties with regional centers in the rural areas, including McLean, Sangamon and Kankakee counties, have relatively higher populations than rural counties with small communities. However, countywide population densities within counties with regional centers are still low, ranging between 40 to 80 persons per square kilometer (100 to 200 persons per square mile). Over the 12-year period between 1980 and 1992, population decreased 3.9 percent in Kankakee County, while increases of 3.0 and 12.0 percent occurred in Sangamon and McLean counties, respectively.

Three rural counties, Livingston, Logan and Macoupin, have experienced population decreases over the 12-year period, ranging from 3.3 to 4.1 percent, while the populations of Grundy and Jersey counties have increased.

2.2.2.2 Racial Composition

The racial composition of the corridor is predominantly white, as illustrated in Table 2.2-3. 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,

Table 2.2-1
COUNTY POPULATIONS AND HOUSEHOLDS

County	Land Area Sq. Km. (Sq. Mi.)		Total Population (1992)	Total Population (1980)	Percent Change (1980-1992)	Population Density Per Sq. Km. (Sq. Mi.)		Number of Households (1990)
State of Illinois	144,000	(55,593)	11,612,906	11,427,409	1.6	80	(206)	4,202,240
Cook	2,450	(946)	5,139,341	5,253,628	-2.2	2100	(5397)	1,879,488
Will	2,170	(837)	375,518	324,460	15.7	160	(427)	116,933
Kankakee	1,760	(678)	98,916	102,926	-3.9	55	(142)	34,623
Grundy	1,090	(420)	33,841	30,582	10.7	30	(77)	11,979
Livingston	2,700	(1044)	39,664	41,381	-4.1	15	(38)	13,737
McLean	3,070	(1184)	133,443	119,149	12.0	42	(109)	46,796
Logan	1,600	(618)	30,667	31,802	-3.6	19	(50)	11,033
Sangamon	2,250	(868)	181,380	176,070	3.0	80	(206)	72,146
Macoupin	2,240	(864)	47,766	49,384	-3.3	21	(55)	18,176
Jersey	960	(369)	20,994	20,538	2.2	22	(56)	7,344
Madison	1,880	(725)	253,260	247,661	2.3	133	(344)	94,857
St. Clair	1,720	(664)	263,124	267,531	-1.6	153	(396)	95,333
St. Louis City	160	(62)	383,733	452,801	-15.3	2470	(6398)	380,110

Source: County and City Data Book, 1994. U.S. Department of Commerce, Bureau of the Census, August 1994.

Table 2.2-2
COUNTY AND COMMUNITY POPULATIONS

County Community	Total Population (1990)
State of Illinois	**11,430,602**
Cook	**5,105,067**
Forest View	743
Summit	9,971
Willow Springs	4,509
Lemont	7,348
Will	**357,313**
Romeoville	14,074
Lockport	9,401
Joliet	76,836
Elwood	951
Wilmington	4,743
Braidwood	3,584
Godley	322
Monee	1,044
Peotone	2,947
Grundy	**32,337**
Braceville	587
Gardner	1,237
Livingston	**39,301**
Dwight	4,230
Odell	1,030
Cayuga	<225
Pontiac	11,428
Ocoya	<225

County Community	Total Population (1990)
McLean	**129,180**
Chenoa	1,732
Lexington	1,809
Towanda	856
Bloomington	51,972
Normal	40,023
Shirley	<225
Funks Grove	<225
McLean	797
Logan	**30,798**
Atlanta	1,616
Lawndale	<225
Lincoln	15,418
Broadwell	<225
Elkhart	475
Sangamon	**178,386**
Williamsville	1,140
Sherman	2,080
Springfield	105,227
Chatham	6,074
Auburn	3,724
Thayer	730
Macoupin	**47,679**
Virden	3,635
Girard	2,164
Nilwood	238
Carlinville	5,416

County Community	Total Population (1990)
Macoupin Station	<225
Plainview	<225
Shipman	624
Miles Station	<225
Brighton	2,270
Jersey	**20,539**
Madison	**249,238**
Godfrey	5,436
Alton	32,905
East Alton	7,063
Wood River	11,490
Hartford	1,676
Granite City	32,862
St. Clair	**262,852**
East St. Louis	40,944
Kankakee	**96,255**
Manteno	3,488
Bourbonnais	13,934
Bradley	10,792
Kankakee	27,575
Greenwich	<225
Lehigh	<225
Goodrich	<225
Union Hill	<225
Reddick	<225
Blair	<225
St. Louis City	**396,685**

Source: County and City Data Book, 1994. U.S. Department of Commerce, Bureau of the Census, August 1994.
Compiled by Planning Resources Inc.

Table 2.2-3
POPULATION BY RACE/HISPANIC ORIGIN (1990)

County	Race				
	White	Black	Am. Indian, Eskimo or Aleut	Asian or Pacific Islander	Hispanic (any race)
State of Illinois	8,952,978	1,694,273	21,836	285,311	904,446
Cook	3,204,947	1,317,147	10,289	188,565	694,194
Will	303,420	38,361	692	4,774	19,973
Kankakee	80,194	14,399	150	644	1,946
Grundy	31,864	21	45	113	748
Livingston	36,551	2,115	62	131	826
McLean	121,057	5,563	203	1,624	1,671
Logan	29,223	1,291	37	143	348
Sangamon	162,013	14,364	290	1,377	1,274
Macoupin	47,077	379	94	88	184
Jersey	20,346	96	43	32	103
Madison	230,217	16,136	683	1,420	2,713
St. Clair	187,866	71,275	585	2,007	3,861
St. Louis City	202,085	188,408	950	3,733	5,124

Source: County and City Data Book, 1994. U.S. Department of Commerce, Bureau of the Census, August 1994.
Compiled by Planning Resources Inc.

Sangamon and Kankakee counties, with their diversified regional centers, also have relatively higher minority populations than the predominantly rural counties with small communities.

2.2.3 Economies

The proposed high-speed rail corridor between Chicago and St. Louis passes through 12 counties whose economies vary dramatically. Although much of the corridor runs through agricultural land, other sections pass through areas of intense industrial development. Some counties along the route have economies that are dominated by one industry while others have a diversified economic base.

2.2.3.1 Employment

Employment in the 12 counties along the high-speed rail corridor equaled 58 percent of total Illinois non-farm employment (excluding government workers) in 1995. But 83.4 percent of the employment in the corridor was located in Cook County. Between 1990 and 1995 employment in the corridor outside Cook county grew 12.2 percent compared to 5.6 percent for the State as a whole. Growth was strongest in Will and Kankakee Counties — 26.4 percent and 21.4 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 now closer to downtown Chicago than other undeveloped areas north and west of the city. New highway developments and the potential for the development of a new airport at Peotone are helping to draw businesses into this portion of the high-speed rail corridor. Some of this growth is occurring at the expense of Cook County. Employment in Cook County declined only 0.5 percent between 1990 and 1995, but this decline was equal to 45.2 percent of the combined increase in jobs in Will and Kankakee counties. Throughout the first half of the 1990s, employment also declined in Logan County in the central portion of the corridor.

Detailed employment trends for each county, by industry, are shown in Table 2.2-4. In the northern section of the corridor, Cook County has the most diversified employment base, but it must compete 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 Kankakee Counties are older industrial areas that are expanding their manufacturing employment while continuing to diversify and increase the share of employment in services and other sectors. Grundy is one of the counties expected to be drawn into the orbit of economic activity radiating out from Chicago, but it is still beyond the focus of activity and experienced only a 1.7 percent increase in employment between 1990 and 1995. Firms in the transportation, 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 its employment in manufacturing: 38.2 percent, compared to a statewide average of about 20.7 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 to Livingston, McClean County has only 14.3 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. Bloomington is also the location of Illinois State University.

In Sangamon County, manufacturing employment accounts for only 6.1 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 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 segment 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 115 persons, less than four percent of the non-farm workforce, were employed in manufacturing in Jersey County in 1995. Macoupin had about 13.1 percent of its workers in manufacturing. It also had a high percentage, 5.7 percent (compared to 0.3 percent statewide) in mining and quarrying, down from 7 percent in 1990. Approximately 27.9 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 37.3 percent of the county's employment.

Employment change in the corridor is shown in Table 2.2-5. Outside of Cook County and St. Louis City all sectors of the economy within the HSR corridor showed growth between 1990 and 1995.

Table 2.2-4
EMPLOYMENT BY INDUSTRY (1990 TO 1995)

COVERED EMPLOYMENT 1990

	Cook	Grundy	Jersey	Kankakee	Livingston	Logan	McLean	Macoupin	Madison	St. Clair	Sangamon	Will	St. Louis City	**Illinois**
Farm, Fisheries, Forestry, Mining and Quarrying	7,657	66	44	583	137	407	730	672	534	1,522	548	1,295	421	45,934
Construction	89,320	358	69	1,580	435	202	1,560	497	4,082	2,875	2,886	6,436	7,769	201,574
Manufacturing	470,616	1,901	114	5,683	3,793	2,204	7,803	1,424	21,968	7,076	4,343	17,651	48,063	985,411
Transportation, Communication & Public Utilities	161,843	2,914	165	2,091	327	298	3,043	538	4,486	3,958	4,350	5,533	23,234	284,350
Wholesale Trade	194,179	390	176	2,032	742	470	2,592	969	3,412	2,735	4,294	3,989	17,855	355,843
Retail Trade	407,746	2,619	1,142	6,544	1,925	2,200	12,142	2,136	15,737	18,221	17,553	17,249	32,737	886,222
Finance, Insurance, and Real Estate	232,791	759	234	1,806	443	385	11,111	662	4,307	3,184	7,970	2,855	22,819	369,357
Services	699,488	1,681	833	8,578	2,267	2,706	13,214	1,906	17,318	18,614	25,544	19,903	78,777	1,264,618
TOTAL	2,263,640	10,688	2,777	28,897	10,069	8,872	52,195	8,804	71,844	58,185	67,488	74,911	231,675	4,393,309

COVERED EMPLOYMENT 1995

	Cook	Grundy	Jersey	Kankakee	Livingston	Logan	McLean	Macoupin	Madison	St. Clair	Sangamon	Will	St. Louis City	**Illinois**
Farm, Fisheries, Forestry, Mining and Quarrying	7,825	87	55	1,140	237	374	761	600	794	1,180	677	1,742	355	45,388
Construction	72,262	471	140	2,469	486	152	2,278	542	4,357	3,020	3,591	9,001	6,357	194,289
Manufacturing	462,211	2,184	115	7,460	4,260	1,808	8,460	1,206	21,935	7,564	4,383	18,832	42,308	961,891
Transportation, Communication & Public Utilities	160,477	2,522	128	1,817	376	425	2,662	491	4,782	4,452	5,067	6,678	21,690	299,514
Wholesale Trade	168,505	395	207	2,342	599	488	2,938	804	3,328	3,303	4,470	5,517	15,048	350,732
Retail Trade	398,718	2,696	1,108	8,020	2,230	2,391	13,490	2,371	16,899	19,544	17,419	21,344	30,197	939,973
Finance, Insurance, and Real Estate	222,039	443	135	1,581	492	559	12,920	475	4,100	2,826	7,729	3,977	21,660	371,791
Services	759,870	2,075	1,155	10,263	2,465	2,138	15,843	2,689	22,357	24,957	28,734	27,589	84,737	1,474,827
TOTAL	2,251,907	10,873	3,043	35,092	11,145	8,335	59,352	9,178	78,552	66,846	72,070	94,680	222,352	4,638,405
Change 1990-1995	(11,733)	185	266	6,195	1,076	(537)	7,157	374	6,708	8,661	4,582	19,769	(9,323)	245,096
Percent Change 1990-1995	-0.5%	1.7%	9.6%	21.4%	10.7%	-6.1%	13.7%	4.2%	9.3%	14.9%	6.8%	26.4%	-4.0%	5.6%

Source: Illinois Department of Employment Security, "Illinois at Work: Employment by County, 1990-1995."

Table 2.2-5
EMPLOYMENT CHANGE BY SECTOR (1990 TO 1995)

Industry Sector	Percent Change (Total Corridor)	Percent Change (without Cook Co.)
Farm, Fisheries, Forestry, Mining and Quarrying	9.0	17.0
Construction	-10.5	26.3
Manufacturing	-0.8	5.7
Transportation, Communication & Public Utilities	0.2	6.1
Wholesale Trade	-10.7	11.9
Retail Trade	0.2	10.3
Finance, Insurance, and Real Estate	-3.5	4.5
Services	10.8	24.6

Source: Illinois Department of Employment Security, "Illinois at Work: Employment by County, 1990-1995."

2.2.3.2 Income

Table 2.2-6 shows 1989 median household and per capita incomes for the corridor counties. Generally, the northern counties have the highest incomes in each category. Cook County has the highest per capita income at $15,520, but Will County has a higher median household income. This difference results from the larger average size of households in Will County. The exception to this generalization is Kankakee County where employment is still concentrated in lower wage service and manufacturing jobs. In every corridor county except Cook, per capita income is exceeded by the statewide median.

2.2.4 Environmental Justice

Data on racial and income composition by county is presented in Sections 2.2.2.2 and 2.2.3.2. Additional, more detailed information regarding minority and low-income populations in the HSR corridor was compiled from Bureau of Census 1990 data. Table 2.2-7 provides the percentage of the population in each community along the HSR corridor comprised of minority and low-income persons. In this table, Chicago and St. Louis population data is classified by zip code. Low-income population represents the number of people with incomes below poverty level. Minority populations in communities within the corridor ranged from 0 to just below 100 percent. Low-income percentages range from 0 to 62 percent.

2.3 TRANSPORTATION FACILITIES AND SERVICES

The Chicago - St. Louis corridor is currently served by four modes of transportation: highway, air, rail, and bus. The total existing (1998) annual person trips estimated within the corridor on these four

Table 2.2-6
INCOMES IN HIGH-SPEED RAIL CORRIDOR COUNTIES

Counties in Corridor	Median Household Income	Per Capita Income
Cook	$32,673	$15,520
Will	$41,195	$14,928
Kankakee	$28,284	$11,866
Grundy	$35,728	$14,404
Livingston	$29,848	$11,521
McLean	$31,366	$13,778
Logan	$27,528	$11,192
Sangamon	$30,350	$14,800
Macoupin	$23,913	$11,218
Jersey	$27,126	$10,947
Madison	$29,861	$13,142
St. Clair	$26,813	$11,800
St. Louis City	$19,458	$10,798
Illinois	**$32,252**	**$15,201**

Source: U.S. Department of Commerce, Bureau of Census, 1990.

modes is 35.2 million. Table 2.3-1 presents a summary of corridor travel by major market pairs of travel and mode. Additionally, commuter and freight train operations occur on portions of the alternative alignments evaluated. Commuter rail traffic is not included in the 35.2 million person trip estimate.

This section provides a brief overview of the existing transportation facilities and services in the Chicago - St. Louis HSR corridor.

2.3.1 Existing Intercity Mass Transportation Service

Intercity mass transportation service between major towns and cities located in the HSR corridor is available via train, bus, and aircraft. Air travel is the most predominant of these three modes. Of the total 1998 person trips between Chicago and St. Louis, air travel accounts for 3.2 percent of the trips, while rail and bus service accounted for 1.1 percent combined.

Table 2.2-7
MINORITY AND LOW-INCOME POPULATION

City/Township	White	Total Minorities	Percent Minorities	Total Poverty	Percent Poverty
Illinois	8,957,923	2,472,679	21.63	1,326,731	11.61
Illinois Central/Union Pacific Alignment (Chicago to St. Louis)					
Chicago (60606)	49	7	12.50	0	0.00
Chicago (60607)	6,538	7,210	52.44	4,804	34.94
Chicago (60608)	29,315	54,980	65.22	26,928	31.94
Chicago (60623)	20,212	91,955	81.98	33,604	29.96
Chicago (60632)	48,989	13,080	21.07	6,410	10.33
Chicago (60638)	47,337	5,948	11.16	4,047	7.60
Forest View	724	12	1.63	47	6.39
Summit	6,702	3,269	32.79	1,392	13.96
Bedford Park	565	12	2.08	22	3.81
Justice	9,161	1,976	17.74	544	4.88
Willow Springs	4,370	139	3.08	115	2.55
Lemont	7,248	100	1.36	188	2.56
Lockport	9,272	137	1.46	443	4.71
Joliet	53,308	23,528	30.62	9,419	12.26
Elwood	948	0	0.00	71	7.49
Wilmington	4,684	59	1.24	313	6.60
Braidwood	3,488	103	2.87	392	10.92
Godley	323	0	0.00	51	15.79
Braceville	589	6	1.01	79	13.28
Gardner	1,228	6	0.49	64	5.19
Dwight	4,128	102	2.41	221	5.22
Odell	1,013	17	1.65	66	6.41
Pontiac	9,521	1,907	16.69	1,088	9.52
Chenoa	1,724	8	0.46	161	9.30
Lexington	1,791	18	1.00	88	4.86
Towanda	849	7	0.82	37	4.32
Normal	37,058	2,965	7.41	6,803	17.00
Bloomington	47,243	4,729	9.10	4,969	9.56
Shirley	323	6	1.82	0	0.00
Funks Grove	297	0	0.00	25	8.42
McLean	801	2	0.25	22	2.74
Atlanta	1,612	4	0.25	127	7.86
Lawndale	177	0	0.00	22	12.43
Lincoln	14,911	507	3.29	1,866	12.10
Broadwell	122	0	0.00	4	3.28
Elkhart	489	3	0.61	33	6.71
Williamsville	1,136	4	0.35	43	3.77
Sherman	2,061	19	0.91	69	3.32
Springfield	90,143	15,084	14.33	13,065	12.42
Chatham	6,007	36	0.60	73	1.21
Auburn	3,707	23	0.62	356	9.54
Thayer	733	2	0.27	96	13.06
Virden	3,606	18	0.50	628	17.33
Girard	2,130	34	1.57	398	18.39
Nilwood	247	2	0.80	37	14.86
Carlinville	5,286	130	2.40	732	13.52
Shipman	599	2	0.33	90	14.98
Brighton	2,271	2	0.09	232	10.21
Godfrey	5,071	365	6.71	225	4.14
Alton	24,912	7,993	24.29	6,370	19.36
East Alton	7,039	24	0.34	1,193	16.89
Wood River	11,332	158	1.38	1,406	12.24
Hartford	1,646	30	1.79	165	9.84

Table 2.2-7
MINORITY AND LOW-INCOME POPULATION

		Total	Percent		Percent
Granite City	32,328	534	1.62	4,275	13.01
Madison	3,565	1,058	22.89	1,470	31.80
East St. Louis	566	40,378	98.62	17,785	43.44
St. Louis (63102)	624	109	14.87	65	8.87
St. Louis (63103)	2,445	4,050	62.36	1,830	28.18
Norfolk Southern Alignment (Chicago to Dwight)					
Chicago (60605)	4,797	3,047	38.84	1,287	16.41
Chicago (60616)	12,415	33,321	72.86	13,719	30.00
Chicago (60653)	193	39,896	99.52	24,327	60.68
Chicago (60615)	11,128	33,002	74.78	10,818	24.51
Chicago (60637)	8,285	51,437	86.13	21,425	35.87
Chicago (60619)	609	74,129	99.19	12,928	17.30
Chicago (60628)	3,113	91,103	96.70	17,741	18.83
Chicago (60627)	8,462	16,399	65.96	8,721	35.08
Riverdale	8,016	5,621	41.22	1,902	13.95
Harvey	4,459	25,308	85.02	7,486	25.15
East Hazel Crest	1,141	429	27.32	63	4.01
Homewood	17,674	1,604	8.32	259	1.34
Flossmoor	7,295	1,356	15.67	232	2.68
Olympia Fields	3,256	992	23.35	38	0.89
Matteson	5,871	5,507	48.40	425	3.74
Richton Park	7,839	2,684	25.51	452	4.30
University Park	1,190	5,014	80.82	556	8.96
Monee	1,042	2	0.19	102	9.77
Peotone	2,890	5	0.17	43	1.49
Manteno	3,463	25	0.72	171	4.90
Bourbonnais	13,188	746	5.35	696	4.99
Bradley	10,657	135	1.25	1,019	9.44
Kankakee	17,119	10,456	37.92	6,132	22.24
Union Hill	37	0	0.00	0	0.00
Rock Island District Alignment (Chicago to Joliet)					
Chicago (60605)	4,797	3,047	38.84	1,287	16.41
Chicago (60616)	12,415	33,321	72.86	13,719	30.00
Chicago (60609)	26,854	62,989	70.11	38,860	43.25
Chicago (60621)	275	56,273	99.51	24,148	42.70
Chicago (60620)	3,936	88,019	95.72	15,305	16.64
Chicago (60643)	15,451	48,555	75.86	6,682	10.44
Blue Island	16,029	5,174	24.40	1,785	8.42
Robbins	71	7,427	99.05	2,152	28.70
Midlothian	13,691	681	4.74	591	4.11
Oak Forest	25,480	723	2.76	785	3.00
Tinley Park	35,689	1,461	3.93	881	2.37
Mokena	6,097	31	0.51	247	4.03
New Lenox	9,550	77	0.80	437	4.54
Joliet	53,308	23,528	30.62	9,419	12.26

Source: U.S. Department of Commerce, Bureau of Census, 1990.

Table 2.3-1
CHICAGO - ST. LOUIS HIGH-SPEED RAIL CORRIDOR
ANNUAL PERSON TRIPS (1998)

		Rail		Air		Bus		Auto		
Market Pair		**Trips**	**Percent**	**Trips**	**Percent**	**Trips**	**Percent**	**Trips**	**Percent**	**Total Trips**
Chicago	Joliet	3,281	0.0	0	0.0	10,736	0.1	14,542,632	99.9	14,556,649
Chicago	Bloomington	39,457	3.9	6,095	0.6	4,335	0.4	954,504	95.0	1,004,391
Chicago	Springfield	65,101	8.0	41,900	5.1	17,727	2.2	689,269	84.7	813,997
Chicago	Alton	10,614	4.7	26,704	11.8	1,745	0.8	187,078	82.7	226,142
Chicago	St. Louis	74,686	3.6	877,137	42.1	41,107	2.0	1,092,493	52.4	2,085,423
Chicago	Others	12,854	4.6	2,325	0.8	0	0.0	265,347	94.6	280,527
Joliet	Bloomington	6,055	1.3	961	0.2	3,478	0.7	458,985	97.8	469,479
Joliet	Springfield	8,833	3.1	6,683	2.4	3,755	1.3	261,728	93.1	280,999
Joliet	Alton	2,063	4.6	4,318	9.5	365	0.8	38,569	85.1	45,316
Joliet	St. Louis	8,292	1.0	140,722	17.3	7,922	1.0	654,433	80.7	811,369
Joliet	Others	1,917	0.5	370	0.1	0	0.0	371,215	99.4	373,501
Bloomington	Springfield	5,926	1.0	0	0.0	1,192	0.2	572,319	98.8	579,437
Bloomington	Alton	1,561	3.9	16	0.0	111	0.3	38,569	95.8	40,257
Bloomington	St. Louis	5,487	1.9	663	0.2	3,095	1.1	278,354	96.8	287,598
Bloomington	Others	3,552	0.4	0	0.0	0	0.0	797,247	99.6	800,800
Springfield	Alton	4,591	2.2	28	0.0	219	0.1	204,496	97.7	209,335
Springfield	St. Louis	7,715	0.9	999	0.1	2,320	0.3	895,915	98.8	906,948
Springfield	Others	5,840	1.3	0	0.0	0	0.0	431,626	98.7	437,465
Alton	St. Louis	1,444	0.0	0	0.0	0	0.0	10,782,987	100.0	10,784,431
Alton	Others	347	0.9	0	0.0	0	0.0	39,586	99.1	39,933
St. Louis	Others	1,223	1.1	52	0.0	0	0.0	108,977	98.8	110,252
Others	Others	131	1.5	0	0.0	0	0.0	8,836	98.5	8,967
TOTAL		270,969	0.8	1,108,975	3.2	98,108	0.3	33,675,165	95.8	35,153,218

Source: IDOT; Wilbur Smith Associates, Chicago - St. Louis High Speed Rail Corridor Study Ridership Forecast Technical Report, June 1994; updated for 1998 by De Leuw, Cather & Company, August 1999.

2.3.1.1 Passenger Rail Service

Two different Amtrak routes operate through portions of the HSR corridor. These routes operate between Chicago and St. Louis and Chicago and Carbondale, Illinois.

The Chicago - St. Louis service operates on Amtrak and IC track between Chicago and Joliet; on UP track between Joliet and Granite City; and on Terminal Railroad Association (TRRA) track between Granite City and St. Louis. Except for the portion of this route south of Granite City, the current Amtrak route is evaluated as a HSR alternative alignment. South of Granite City, an alternative route is under construction that will be used by Amtrak as well as new high-speed rail service, if implemented. Service between Chicago and St. Louis consists of three trips in each direction per day with scheduled end-to-end operating times between 5.5 and 5.75 hours and service to 11 stations. The 11 stations between Chicago and St. Louis are: Chicago Union Station, Summit, Joliet, Dwight, Pontiac, Bloomington/Normal, Lincoln, Springfield, Carlinville, Alton, and St. Louis Amtrak Terminal. Annual ridership on this route is estimated at 271,000 (IDOT, 1999). From St. Louis, Amtrak service continues to Kansas City, Dallas, Texas, and Los Angeles, California.

The Chicago - Carbondale service operates on Amtrak and the IC mainline between Chicago Union Station and Kankakee in the HSR corridor. South of Kankakee, this service is outside the HSR corridor. Service on this route consists of two trains daily in each direction. One train in each direction operates from Chicago to New Orleans via Carbondale. In addition to stops in Chicago and Kankakee, this service also stops in Homewood within the HSR corridor. Scheduled travel times between Chicago and Kankakee range from one hour and 10 minutes to one hour and 43 minutes.

Amtrak service does not operate on Norfolk Southern or Rock Island District tracks in the HSR project area.

The Amtrak fare (1999) for a round trip between Chicago and St. Louis is approximately $68.00; the fare between Chicago and Springfield is $60.00.

2.3.1.2 Passenger Air Service

Air travel within the HSR corridor is available from airports in Chicago (O'Hare, Midway, Meigs), Bloomington, Springfield, and St. Louis (Lambert Field). Currently, no passenger carriers operate out of MidAmerica Airport in St. Clair County. There is substantially more air service than bus or rail service available in the corridor. On an average weekday, there are approximately 150 one-way plane trips with origins and destinations within the corridor. Approximately 53 percent of these trips are between Chicago and St. Louis. Other service is less comprehensive. Seventy-nine percent of the air person trips in the corridor are between Chicago and St. Louis, which accounts for 42 percent of all intercity travel between the two cities. Table 2.3-2 lists the average number of daily one-way plane trips between origin-destination pairs and average scheduled flight time in the corridor. The 1998 annual person trips in the HSR corridor using air travel was estimated at 1.1 million.

Airline fares fluctuate quite often. Round trip airfare between Chicago and St. Louis can range from $60.00 to $325.00. Round trip airfare between Chicago and Springfield can reach $425.00. Most

Table 2.3-2

EXISTING INTERCITY DAILY VEHICLE TRIPS AND TRAVEL TIMES (MINUTES) ALONG THE HIGH-SPEED RAIL CORRIDOR

		Rail		Air		Bus		Auto	
		Vehicle	Travel	Vehicle	Travel	Vehicle	Travel	Vehicle	Travel
Market Pair		Trips	Time	Trips	Time	Trips	Time	Trips	Time
Chicago	Joliet	6	58			6	60	25,090	50
Chicago	Bloomington	6	140	10	50	11	170	1,647	150
Chicago	Springfield	6	208	22	55	11	290	1,189	220
Chicago	Alton	6	280					323	310
Chicago	St. Louis	6	340	76	75	20	400	1,885	320
Joliet	Bloomington	6	82			6	120	792	110
Joliet	Springfield	6	150			4	210	452	180
Joliet	Alton	6	222					67	270
Joliet	St. Louis	6	282			5	290	1,129	280
Bloomington	Springfield	6	68			6	90	987	70
Bloomington	Alton	6	140					67	170
Bloomington	St. Louis	6	200	19	48	9	190	480	180
Springfield	Alton	6	72					353	100
Springfield	St. Louis	6	132	20	35	11	110	1,546	110
Alton	St. Louis	6	60					18,604	20

Source: OAG Pocket Flight Guide, August 1999.
Amtrak, October 1999.
Greyhound, August 1999.
Wilbur Smith Associates, Chicago - St. Louis High Speed Rail Corridor Study Ridership Forecast Technical Report, June 1994; updated for 1998 by De Leuw, Cather & Company
Compiled by De Leuw, Cather & Company.

Notes:
1. Does not include trips to "other" markets in the corridor (Kankakee, Dwight, Pontiac, Lincoln, and Carlinville).
2. Auto trips derived from 1998 person trips.
3. Air, rail, and bus travel times are representative schedule times.

commonly round trip airfares are approximately $150.00 between Chicago and St. Louis and approximately $200.00 between Chicago and Springfield.

2.3.1.3 Passenger Bus Service

Greyhound Lines, Inc. and other smaller carriers operate bus service between Chicago and St. Louis. A total of 28 daily routes operate in the corridor, consisting of eight daily trips from Chicago to St. Louis and 12 daily trips from St. Louis to Chicago (Greyhound Lines, Inc., 1999). Of the eight buses to St. Louis, two stop in both Bloomington and Springfield; two stop in Bloomington; two stop in Kankakee and Springfield; and two travel through Kankakee, stopping in neither Bloomington nor Springfield. Of the 12 northbound buses to Chicago, three stop in Springfield and Bloomington; two stop in Springfield and Kankakee, one stops in Springfield; one stops in Bloomington; and five stop in neither Springfield nor Bloomington. Of these five, two travel through Kankakee, while the other three travel outside of the corridor. The other eight routes stop in either Chicago or St. Louis with additional stops in Bloomington, Springfield, or Kankakee. The additional communities in the corridor with bus service are Joliet, Dwight, and Pontiac, as well as Illinois State University. Scheduled travel times for the southbound end-to-end service range from five hours and five minutes to eight hours and 25 minutes. Northbound service scheduled travel times range from five hours and 50 minutes to over 11 hours. The annual (1998) person trips using bus service for corridor trips was estimated at 98,000. Bus fares (1999) are typically around $63.00 for round trips between Chicago and Springfield and around $51.00 for round trips between Chicago and St. Louis.

2.3.2 Existing Intercity Automobile Travel

Of the estimated 35.2 million existing (1998) annual person trips in the HSR corridor, private automobile trips account for 95.8 percent, or 33.7 million. However, travel between Chicago and Joliet and between St. Louis and Alton accounts for 75 percent of these automobile trips. In comparison, travel between Chicago and St. Louis accounts for only three percent of all automobile trips in the corridor and 52 percent of trips between the two destinations. Interstate 55 accommodates most of the intercity automobile travel in the corridor.

Table 2.3-2 shows travel times and number of vehicle trips per day for the travel markets in the corridor.

2.3.3 Additional Rail Operations

In addition to Amtrak service, freight and commuter rail traffic currently operates on much of the existing track evaluated for high-speed rail service. Freight traffic operates on at least some portion of each of the railroads analyzed. Commuter rail service operates on the IC Joliet Line and the Rock Island District between downtown Chicago and the south suburbs and on Metra tracks near the Chicago Randolph Street Station that will be used as part of the Norfolk Southern alternative alignment. The Metra Electric District service parallels the IC route Amtrak uses to Champaign and Carbondale that will be used as part of the Norfolk Southern alternative alignment.

Table 2.3-3 lists the number of existing intercity passenger, freight, and commuter trains operating on the alternative alignments in the HSR corridor.

Table 2.3-3
EXISTING RAIL TRAFFIC ON RAILROADS IN THE HIGH-SPEED RAIL CORRIDOR

RAILROAD (Location)	Number of Trains Per Day		
	Amtrak	**Freight**	**Metra**
IC JOLIET LINE			
Chicago to Joliet	6	8	6
UNION PACIFIC (and TRRA)			
Joliet to St. Louis	6	8	0
METRA			
Randolph St. Station to 31st Street	0	0	181
ILLINOIS CENTRAL MAINLINE			
31st Street to Kankakee	4	12	0
NORFOLK SOUTHERN			
Kankakee to Dwight	0	5	0
ROCK ISLAND DISTRICT			
LaSalle St. Station to Gresham	0	0	68
Gresham to Blue Island	0	0	24
Blue Island to New Lenox	0	3	46
New Lenox to Joliet	0	3	45

Source: Amtrak, October 1999.
Metra and Northern Indiana Commuter Transportation District (NICTD), August 1999.
De Leuw, Cather & Company, August 1999.

2.3.3.1 Freight Traffic

Daily freight train volumes range from 0 to 12 trains per day on the tracks analyzed for high-speed rail service. Freight traffic on the IC mainline is higher than any of the other railroads evaluated, with 12 trains operating daily. The IC/UP alternative alignment accommodates the second highest number of freight trains in the corridor, with eight freight trains daily. Three freight trains operate on the Rock Island District tracks south of Blue Island, and five freight trains operate on the Norfolk Southern segment.

2.3.3.2 Commuter Rail Service

Four commuter rail lines — Heritage Corridor, Rock Island District, Metra Electric, and South Shore — operate within the HSR corridor. Round trip fares (1999) on Metra service range from $3.50 to $9.30.

The Metra Heritage Corridor service consists of three weekday peak direction trains in both the morning and evening between Chicago Union Station and Joliet on the IC Joliet Line that is part of the IC/UP alternative alignment. The Metra Rock Island District provides substantially more service between Chicago LaSalle Street Station and Joliet with up to 68 trains operating per day in the northerly section of the alignment.

The Norfolk Southern alternative alignment will operate on Metra tracks north of 31st Street in Chicago to gain access to the Randolph Street Station. Trains on the Metra Electric Line between Chicago and University Park and the South Shore Line between Chicago and South Bend, Indiana use these Metra tracks into and out of the Randolph Street Station. Average weekday commuter train traffic on these tracks is 181 trains.

2.3.3.3 Clearance Requirements/Issues

Adequate clearance must be provided between adjacent railroad tracks and between railroad tracks and structures to ensure safe train passage. Current Illinois Commerce Commission (ICC) standards are provided in Table 2.3-4. These requirements are increased in areas where track superelevation or curvature dictate greater clearance requirements. No violations of the ICC standards are known to exist along the proposed high-speed rail alternative alignments evaluated.

Table 2.3-4
ILLINOIS COMMERCE COMMISSION TRACK CLEARANCE REQUIREMENTS

Type of Measurement	Required Clearance – meters (feet)
Vertical	6.6 m (21.5') from the top of the rail*
Horizontal	2.4 m (8.0') from the track centerline*
Minimum Distance Between Mainline Tracks	4.1 m (13.5') between adjacent tracks
Minimum Distance Between Mainline Tracks and Sidings	4.6 m (15.0') between adjacent tracks

Source: Illinois Commerce Commission.

* Distance must be increased to account for superelevation and curvature.

2.3.4 Existing Highway-Railroad At-Grade Crossings

A total of 450 highway-railroad at-grade crossings were evaluated along the HSR alternative alignments. Table 2.3-5 lists the number and type of existing warning devices at the at-grade crossings in the corridor by county and alignment. Twenty percent of the at-grade crossings are private; 113 have no warning devices.

2.4 AIR QUALITY

Transportation sources produce the following pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), and hydrocarbons (also known as volatile organic compounds or VOCs). Nitrogen oxides and VOCs are precursors to ozone. Particulate matter (PM) is emitted primarily by stationary fuel-burning

Table 2.3-5

EXISTING WARNING DEVICES AT HIGHWAY-RAILROAD AT-GRADE CROSSINGS IN THE HIGH-SPEED RAIL CORRIDOR

County	Alignment	Railroad	EXISTING WARNING DEVICE													
			Gates	Gates w/Cant. Flashing Lights	Gates w/ Median	Locked Gate	Cantilever Flashing Lights	Flashing Lights	Crossbucks	Bell and Wig-Wag	Stop Sign and Bell	Stop Sign	Bell	Ped. Bell and Flashers	None	Total
Cook	IC/UP	Illinois Central	7	1	0	0	1	1	0	0	1	2	0	0	5	18
Cook	Norfolk Southern	ICML	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Cook	Rock Island District	Rock Island District	14	7	0	0	0	1	2	0	0	0	0	1	23	48
Will	IC/UP	IC/UP	16	3	0	0	0	12	5	1	0	1	0	0	3	41
Will	Norfolk Southern	ICML	9	0	0	0	0	0	1	0	0	0	0	0	2	12
Will	Rock Island District	RID/UP	13	1	0	1	0	11	6	1	0	1	0	0	5	39
Kankakee	Norfolk Southern	ICML/NS	12	1	0	0	1	11	7	0	0	0	0	0	10	42
Grundy	IC/UP, RID	Union Pacific	0	0	0	0	1	6	7	0	0	0	0	0	2	16
Livingston	IC/UP, RID	Union Pacific	16	0	0	0	0	10	5	0	0	1	0	0	9	41
Livingston	Norfolk Southern	NS/Union Pacific	16	0	0	0	0	12	9	0	0	1	0	0	11	49
McLean	All	Union Pacific	17	1	0	0	1	14	0	0	0	1	0	0	10	44
Logan	All	Union Pacific	13	4	0	0	0	4	0	0	0	0	0	0	5	26
Sangamon	All	Union Pacific	17	10	1	1	5	8	4	0	0	0	1	0	17	64
Macoupin	All	Union Pacific	13	1	0	0	0	6	10	0	0	1	0	0	13	44
Jersey	All	Union Pacific	0	0	0	0	0	2	0	0	0	0	0	0	1	3
Madison	All	Union Pacific	10	5	0	0	0	1	2	0	0	0	0	0	6	24
St. Clair	All	UP/TRRA	1	0	0	0	0	0	0	0	0	0	0	0	0	1
St. Louis	All	TRRA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals for Alternative Alignments																
IC/UP Alignment			110	25	1	1	8	64	33	1	1	6	1	0	71	322
Norfolk Southern Alignment			108	22	1	1	7	58	34	0	0	3	1	0	75	310
Rock Island District Alignment			114	29	1	2	7	63	36	1	0	4	1	1	91	350

Source: De Leuw, Cather & Company, December 1996.

sources — power plants and industrial sources — and to a smaller extent by transportation sources. Therefore, the description of existing conditions also includes a discussion of the PM concentrations. PM has health implications because of its potential to penetrate deep into the human respiratory system.

2.4.1 Regulatory Setting

This section describes the applicable regulations that govern air quality in the project corridor at both the Federal and state levels and the procedures that will be needed to demonstrate compliance with these regulations and related criteria.

National Ambient Air Quality Standards (40 CFR part 50):

Under the authority of the Clean Air Act and the 1990 Clean Air Act Amendments (CAAA) [42 U.S. Code (USC) 7401 *et seq*.], a set of primary and secondary Ambient Air Quality standards for six criteria pollutants was established. These standards are intended to protect the public health and welfare. The primary standards are shown in Table 2.4-1, including the new ozone and particulate matter 2.5 microns or smaller in diameter ($PM_{2.5}$) standards promulgated in 1997. Except for sulfur dioxide, the secondary standards are the same as the primary standards for all pollutants. Illinois's and Missouri's Ambient Air Quality Standards are identical to the Federal standards shown in Table 2.4-1.

When levels of pollutants do not exceed the annual average standards and do not exceed the short-term (1-, 3-, 8-, and 24-hour) standards more than once per year, an area is considered in attainment of the National Ambient Air Quality Standards (NAAQS).

Clean Air Act Amendments - Title I:

Title I of the CAAA addresses nonattainment issues related to ozone, CO, and PM_{10}. Nonattainment areas are progressively ranked according to the severity and type of their air pollution problems. Each category of nonattainment has a label such as severe or moderate and a date for meeting the federal air quality standards.

Clean Air Act Amendments - Title II:

Title II of the CAAA addresses mobile sources and stipulates more stringent emission standards for cars, trucks, and buses. This title also regulates fuel quality (such as gasoline volatility and diesel sulfur content); requires reformulated gasoline in the worst ozone areas and oxygenated fuels in the worst CO areas; and requires clean-fueled vehicles for certain fleets and other pilot programs.

Clean Air Act Conformity:

The 1990 CAAA require Federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). The SIP is a plan that provides for implementation, maintenance, and enforcement of the NAAQS, and includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards.

Table 2.4-1
SUMMARY OF NATIONAL AND STATE (ILLINOIS AND MISSOURI)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Primary Standard
Particulate Matter		
10 micrometers (PM_{10})	Annual Arithmetic Mean	50 ug/m^3
	24-hour	150 ug/m^3
2.5 micrometers ($PM_{2.5}$)**	Annual Arithmetic Mean	15 ug/m^3
	24-hour	65 ug/m^3
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	0.03 ppm (80 ug/m^3)
	24-hour	0.14 ppm (365 ug/m^3)
	3-hour	None
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)
	1-hour	35.0 ppm (40 mg/m^3)
Ozone (O_3)	1-hour/day*	0.12 ppm (235 ug/m^3)
	8-hour/day**	0.08 ppm
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.053 ppm (100 ug/m^3)
Lead (Pb)	Quarterly Arithmetic Mean	1.5 ug/m^3

Source: USEPA/IEPA.

Note: All standards with averaging times of 24 hours or less are not to have more than one actual or expected exceedance per year.

*The 1-hour ozone standard pertains only to the ozone nonattainment counties in the Chicago Metropolitan Area and the St. Louis Area.

**The final rules for ozone and particulate matter were issued in the July 18, 1997 Federal Register. The formal designation of nonattainment for the 8-hour ozone standard will take place in 2000, while the designation for attainment/nonattainment for the $PM_{2.5}$ standard is expected to take place in 2002.

The Federal agency responsible for the action is required to determine if its action conforms to thepplicable SIP. The U.S. Environmental Protection Agency (USEPA) has developed two sets of conformity regulations

- Transportation projects developed or approved under the Federal Aid Highway Program or Federal Transit Act are governed by the "transportation conformity" regulation [40 Code of Federal Regulation (CFR) Part 93, Subpart A]; and

- Other projects, which include the Federal action planned for the Chicago-St. Louis High-Speed Rail project, are governed by the "general conformity" regulations. The regulations for *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* were published in the *Federal Register* on November 30, 1993. The general conformity rule (40 CFR Part 93, Subpart B) became effective January 31, 1994. In Illinois, general conformity criteria and procedures are set forth in 35 Illinois Administrative Code 255. In Missouri, these criteria and procedures are set forth

in 10 CSR 10-6.300. The total emissions for this project (discussed in Section 5) have been prepared in accordance with the Illinois and Missouri general conformity regulations.

The conformity regulations apply to Federal actions occurring in air basins designated as nonattainment for criteria pollutants or in attainment areas subject to maintenance plans (maintenance areas). Federal actions occurring in air basins that are in attainment with criteria pollutants are not subject to the conformity rule.

Metropolitan Planning Organizations (MPOs) in the Chicago and St. Louis nonattainment areas are required to analyze the emission impacts of highway and transit projects within their respective areas. To ensure that all surface transportation improvements are accounted for in the regional emissions analysis, the MPOs will be including the HSR project and its impacts on the transportation system even though this project is not considered a highway/transit project as defined under Section 7201(b) of TEA-21. The Chicago Area Transportation Study will include the HSR project in the regional analysis for the Regional Transportation Plan Update which is to be adopted by December 2000. The East-West Gateway Coordinating Council will be including the HSR project in their regional analysis for the FY 2001-03 Transportation Improvement Program.

For nonattainment and maintenance areas, the Illinois Environmental Protection Agency's (IEPA) and the State of Missouri's general conformity rules establish maximum annual emissions rates for pollutants, including for both ozone precursors — VOC and NO_x — on the presumption that reductions in these pollutants will contribute to reductions in ozone formation. According to these states' general conformity regulations, a conformity determination is required 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 the threshold rates for these areas. For the nonattainment and maintenance areas in the Chicago - St. Louis HSR corridor, the following rates apply:

	(Tons Per Year)	
Area	**VOC**	**NO_x**
Chicago Nonattainment Area	25	N/A
Jersey County Maintenance Area	100	100
St. Louis Nonattainment Area (in Illinois)	100	100
St. Louis Nonattainment Area (in Missouri)	100	100

The Clean Air Act Sections 182 (b) and (f) provide waivers for NO_x reduction requirements in those nonattainment areas where the USEPA determines that NO_x reductions would not provide net ozone air quality benefits. Such is the case in the Lake Michigan area including northeastern Illinois and adjoining nonattainment areas in Indiana, Wisconsin and Michigan. The IEPA petitioned the USEPA to issue a NO_x waiver for the Chicago nonattainment area; subsequently, the USEPA published a proposed approval on March 6, 1995. Final issuance of the NO_x waiver under Section 182 (f), which affects General Conformity, was published in the January 22, 1996 *Federal Register*. Thus, due to the issuance of the NO_x waiver, no threshold rate for NO_x is applicable for the Chicago nonattainment area, and the conformity analysis for this project focuses exclusively on VOC emissions in this area.

Outside of the ozone nonattainment and maintenance areas, a conformity determination under 40 CFR Part 93 ("Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act") is not required.

2.4.2 Affected Environment

Potential air quality impacts of the proposed HSR project include: 1) changes in rail-related emissions due to an increase in trains operating each day and a change in equipment, 2) changes in the overall emissions from transportation sources, and 3) changes in local or microscale ambient air quality concentrations. The latter impact includes changes from locomotive passbys; potential changes at certain rail crossings that will accommodate additional traffic that will be diverted from nearby highway-railroad crossing closures; increases in vehicular delay at highway-railroad crossings near railroad stations due to an increase in the number of trains stopping to load and unload passengers; and potential changes around railroad stations due to increased traffic resulting from increased ridership. In this section, existing ambient air quality conditions and emissions in the corridor and at specific locations are identified.

2.4.2.1 Ambient Air Quality in the High-Speed Rail Corridor

Nonattainment Areas:

The CAAA of 1990 established nonattainment areas based on data from 1987 to 1989. In Illinois, the entire State was declared in attainment for the pollutants lead, nitrogen dioxide, and carbon monoxide. A small geographical area in the Peoria region was designated nonattainment for sulfur dioxide. However, the area is now considered in attainment for this pollutant.

Three ozone nonattainment areas — Chicago area, St. Louis area, and Jersey County — were identified in the state. The Chicago nonattainment area is classified as severe and includes the Illinois counties of Cook, DuPage, Kane, Lake, McHenry, and Will; Oswego Township in Kendall County; and Aux Sable and Goose Lake Townships in Grundy County. The St. Louis nonattainment area is classified as moderate and includes the Madison, Monroe, and St. Clair Counties in Illinois and St. Charles, St. Louis, Jefferson, and Franklin Counties in Missouri. Jersey County, which had originally been designated marginal, was re-designated attainment in early 1995 and is subject to a maintenance plan. Figure 2.4-1 identifies the ozone nonattainment areas in the HSR corridor. According to the CAAA, ozone standards must be met by 2007 in the Chicago area and by 1996 in the St. Louis area. However, the St. Louis area is still classified as a moderate ozone nonattainment area. The HSR project is located in portions of all three of the originally designated ozone nonattainment areas.

Lyons Township and Southeast Chicago in Cook County are classified as moderate nonattainment areas for PM_{10}.

Monitoring Stations:

The IEPA and Missouri Department of Natural Resources maintain networks of monitoring stations which sample ambient air concentrations and provide data to assess the impact of control strategies.

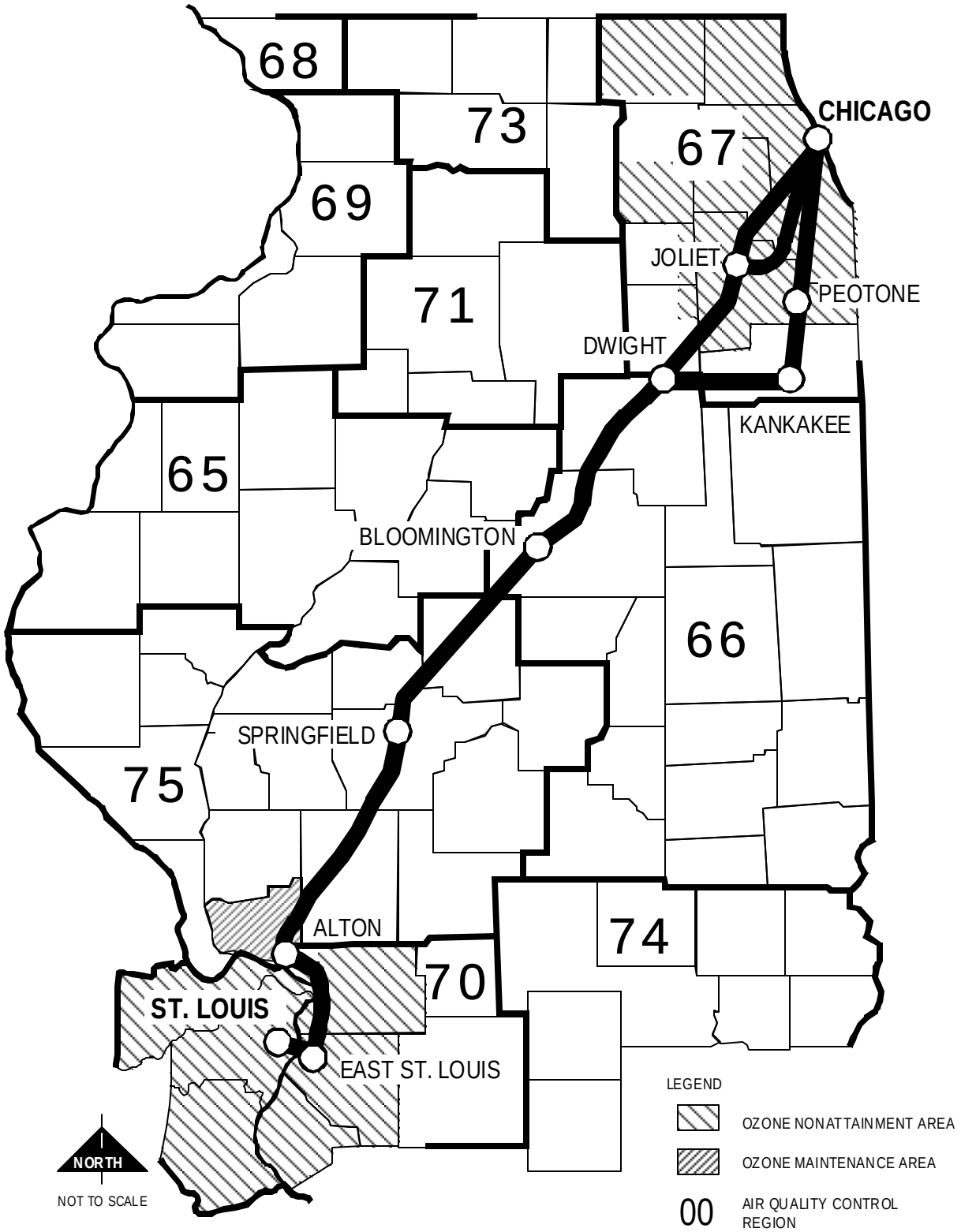


FIGURE 2.4-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
OZONE NONATTAINMENT AREAS

The pollutants of concern for this project are those pollutants that are emitted from transportation sources. These include ozone, CO, NO_x, and PM. However, monitoring stations in Illinois also sample ambient air concentrations of sulfur dioxide and lead. The monitoring networks have been designed to measure ambient air quality levels in the various Air Quality Control Regions (AQCR). Historically, each AQCR was classified on the basis of known air pollutant concentrations or, where these were not known, estimated air quality. The AQCRs in the Chicago - St. Louis HSR corridor are identified on Figure 2.4-1.

In this section, 1998 monitoring station information for the transportation-related pollutants is presented and compared to the air quality standards presented in Table 2.4-1.

Ozone. In Illinois during 1998, hourly ozone concentrations above the 0.12 parts per million (ppm) standard were recorded at three sites. Each of the sites recorded only one day with ozone concentrations above 0.12 ppm. In the HSR corridor, there was one exceedance day recorded in the Chicago area, 12 exceedance days recorded in the St. Louis area (one in Illinois and 11 in Missouri), and one exceedance day in Jersey County. The highest one-hour concentration recorded was 0.140 ppm in East St. Louis. The highest value recorded in the Chicago area was 0.133 ppm in Evanston.

Additionally, for the new eight-hour standard, five sites in Illinois (three in the Chicago area, one in the St. Louis area, and one in Jersey County) had fourth highest values above 0.08 ppm in 1998. The highest fourth high value was 0.091 ppm in Jerseyville. In Missouri, in the St. Louis area, eight sites violated the eight-hour standard for the three-year period from 1996 through 1998.

Carbon Monoxide. There were no exceedances of either the one-hour primary standard of 35.0 ppm or the eight-hour primary standard of 9.0 ppm in 1998. The highest one-hour average was 10.2 ppm, recorded in Springfield. The highest eight-hour average was 6.5 ppm, recorded in Peoria. The Peoria site is outside of the HSR project area.

Particulate Matter. For PM_{10}, no sites exceeded the primary annual standard of 50 ug/m^3. The highest annual average recorded was 46 ug/m^3 in Granite City. One site (Oglesby) recorded an exceedance of the 24-hour standard of 150 ug/m^3; this site is outside of the HSR project area. The highest 24-hour average recorded at the Oglesby site was 168 ug/m^3.

Nitrogen Dioxide. There were no violations of the annual primary standard of 0.053 ppm recorded in Illinois during 1998. The highest annual average recorded was 0.032 ppm in Chicago.

Pollutant Standards Index:

The Pollutant Standards Index (PSI) is used to report regional (sector) ambient air quality to the public. The PSI converts ambient air pollution concentration to an index number corresponding to a description of air quality as good, moderate, unhealthful, very unhealthful, and hazardous. The PSI is based on the short term NAAQS for criteria air pollutants. A short term exceedance of the NAAQS corresponds to a PSI of 100. A PSI of less than 50 describes good air quality. A PSI between 50 and 100 corresponds to moderate air quality. A PSI of 200 represents the boundary between unhealthful and very unhealthful air quality.

PSIs are computed for 10 sectors in Illinois. The HSR corridor is located in four of these sectors. Data for 1998 for these four sectors is listed in Table 2.4-2.

Table 2.4-2
POLLUTANT STANDARDS INDEX SUMMARIES BY SECTOR

	Percent of Days		
Sector	**Good**	**Moderate**	**Unhealthful**
Chicago - Chicago	86	14	0
Chicago - South and West	84	16	0
Joliet/Will County	94	6	0
Metro-East (St. Louis)	64	34	2

Source: IEPA, October 1999.

2.4.2.2 Inventory of Existing Intercity Passenger Travel

Emissions inventories are quantities of pollutants emitted over a given time period, which provide information about contributions from various sources. They are estimated by multiplying emissions factors (e.g., from a single locomotive trip from Chicago to St. Louis) by a source activity (number of trips). The inventories provided in this section were developed to represent existing (2000) annual intercity passenger travel between Chicago and St. Louis. The sources taken into account include passenger railroad locomotives, commercial aircraft, buses, and private automobiles. Locomotive and aircraft emissions were determined based on the procedures and data in USEPA's Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources, hereinafter referred to as the EPA manual. The methodology for determining bus and private automobile emissions generally follow the guidelines of the EPA manual as well.

For each mode of travel, a brief description of how the emissions inventory was developed is provided below.

Passenger Rail:

Fuel consumption for the existing diesel-powered Amtrak locomotive, the F40, was estimated for a Chicago – St. Louis round trip through RAILS, a computer software program used to simulate existing and future railroad operations for this project. Annual fuel consumption was developed by multiplying fuel consumption for a round trip by three (for round trips per day) and by 365 (for days per year). Annual emissions were then determined by multiplying the annual fuel consumption by the F40 emission rates found in the EPA manual.

Commercial Aircraft:

The Official Airline Guide (OAG) was used to determine the number of flights serving passenger travel in the corridor per week. This included flights to and from the three Chicago area airports and to and from the airports in Bloomington, Springfield, and St. Louis. The OAG also lists the type of aircraft used for each flight. This information was used with data in the EPA manual to develop takeoff and landing emission rates by aircraft type for flights in the Chicago – St. Louis corridor. The emission rates were multiplied by the number of flights by aircraft type, multiplied by 52 (for weeks per year), and summed to estimate annual emissions.

Bus:

The Greyhound bus schedule for service between Chicago and St. Louis was used to determine the number of daily trips operating in the HSR project area. Annual bus vehicle miles traveled (VMT) were then calculated by multiplying trip distance by the number of trips and multiplied by 365 (for days per year). Emission rates from MOBILE5A were then multiplied by the annual VMT to get annual emissions from bus travel.

Private Automobile:

Annual automobile VMT was developed based on person trip estimates for the Chicago – St. Louis HSR corridor presented in Table 2.3-1, updated for the year 2000. Annual VMT was then multiplied by MOBILE5A emission rates to determine annual emissions from automobiles. MOBILE5A inputs used for this analysis were provided by the IEPA.

Table 2.4-3 presents the existing (2000) annual emissions for VOC, CO, and NO_x by source estimated for intercity passenger travel in Chicago - St. Louis HSR corridor. The results of the emissions analysis indicate that automobile travel accounts for over 90 percent of the CO and NO_x emissions from intercity transportation sources in the HSR corridor. For VOCs, automobile emissions account for approximately 80 percent of the intercity transportation source emissions in the corridor. For all three pollutants evaluated, rail passenger service accounts for less than five percent of the intercity passenger travel total.

2.4.2.3 Existing Ambient Concentrations at Selected Sites

This section provides the existing or ambient conditions used in the dispersion modeling analysis. Ambient concentrations analysis is a microscale assessment for a particular small-scale area. Two different types of evaluation were considered to determine existing ambient conditions for this project. The first is a microscale CO concentration assessment that was conducted for sensitive receptors in the vicinity of at-grade crossings. The second is an assessment of the impact of locomotive passbys.

Existing Ambient Carbon Monoxide Concentrations:

Since carbon monoxide is a site-specific pollutant, with its major concentrations generally found immediately adjacent to roadways, it is usually of concern on a local or microscale basis. Therefore, the study of air quality impacts as a result of project-generated traffic is typically evaluated through a microscale analysis of traffic-related CO levels. In contrast, NO_x and hydrocarbons (HC) are not site-specific but of a regional concern, and therefore, no microscale analysis of these pollutants was conducted.

Table 2.4-3
ESTIMATED EXISTING (2000) EMISSIONS RESULTING FROM INTERCITY PASSENGER TRAVEL IN THE HIGH-SPEED RAIL CORRIDOR
(tons per year)

Pollutant	Mode of Travel	Annual Emissions	Percent
Volatile Organic Compounds (VOC)	Rail	8	0.3
	Air	473	19.7
	Bus	1	0.1
	Auto	1,919	79.9
	Total	**2,401**	**100.0**
Carbon Monoxide (CO)	Rail	22	0.1
	Air	783	4.0
	Bus	3	0.0
	Auto	18,668	95.9
	Total	**19,476**	**100.0**
Nitrogen Oxides (NO_x)	Rail	246	4.1
	Air	348	5.8
	Bus	7	0.1
	Auto	5,443	90.0
	Total	**6,044**	**100.0**

Source: De Leuw, Cather & Company, February 2000.

Microscale CO concentrations are estimated through the use of computerized mathematical models since data on street level CO concentrations is not available for most projects. Using the models, worst case CO levels were calculated for the peak one-hour and eight-hour time periods, corresponding to the averaging periods of the federal and state ambient CO standards.

The microscale dispersion analysis for this project evaluated local CO levels at receptor sites located along the roadways that are expected to experience the greatest change in traffic volumes and in the vicinity of the passenger railroad stations where the greatest increase in vehicular delay is expected.

Microscale CO analyses were performed for the closest receptor (worst-case location) at four highway-railroad at-grade crossings in the Chicago - St. Louis HSR corridor: Laraway Road (MP 40.36), south of Joliet; Carpenter Street (MP 184.68) in Springfield; Walnut Street (MP 194.40) in Chatham; and 20th Street (MP 275.00) in Granite City. These locations were chosen because they are the highest volume at-grade crossings that will have more than 100 vehicles per day diverted to them if an adjacent crossing were closed under the HSR alternative. Based on existing traffic levels, it is anticipated that approximately 200 to 1200 vehicles per day will be diverted to each of these crossings.

Microscale analyses were also performed at the Bloomington and Springfield passenger railroad stations. These are the only two full service (all trains stop) stations in the HSR project area where adjacent highway-railroad crossings are closed while trains are stopped to load and unload passengers. The analyses focused on the impacts of vehicular delay at the closed crossings.

Figures 2.4-2A through 2.4-2C identify the locations where the microscale analyses were conducted.

In the non-station areas, the one-hour analyses were conducted assuming that one passenger and one or two freight trains would pass the crossings during the peak hour and that an average delay of three minutes would occur to allow a freight train to clear the crossing. For the station analyses, it was assumed that one passenger train arrives during the one-hour analysis period and that a delay of five minutes and 40 seconds would occur for the train to clear the crossing.

Maximum existing one-hour CO concentrations were estimated to range from 4.4 to 7.3 ppm. These equate to estimated eight-hour concentrations that range from 2.5 to 4.6 ppm. The estimated concentrations are below the NAAQS one-hour and eight-hour standards of 35.0 and 9.0 ppm. A more detailed discussion of the microscale CO analyses conducted for this project is provided in Section 5.4, Air Quality.

As part of the analysis to estimate existing CO concentrations, estimated 2000 traffic data and worst-case meteorological data were used.

Existing Air Quality Effect of Locomotive Passbys:

The purpose of this type of assessment is to demonstrate the effect of existing diesel locomotive passbys on ambient CO and NO_x air quality. Results from locomotive passby assessments on other railroad projects in the U.S., particularly the Northeast Corridor (NEC) Improvement Project, generally indicated that locomotive passbys only minimally increase background concentration levels and do not exceed NAAQS standards. For example, peak CO concentrations at sites evaluated for the NEC Improvement Project did not exceed 0.03 ppm. This was converted to a one-hour concentration below 0.01 ppm, which is nominal compared to the 35.0 ppm one-hour NAAQS standard (USDOT, 1994). The assessment for the NEC evaluated trains pulled by an F40 locomotive, the same type of locomotive used by Amtrak in the Chicago - St. Louis corridor. Based on this information, the air quality effects of locomotive passbys were not assessed as part of this project.

2.5 NOISE AND VIBRATION

Existing noise levels in the HSR project area attributable to intercity passenger, commuter, and freight rail traffic were estimated for this project. Vibration levels in the project area were also estimated. The interaction of train wheels on the tracks is the primary source of vibration.

2.5.1 Regulatory Setting

There are no relevant state regulations concerning noise and vibration directly applicable to high-speed rail. However, draft Federal Railroad Administration (FRA) noise and vibration impact assessment methods and the following Federal Transit Administration (FTA) guidelines have been applied in this Draft Environmental Impact Statement (DEIS). The regulations listed below also include thresholds for increased traffic and noise from construction.

Noise impact criteria for transit projects are included in Urban Mass Transit Administration Circular C 5620.1 issued by the FTA (formerly the Urban Mass Transit Administration). These criteria are based

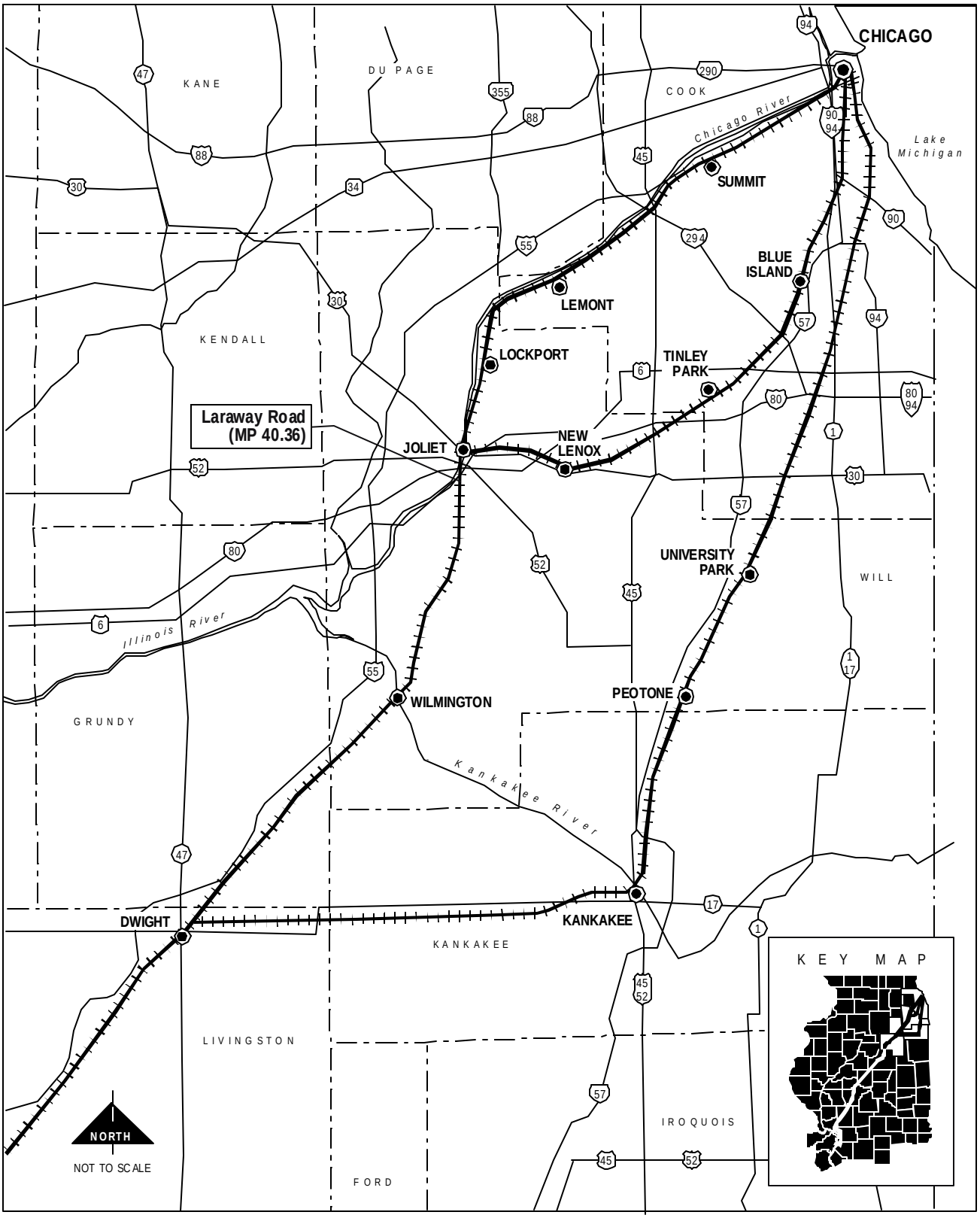


FIGURE 2.4-2A
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
MICROSCALE CARBON MONOXIDE ANALYSIS LOCATIONS
(Chicago to Pontiac)

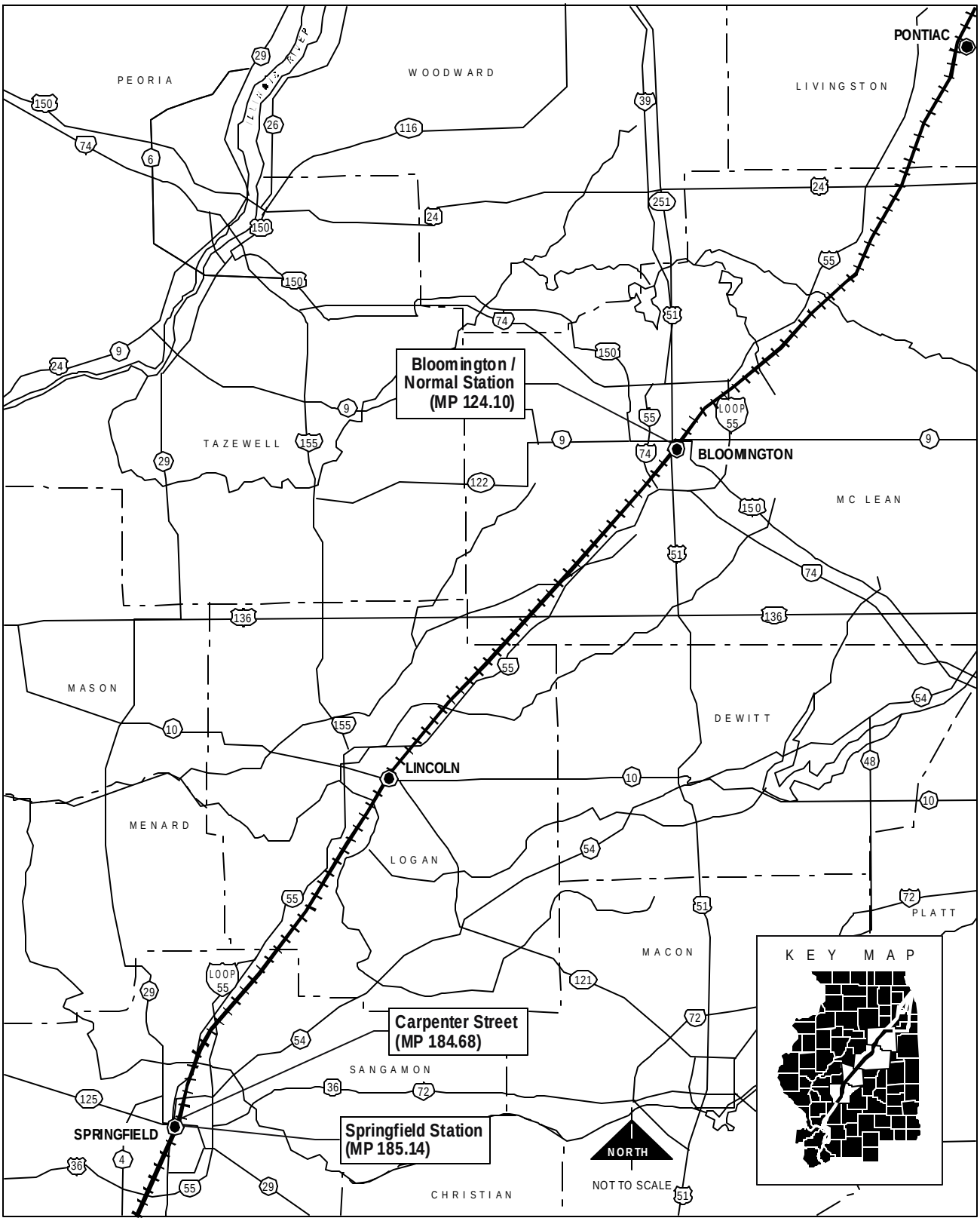


FIGURE 2.4-2B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
MICROSCALE CARBON MONOXIDE ANALYSIS LOCATIONS
(Pontiac to Springfield)

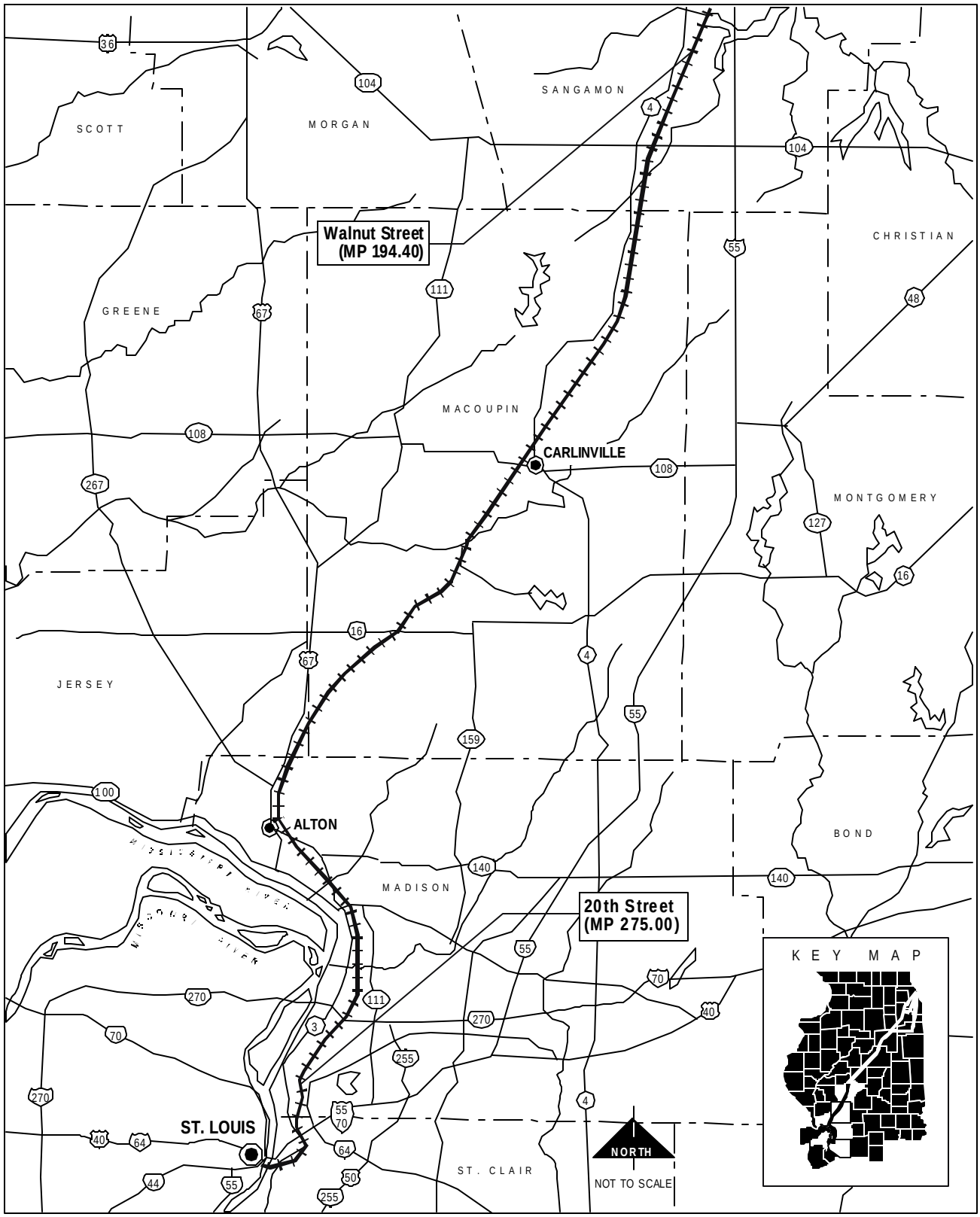


FIGURE 2.4-2C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
MICROSCALE CARBON MONOXIDE ANALYSIS LOCATIONS
(Springfield to St. Louis)

on noise increases in terms of either L_{eq} (equivalent sound level) or L_{dn} (day-night sound level). The criteria consider noise increases of three dBA or less to be "generally not significant," noise increases of four or five dBA to be "possibly significant," and noise increases of more than five dBA to be "generally significant."

The FRA and the FTA have developed guidance manuals, High Speed Ground Transportation Noise and Vibration Impact Assessment and Transit Noise and Vibration Impact Assessment, that include criteria for noise and vibration impact evaluation. These criteria are described in Section 5.5. For noise, the criteria set limits for noise increases related to the project based on the existing ambient noise level in terms of L_{eq} or L_{dn}. These criteria reflect an equivalent increase in noise annoyance depending on the existing noise, allowing less of an increase at locations where existing noise levels are higher. The FRA and FTA vibration criteria include impact thresholds based on land use and event frequency, in terms of the root mean square (rms) ground vibration velocity level (VdB, in dB relative to 1 micro-inch per second). For this project, the general assessment procedures described in the FRA and FTA manuals were used to develop noise and vibration estimates.

2.5.2 Affected Environment

The existing noise and vibration environment in the Chicago - St. Louis HSR project area was evaluated for the railroad train operations. Secondary sources of noise along the corridor include motor vehicle traffic on nearby roadways, aircraft overflights in some areas, and general community activities. Noise impacts from secondary sources for this project are expected to be minor and were not estimated. Other than train operations, there are no significant sources of ground-borne vibration in the project area.

The major sources of existing train noise in the project area are: (1) the locomotive engines; (2) the rolling interaction of the train wheels on the track rails; and (3) the locomotive horns that are sounded at highway-railroad at-grade crossings. The major source of existing ground-borne vibration from trains is the rolling interaction of the rail vehicle wheels on the rails. The provision of continuous welded rail (CWR) reduces noise and vibration levels. Through approximately 95 percent of the project area, continuous welded rail is present. However, even with CWR, there is increased noise and vibration from wheel/rail impacts where there are jointed rails. These locations are primarily where there are special track configurations such as switches and crossovers.

The predominant noise and vibration-sensitive land use in the HSR project area is residential. Additional sensitive receptors include schools, churches, and other institutional buildings.

2.5.2.1 Measures of Noise and Vibration

Noise Descriptors:

The most commonly used measure of noise is the A-weighted sound level, expressed in decibels (dBA). The A-weighted sound level is a single-number measure of sound intensity with weighted frequency characteristics that correspond to human subjective response to noise. It is widely accepted by acousticians as a proper unit for describing environmental noise.

Because environmental noise fluctuates from moment to moment, it is common practice to condense all information into a single number, called the "equivalent" or "energy-average" sound level (L_{eq}). Because many surveys show that the L_{eq} properly predicts annoyance, this descriptor is commonly used for noise impact

assessment. L_{eq} can be thought of as the steady sound level that represents the same sound energy as the varying sound levels over a specific time period. Commonly used equivalent noise descriptors are the $L_{eq}(h)$ measured over a one-hour period, and the $L_{eq}(24)$, measured over a 24-hour period. For this project, the $L_{eq}(h)$ was used when evaluating noise at non-residential sensitive receptors.

A widely accepted measure of cumulative noise exposure in residential areas is the Day-Night Sound Level, abbreviated as L_{dn}. The L_{dn} is the A-weighted equivalent sound level for a 24-hour period with an additional 10-decibel weighting imposed on noise that occurs during the nighttime hours (between 10:00 PM and 7:00 AM). The L_{dn} was used in this project to evaluate noise levels at residential receptors.

Vibration Descriptors:

Vibration is an oscillatory motion of an object about some equilibrium position which can be described in terms of displacement, velocity, or acceleration. The response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration. Because vibration velocity amplitude within the low frequency range is of most concern for environmental vibration (approximately 5 to 100 Hz), vibration velocity is used in this analysis to describe ground-borne vibration from train operations.

The descriptor used in this analysis for the assessment of ground-borne vibration is the rms vibration velocity level, VdB, expressed in decibels relative to one micro-inch per second. The rms amplitude is defined as the average of the squared amplitude of the signal and is typically evaluated over a one-second period of time.

Vibration impact criteria are based on the effects of a single train passby. Vibration levels as a result of passenger train passbys are typically higher than those associated with freight trains because passenger trains can operate at higher speeds in the project area. For this analysis, the vibration levels associated with passenger trains were evaluated.

2.5.2.2 Existing Noise and Vibration Estimates

Existing noise and vibration estimates were calculated using the methods described in the FTA Transit Noise and Vibration Impact Assessment manual for all existing rail operations in the HSR project area. For high-speed rail operations (as described in Section 5.5), the methods outlined in the FRA High Speed Ground Transportation Noise and Vibration manual were used to estimate noise and vibration levels. Information regarding train speed, train volume, time of operation, and distance from the track are all used to estimate noise and vibration levels.

All sensitive receptors located within 75 meters (250 feet) of the track centerline were analyzed in the HSR project area. A total of 3529 residential receptors and 71 non-residential receptors (office buildings, churches, schools, etc.) were identified. The existing estimated noise and vibration levels are summarized by county in Table 2.5-1.

Noise Estimates:

Existing noise level estimates for residential receptors analyzed ranged from 52 (in Cook County) to 74 dBA (in Sangamon County). At the non-residential receptors analyzed, noise levels ranged from 51 (in Cook County) to 64 (in Cook County) dBA. The highest existing noise levels are estimated in Chatham, where residential receptors are located as close as 8 meters (25 feet) from the centerline of the track.

Vibration Estimates:

Train vibration estimates for the receptors located in the HSR project area were typically between 65 and 75 VdB. The overall range of existing vibration levels varied from 53 (in Cook County) to 81 VdB. The highest existing vibration levels are also estimated in Chatham. This is the only location where the ground-borne vibration impact level for residential receptors of 80 VdB is exceeded.

2.6 WATER RESOURCES

2.6.1 Surface Water

Numerous rivers, streams, lakes, ponds, canals, and wetlands occur in the HSR project area. Discussion of surface water in this section focuses on characteristics of rivers and streams that could be affected by the proposed project. Information detailing the characteristics of wetland areas located in the project area is in Section 2.8.

Flow in streams is affected by the season and weather conditions, especially the amount and frequency of rainfall. The season of highest stream flow generally occurs in late winter or early spring corresponding with snowmelt, while lowest flows occur in late summer and autumn (Beaumont, 1975). Most of the streams, especially the major streams, have had much of their riparian or streamside vegetation cover altered from forested vegetation with banks stabilized to agriculture/grass and urbanized land (see Sections 2.8 and 2.9 for descriptions of wetland and upland vegetation communities).

2.6.1.1 Drainage Basins

The project area intersects five major drainage basins, comprised of several sub-basins (Table 2.6-1) (IEPA, 1994a, 1995a and 1995b). Figure 2.6-1 shows the relationship between these basins and the project area. All of the drainage basins within the project area ultimately flow into the Mississippi River, many via the Illinois River. Table 2.6-2 summarizes available information on various physical features of the perennial streams within the project area. Numerous minor tributaries and drainageways lie within the project area, but were not characterized by available references. They were, however, evaluated during the analysis of impacts.

Table 2.5-1
SUMMARY OF EXISTING NOISE AND VIBRATION ESTIMATES
ALONG THE HIGH-SPEED RAIL CORRIDOR

			Noise Range						Vibration Range					
County	Type of Receptor	No. of Receptors	Low (dBA)	Railroad	Approx. Milepost	High (dBA)	Railroad	Approx. Milepost	Low (VdB)	Railroad	Approx. Milepost	High (VdB)	Railroad	Approx. Milepost
Cook	Residential	1448	52	Rock Island District	12	68	IC mainline	15	53	IC-Joilet Line	3	76	Rock Island District	12
	Non-Residential	8	51	Rock Island District	13	64	IC-Joliet Line	22	65	Rock Island District	13	75	IC-Joilet Line	22
Will	Residential	379	56	Rock Island District	39	68	Union Pacific	40	59	Rock Island District	40	75	IC-Joilet Line	37
	Non-Residential	10	55	IC-Joliet Line	30	61	Union Pacific	30	61	IC-Joilet Line	30	72	IC-Joilet Line	30
Kankakee	Residential	103	56	Norfolk Southern	105	66	IC mainline	47	56	IC mainline	105	70	IC mainline	47
	Non-Residential	0												
Grundy	Residential	28	59	Union Pacific	64	67	Union Pacific	64	61	Union Pacific	64	75	Union Pacific	64
	Non-Residential	0												
Livingston	Residential	124	56	Norfolk Southern	119	67	Union Pacific	73	59	Norfolk Southern	119	75	Union Pacific	90
	Non-Residential	3	54	Norfolk Southern	119	57	Union Pacific	73	63	Norfolk Southern	119	67	Union Pacific	73
McLean	Residential	261	59	Union Pacific	110	67	Union Pacific	123	61	Union Pacific	110	75	Union Pacific	123
	Non-Residential	3	60	Union Pacific	117	61	Union Pacific	123	70	Union Pacific	117	72	Union Pacific	123
Logan	Residential	94	59	Union Pacific	146	67	Union Pacific	146	61	Union Pacific	146	75	Union Pacific	146
	Non-Residential	0												
Sangamon	Residential	496	56	Union Pacific	185	74	Union Pacific	194	56	Union Pacific	185	81	Union Pacific	194
	Non-Residential	46	52	Union Pacific	185	61	Union Pacific	185	56	Union Pacific	185	69	Union Pacific	185
Macoupin	Residential	161	59	Union Pacific	210	68	Union Pacific	223	61	Union Pacific	210	75	Union Pacific	223
	Non-Residential	0												
Jersey	Residential	33	59	Union Pacific	247	66	Union Pacific	247	61	Union Pacific	247	72	Union Pacific	247
	Non-Residential	1	63	Union Pacific	247	63	Union Pacific	247	75	Union Pacific	247	75	Union Pacific	247
Madison	Residential	402	59	Union Pacific	256	66	Union Pacific	256	60	Union Pacific	256	71	Union Pacific	256
	Non-Residential	0												
St. Clair	Residential	0												
	Non-Residential	0												
St. Louis	Residential	0												
	Non-Residential	0												
TOTAL	Residential	3529	52	Rock Island District	12	74	Union Pacific	194	53	IC-Joilet Line	3	81	Union Pacific	194
	Non-Residential	71	51	Rock Island District	13	64	IC-Joliet Line	22	56	Union Pacific	185	75	IC-Joliet Line	22

Source: De Leuw, Cather & Company, February 2000.

Table 2.6-1
MAJOR RIVER BASINS IN THE PROJECT AREA

Major River Basin	Drainage Area sq. km. (sq. mi.)	Sub-Basins	Percent of Project Area
Des Plaines/Lake Michigan	3,200 (1,231)	Great Lakes/Calumet	21
		Des Plaines	
Kankakee	13,400 (5,165)	Kankakee/Iroquois	17
Illinois	64,300 (24,810)	Upper Illinois/Mazon	29
		Vermilion	
		Middle Illinois	
		Mackinaw	
		Lower Illinois/Macoupin	
Sangamon	14,000 (5,419)	Upper Sangamon	22
		Lower Sangamon	
		Salt Creek of Sangamon	
Mississippi South Central	2,900 (1,131)	Mississippi South Central	11

Source: IEPA (1994a, 1995a and 1995b)

Most streams in Illinois have been manipulated either directly (i.e., dredging, channelization, construction of dams) or indirectly (i.e., changes to surrounding land use, resulting in adverse impacts to stream habitats) (IDNR, 1994a). Channelization of streams and their tributaries has been common practice in Illinois in response to agricultural needs. In some cases, more than 25 percent of the total stream length within a basin has been straightened. This is the case for streams in the Sangamon, Des Plaines, and Kankakee basins and the Vermilion and Mackinaw sub-basins of the Illinois Basin (IDNR, 1994b). The surrounding land immediately adjacent to the water body, as well as within the watershed, substantially influences the physical, chemical, and ultimately the biological aspects of streams and rivers.

Des Plaines/Lake Michigan Basin:

The Des Plaines River enters into Illinois from southern Wisconsin. The direction of flow is generally south through Lake and Cook counties. Near Lyons, Illinois, it parallels the Chicago Sanitary and Ship Canal until their confluence near Joliet in Will County. Because of channel modification, rather than into Lake Michigan, water from this basin drains southwest through the Des Plaines River to where it joins flows from the Kankakee River to form the Illinois River.

In Illinois, the Des Plaines Basin drains approximately 3,200 square kilometers (1,231 square miles) with most of this consisting of the greater Chicago Metropolitan Area. This region has been extensively developed for urban and industrial use. Average daily stream flow within the Des Plaines Basin based on a 260 square kilometer (100 square mile) area varies from 0.02 cms (0.55 cfs) in the north to northwest portion and 0.02 cms (0.80 cfs) in the eastern portion of the basin (IEPA, 1976a). This basin represents approximately 21 percent of the project area length. The project area parallels the Chicago Sanitary and Ship Canal and crosses the Calumet Sag Channel and the Little Calumet River.

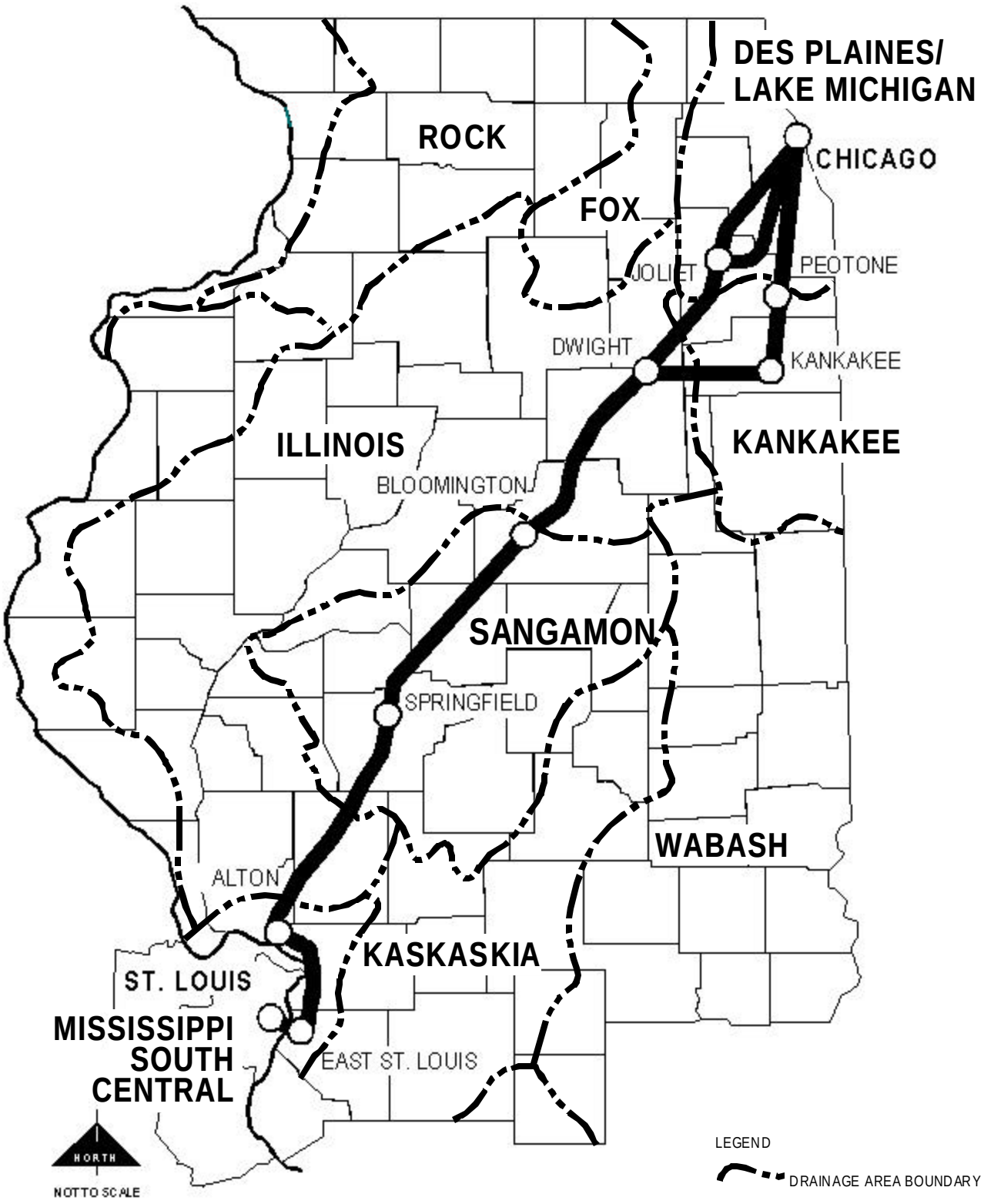


FIGURE 2.6-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
MAJOR DRAINAGE BASINS

Table 2.6-2
SUMMARY OF PHYSICAL FEATURES OF PERENNIAL STREAMS IN THE HIGH-SPEED RAIL PROJECT AREA

Approx. Milepost	River Basin[1]	Water Feature	County	Bottom Substrate	Approx. Stream Velocity (ft/sec)	Approx. Stream bed Width (ft)	Turbidity	Approx. Depth (ft)	Other Features
IC-Joliet Line/Union Pacific Railroad									
32-36	DPGL	I&M Canal	Will	n/s	n/s	n/s	n/s	n/s	
33.80	DPGL	Fraction Run	Will	n/s	n/s	n/s	n/s	n/s	
38.20	DPGL	Hickory Creek	Will	silt, sand, gravel	0.3	70	n/s	0.4	pool community, bank stability poor, stream channelized
38.90	DPGL	Sugar Run	Will	n/s	n/s	n/s	n/s	n/s	
43.00	DPGL	Cedar Creek	Will	silt, cobble		12	Moderate	0.5	pool community
44.50	DPGL	Jackson Creek	Will	sand, silt, cobble	0.2	35	n/s	0.5-1.0	riffle/pool community, some channelization, fair streamside cover
47.30	DPGL	Grant Creek	Will	n/s	n/s	n/s	n/s	n/s	
49.40	KAN	Prairie Creek	Will	sand, gravel, cobble	0.3	10	Low	1.5	bank stability and streamside cover good east of right-of-way, channel widened west of right-of-way for cattle watering
52.50	KAN	Forked Creek	Will	silt, cobble	0.5	12	Moderate	1.0	bank stability poor
52.80	KAN	Kankakee River	Will	sand, gravel	n/s	n/s	Low	n/s	riffle community, outstanding fishing waters, proposed for state wild and scenic status
64.07	IL	Mazon River	Grundy	n/s	n/s	n/s	n/s	n/s	
67.26	IL	Unnamed tributary, Mazon River	Grundy	n/s	n/s	n/s	n/s	n/s	
72.50	IL	Gooseberry Creek	Livingston	n/s	n/s	n/s	n/s	n/s	
86.65	IL	Wolf Creek	Livingston	n/s	n/s	n/s	n/s	n/s	
91.13	IL	North Creek	Livingston	n/s	n/s	n/s	n/s	n/s	
92.20	IL	Vermilion River	Livingston	n/s	n/s	n/s	n/s	n/s	

Approx. Milepost	River Basin[1]	Water Feature	County	Bottom Substrate	Approx. Stream Velocity (ft/sec)	Approx. Stream bed Width (ft)	Turbidity	Approx. Depth (ft)	Other Features
93.87	IL	Turtle Creek	Livingston	n/s	n/s	n/s	n/s	n/s	
97.35	IL	Rooks Creek	Livingston	n/s	n/s	n/s	n/s	n/s	
100.30	IL	Unnamed channel	Livingston	n/s	n/s	n/s	n/s	n/s	
111.25	IL	Mackinaw River	McLean	sand, silt, gravel, cobble	0.2	50	Moderate	1.0	pool/riffle community, streamside cover good, bank stability fair, outstanding fishing waters, proposed for state wild and scenic status
117.10	IL	Money Creek	McLean	sand, silt	n/s	40	High	0.5-1.0	bank stability fair
127.50	SAN	Goose Creek	McLean	silt, cobble	n/s	25	Low	1.0-1.5	
136.55	SAN	Timber Creek	McLean	sand, silt, few cobbles	n/s	40	High	n/s	bank stability fair-poor, stream channelized west of railroad tracks
144.05	SAN	Clear Creek	Logan	n/s	n/s	n/s	n/s	n/s	
149.50	SAN	Kickapoo Creek	Logan	n/s	n/s	n/s	n/s	n/s	
158.20	SAN	Salt Creek	Logan	silt, sand, gravel	<0.1	40	High	0.5-1.0	sand bars present, bank stability fair
167.30	SAN	Elkhart Slough	Logan	silt	n/s	15	n/s	n/s	water pooled east of bridge, normal water level approx. 8" above current water level
172.35	SAN	Wolf Creek	Logan	n/s	n/s	n/s	n/s	n/s	
176.00	SAN	Fancy Creek	Sangamon	n/s	n/s	n/s	n/s	n/s	
180.10	SAN	Sangamon River	Sangamon	n/s	n/s	n/s	n/s	n/s	priority/outstanding fishing waters
192.00	SAN	Lake Springfield	Sangamon	n/s	n/s	n/s	n/s	n/s	

Approx. Milepost	River Basin[1]	Water Feature	County	Bottom Substrate	Approx. Stream Velocity (ft/sec)	Approx. Stream bed Width (ft)	Turbidity	Approx. Depth (ft)	Other Features
197.80	SAN	Panther Creek	Sangamon	silt, few cobbles, debris	n/s	n/s	n/s	n/s	no flow, water pooled west side of bridge
202.70	SAN	Trib. to Sugar Creek	Sangamon	n/s	n/s	n/s	n/s	n/s	concrete channel
203.10	SAN	Sugar Creek	Sangamon	silt, gravel, cobble	<0.1	25	Moderate	0.5	bank stability fair, streamside cover fair
218.10	SAN	Anderson Branch	Macoupin	silt, sand cobble	n/s	7	n/s	n/s	no water present at time of site visit
233.60	MSC	Macoupin Creek	Macoupin	n/s	n/s	n/s	n/s	n/s	priority/outstanding fishing waters
236.10	MSC	Coop Branch	Macoupin	n/s	n/s	n/s	n/s	n/s	bank stability fair NE bank heavily deposited, flow only from one section under bridge
254.00	MSC	Coal Branch Creek	Madison	n/s	n/s	n/s	n/s	n/s	
258.00	MSC	Wood River	Madison	sand & silt	n/s	n/s	n/s	n/s	
266.70	MSC	Cahokia Channel	Madison	n/s	n/s	n/s	n/s	n/s	
282.00	MSC	Mississippi River	St. Clair	n/s	n/s	n/s	n/s	n/s	
Illinois Central Mainline									
16.80 & 18.50	DPGL	Little Calumet River	Cook	n/s	n/s	n/s	n/s	n/s	
20.80	DPGL	Calumet Union Drainage Canal	Cook	n/s	n/s	n/s	n/s	n/s	
21.60	DPGL	Calumet Sag Channel	Cook	n/s	n/s	n/s	n/s	n/s	
27.10	DPGL	Butterfield Creek	Cook	n/s	n/s	n/s	n/s	n/s	
37.25	KAN	Rock Creek	Will	Sand, gravel, cobble	1.0	16	Low	0.5	bank stability fair, streamside cover fair

Approx. Milepost	River Basin[1]	Water Feature	County	Bottom Substrate	Approx. Stream Velocity (ft/sec)	Approx. Stream bed Width (ft)	Turbidity	Approx. Depth (ft)	Other Features
47.90	KAN	South Branch Rock Creek	Kankakee	silt, few cobbles	0.5	65	Moderate	1.0-1.5	bank stability fair-poor, riffle community, streamside cover fair
Norfolk Southern									
101.72	KAN	Kankakee River	Kankakee	sand, gravel, bedrock	n/s	n/s	Low	n/s	outstanding fishing waters, proposed for state wild and scenic status
110.20	KAN	Lehigh Raymond Run	Kankakee	n/s	n/s	n/s	n/s	n/s	
112.00	KAN	Bertrand Branch	Kankakee	n/s	n/s	n/s	n/s	n/s	
113.10	KAN	E. Branch Horse Creek	Kankakee	silt, sand, cobble	0.3	15	Moderate	1.5	stream channelized, streamside cover and bank stability poor, riffle/pool community, but heavy silt deposits
114.66	KAN	W. Branch Horse Creek	Kankakee	sand, silt, gravel	0.3	25	Moderate	1.0	channelized south of railroad tracks, streamside cover and bank stability poor to south, good to north, riffle/pool community
117.80	IL	Crane Creek	Kankakee	n/s	n/s	n/s	n/s	n/s	
117.80	IL	Granary Creek	Kankakee	n/s	n/s	n/s	n/s	n/s	
121.00	IL	Reddick Run	Kankakee	n/s	n/s	n/s	n/s	n/s	
122.50	IL	Unnamed tributary to Reddick Run	Livingston	n/s	n/s	n/s	n/s	n/s	
123.90	IL	E. Fork Mazon River	Livingston	n/s	n/s	n/s	n/s	n/s	
125.00	IL	Gooseberry Creek	Livingston	n/s	n/s	n/s	n/s	n/s	

Approx. Milepost	River Basin[1]	Water Feature	County	Bottom Substrate	Approx. Stream Velocity (ft/sec)	Approx. Stream bed Width (ft)	Turbidity	Approx. Depth (ft)	Other Features
126.40	IL	Unnamed tributary to Gooseberry Creek	Livingston	n/s	n/s	n/s	n/s	n/s	

Source: Huntington and Echeverria 1991, IEPA 1994a and 1994b, 1995a and 1995b, IDNR 1996c.

1 – Major River Basins:
DPGL - Des Plaines/Great Lake River Basin
KAN - Kankakee River Basin
IL - Illinois River Basin
SAN - Sangamon River Basin
MSC - Mississippi South Central River Basin

n/s – Not surveyed because these areas were outside the areas of proposed construction.

Five streams are tributaries to the Des Plaines River in areas where potential impacts from the proposed project may occur. These are Hickory Creek, Sugar Run, Cedar Creek, Jackson Creek, and Grant Creek.

Kankakee Basin:

The Kankakee Basin in east-central Illinois drains northwest via the Kankakee River to the Illinois River. The Kankakee Basin in Illinois drains 5,600 square kilometers (2,169 square miles). However, the cumulative basin of the Kankakee in Illinois and Indiana drains 13,400 square kilometers (5,165 square miles). This basin represents 17 percent of the project area length. Snowmelt and convective storms in spring and early summer are responsible for the majority of surface runoff. Average daily stream flow varies between the western and eastern portions of the basin. For a 260 square kilometer (100 square mile) area, average flow is 0.02 cms (0.60 cfs) in the extreme western part and 0.02 cms (0.80 cfs) in the eastern portion of the basin (IEPA, 1976b). Wilmington, located near the western margin of the basin, is the primary urban area near the project area.

Seven streams are tributary to the Kankakee Basin in areas where potential impacts from the proposed project may occur. These are Kankakee River, Rock Creek, South Branch Rock Creek, Prairie Creek, Forked Creek, East Branch Horse Creek, and West Branch Horse Creek.

Illinois Basin:

The Illinois River Basin represents the largest portion of the project area (29 percent). The basin drains to the southwest, ultimately to the Mississippi River. The average daily stream flow within the Illinois Basin based on a 260 square kilometer (100 square mile) area varies from 0.01 cms (0.45 cfs) in the far western portion to 0.02 cms (0.60 cfs) in the northeastern area of the basin (IEPA, 1976c). Most precipitation comes in May and June as thunderstorms; the mean annual snowfall ranges from 43 to 48 centimeters (17 to 19 inches) a year (Zuehls, 1987). December and February are typically the driest months. Macoupin is the primary urban area near the project area within the lower portion of this basin.

Three streams are tributary to the Illinois Basin in areas where potential impacts from the proposed project may occur. These are Mackinaw River, Money Creek, and Granary Creek.

Sangamon Basin:

The Sangamon River Basin drains 14,000 square kilometers (5,419 square miles) from portions of 16 counties in central Illinois and represents 22 percent of the project area length. This basin forms the largest watershed of any of the tributaries to the Illinois River. Major streams within the Sangamon Basin include South Fork Sangamon River and Salt Creek (IEPA, 1994a). This basin receives from 89 to 97 centimeters (35 to 38 inches) of precipitation yearly. Most (60 percent) of the precipitation comes between April and September in the form of spring and summer thunderstorms (Zuehls et al., 1984). Snowfall ranges from 46 to 61 centimeters (18 to 24 inches) per year. The average daily stream flow for a 260 square kilometer (100 square mile) area within the basin ranges from 0.01 cms (0.50 cfs) in the southwestern portion to 0.02 cms (0.70 cfs) in the extreme northeastern portion of the basin (IEPA, 1976d). Springfield, Bloomington, and Normal are the major urban areas near the project area within this basin.

Eight streams are tributary to the Sangamon Basin in areas where potential impacts from the proposed project may occur. These are Goose Creek, Timber Creek, Salt Creek, Elkhart Slough, Panther Creek, a tributary to Sugar Creek, Sugar Creek, and Anderson Branch.

Mississippi South Central Basin:

The final major basin, the Mississippi South Central Basin, drains to the Mississippi River for lands surrounding St. Louis. The basin represents 11 percent of the project area and receives 97 centimeters (inches) of average annual rainfall (Zuehls, 1987). Snowfall averages 43 centimeters (17 inches). February and December are the driest months. Average daily stream flows within the Mississippi South Central Basin, based on a 260 square kilometer (100 square mile area), vary from 0.01 cms (0.50 cfs) in the northern part to 0.02 cms (0.70 cfs) in the south portion of the basin (IEPA, 1976e).

A single stream, Coop Branch, is located in an area where potential impacts from the HSR project may occur.

2.6.1.2 Aquatic Biota

Ponds, lakes, streams, and rivers within the project area support numerous life forms. Most animals and organisms require definite types of aquatic habitat to survive, grow and reproduce. The character of the substrate may be the primary physical factor influencing the distribution and abundance of benthic invertebrates (Ivens et al., 1981). Sedimentation adversely affects the aquatic life of a stream through loss of habitat, direct mortality, injury, and growth suppression. The degree of damage correlates positively with the amount of sediment deposited into the river (Brigham et al., 1981). General water quality aspects of the various streams and rivers along the project area are described in Section 2.6.1.3.

Among the primary aquatic species that utilize the various water habitats are vertebrates (fishes) and invertebrates (e.g., annelids, macrocrustaceans, aquatic insects, and mollusks). Aquatic insects inhabiting inundated areas along the project area include, but are not limited to, mayflies, damselflies, stoneflies, blackfly, water beetles, water striders, and various dragonflies. These species exist as adults or larvae or nymphs within or directly associated with the water column. Adult species of most insects are usually more evident and active during the summer and fall months. Winter periods can be a time of slowed activity. In early spring, many insects resume feeding patterns. During late spring through summer, many insects emerge into adults from their larvae or nymph phases. It is during this period reproduction typically occurs. Insect life cycles vary from one species to another, some of them depending indirectly on immature insects as a food source.

Des Plaines/Lake Michigan Basin:

Extensive modification has occurred to many channels within this basin, particularly those that form the canal system. Ninety-four species of fishes, 34 species of mussels, and 17 species of crustaceans have been reported from this basin (Page et al., 1992). However, these figures cover a large area beyond the project area, including Lake Michigan. Aquatic resources contained within the project area are less diverse than those of the basin as a whole.

Waterways crossed by the project are dominated by fish species tolerant to pollution, including turbid waters. Such waters are non-conducive to the establishment of most native organisms. Fish species likely to be found include goldfish, carp, and green sunfish. Bottom substrates such as gravel, brush piles, and aquatic

weed beds, which can provide habitat for fish and invertebrates, are limited due to channelization and sediment deposition. Data on invertebrate populations is scarce.

Like fish species, invertebrates that may exist in the project area include organisms that have the ability to survive a wide range of environmental conditions and are generally capable of thriving in water of extremely poor quality. Tolerant invertebrates are often found in great abundance in areas of organic pollution and typically include annelids (e.g., aquatic earthworms and leeches). Insects typically associated with polluted waters include moth flies and mosquitoes. Most arthropods (e.g., crayfish and sow bugs) are intolerant or moderately tolerant of pollution and are probably not found in great abundance in this basin.

Kankakee Basin:

Based on current scientific literature reviews and previous field experience of investigators, the numerous quality streams and creeks of known high quality exist throughout the basin. These streams play a crucial role in providing food sources, temporary and permanent shelter and spawning areas for aquatic wildlife. Headwaters as well as confluence regions play an important role for the diversification of plant and animal species within this basin. In particular, the Kankakee River is an excellent resource in terms of species diversity and as a fishery. Seventy-two fish species are present, including several unusual species such as the ironcolor shiner, weed shiner, blacknose shiner, lake chubsucker, starhead topminnow, northern longear sunfish, and least darter (Smith, 1971).

The Kankakee River hosts a variety of midges, caddisflies, mussels, and water beetles. The diversity of benthic invertebrates increases in areas of complex substrates such as areas having various amounts of sand, silt, gravel, cobble, and bedrock. Less diverse substrates typically support from 25 to 28 taxa while more diverse substrates support from 70 to 80 taxa. Twenty-seven species of midge flies, 62 species of caddisflies, and 64 species of water beetle were collected in 1978 in the river upstream of the project area crossings. Ten more species of caddisflies were previously recorded for the river and 52 more species of water beetles are considered likely to occur in the river, giving totals of 72 caddisflies and 116 water beetles (Brigham et al., 1981). Thirty-seven species of mussels have been reported in the river. A dramatic decline in the mussel fauna of the Kankakee River has occurred over the past 100 years. This decline is similar to that documented for other Illinois rivers, including the Illinois, Kaskaskia, Rock, and Vermilion rivers (Brigham et al., 1981).

Illinois Basin:

From 67 to 100 fish species have been identified within streams in the Illinois Basin, which includes considerable area beyond the project area. Mazon Creek system contains 67 fish species. Habitats include extensive beds of aquatic vegetation and gravelly riffles and pools. Habitats in the Mackinaw River are similar to those of Mazon Creek. The diversity of habitats along the Mackinaw is reflected in high fish species diversity (i.e., 100 species of fish) (Smith, 1971). Unusual species include rosyface shiner, silver redhorse, and the freckled madtom. The Vermilion River contains 80 fish species. Habitats within the river include gravely and sandy riffels and pools as well as aquatic vegetation and rocky riffles. Unusual fish species include blacknose dace, redbelly dace, and hornyhead chub (Smith, 1971).

Many of the waters in the Illinois Basin are characterized by populations of pollution worms of the family Tubificidae. However, some of the original diversity of benthic organisms, such as immature insects, clams, snails, leeches, moss animals and the like, exists in some parts of the basin and its lakes (Mills et al., 1966).

Sangamon Basin:

Ninety-four fish species are present within the Sangamon River system (Smith, 1971). The headwaters of the Sangamon River, Kickapoo Creek, and some small tributaries near the mouth of the Sangamon support particularly rich assemblages of fishes (Smith, 1971). Some of the unusual species include the rosy face shiner, silver redhorse, and freckled madtom. Habitats for aquatic biota in this river system include shallow and deep water pools, submerged aquatic vegetation, and riffels. Salt Creek is less altered than the Sangamon River although both branches of Salt Creek have lost some of the species they once supported.

Mississippi South Central Basin:

The Wood River and the Cahokia Canal are small tributaries to the Mississippi River. The fish species number approximately 64 (Smith, 1971). Problems affecting the diversity of fish species include extensive industrial pollution, siltation, and desiccation of small streams during drought periods. The streams lack variety in aquatic habitats and would not have high species diversity even if they were not polluted and otherwise altered (Smith, 1971).

2.6.1.3 Water Quality

Water quality standards set by the Illinois Pollution Control Board (IPCB) are based on the degree to which a water feature provides the "designated use." Water resources in Illinois are classified by a number of designated uses. The General Use category provides for the protection of indigenous aquatic life, primary (e.g., swimming) and secondary (e.g., boating) contact recreation, agricultural, and industrial uses. A more stringent set of water quality standards must be met for aquatic resources designated as Public and Food Processing Water Supplies. The least stringent category is for Secondary Contact and Indigenous Aquatic Life. This applies only to certain streams and canals in the Chicago area and is not directly related to water quality restrictions (IEPA, 1994a).

Table 2.6-3 summarizes water quality features of perennial streams within the project area. This information was primarily extracted from Illinois Environmental Protection Agency's "The Illinois Water Quality Report 1998 Update" (IEPA, 1998) and from the 1997 water resources data for the State (USGS, 1997). The IEPA report provides an evaluation of the water quality of the State's aquatic resources. In this report water quality conditions are described in terms of the degree to which the various waters attain their designated uses. Good condition indicates that the water body meets alldesignated uses or offers "Full Support." Fair condition indicates that the designated uses are met most of the time (i.e., "Partial Support with Minor or Moderate Impairment"). Poor condition indicates that water quality is severely impaired and that the water feature offers "No Support" for the designated uses to any degree. Waters considered "Threatened" are those where water quality is currently adequate to maintain the designated use, but if a declining trend continues, only partial support may be attained in the future.

Table 2.6-3
SUMMARY OF WATER QUALITY FEATURES OF PERENNIAL STREAMS IN THE HIGH-SPEED RAIL PROJECT AREA

Approx. Milepost	River Basin[1]	Water Feature	County	Approx. Drainage Area (sq. mi.)	IEPA Designated Use[2]	IEPA Biological Stream Character	Water Quality[3]	ACOE Regulatory Jurisdictional Boundaries
IC-Joliet Line/Union Pacific Railroad								
32-36	DPGL	I&M Canal	Will	55	N/A	N/A	N/A	Chicago
33.80	DPGL	Fraction Run	Will	6	full support	N/A	good	Chicago
38.20	DPGL	Hickory Creek	Will	109	partial minor	Class C	fair	Chicago
38.90	DPGL	Sugar Run	Will	15	partial minor	Class D	fair	Chicago
43.00	DPGL	Cedar Creek	Will	7	full support	N/A	good	Chicago
44.50	DPGL	Jackson Creek	Will	47	full support	Class B	good	Chicago
47.30	DPGL	Grant Creek	Will	9	partial moderate	Class D	fair	Chicago
49.40	KAN	Prairie Creek	Will	45	full threatened	N/A	good	Chicago
52.50	KAN	Forked Creek	Will	137	full support	Class C	good	Chicago
52.80	KAN	Kankakee River	Will	4953	full support	Class B	good	Chicago
64.07	IL	Mazon River	Grundy	524	full support	Class A	good	Rock Island
67.26	IL	Unnamed tributary, Mazon River	Grundy	N/A	N/A	N/A	N/A	Rock Island
72.50	IL	Gooseberry Creek	Livingston	N/A	full support	N/A	good	Rock Island
86.65	IL	Wolf Creek	Livingston	N/A	full support	Class B	fair	Rock Island
91.13	IL	North Creek	Livingston	N/A	N/A	N/A	N/A	Rock Island
92.20	IL	Vermilion River	Livingston	1331	partial minor	Class A	fair	Rock Island
93.87	IL	Turtle Creek	Livingston	N/A	full support	N/A	good	Rock Island
97.35	IL	Rooks Creek	Livingston	17	full support	Class B	good	Rock Island
100.30	IL	Unnamed channel	Livingston	N/A	N/A	N/A	N/A	Rock Island
111.25	IL	Mackinaw River	McLean	309	full support	Class A	good	Rock Island
117.10	IL	Money Creek	McLean	49	full support	Class C	fair	Rock Island
127.50	SAN	Goose Creek	McLean	N/A	full support	N/A	good	Rock Island
136.55	SAN	Timber Creek	McLean	N/A	partial minor	Class C	fair	Rock Island
144.05	SAN	Clear Creek	Logan	N/A	full support	Class D	good	Rock Island
149.50	SAN	Kickapoo Creek	Logan	31	full support	Class B	good	Rock Island
158.20	SAN	Salt Creek	Logan	72	full support	Class C	good	Rock Island

Approx. Milepost	River Basin[1]	Water Feature	County	Approx. Drainage Area (sq. mi.)	IEPA Designated Use[2]	IEPA Biological Stream Character	Water Quality[3]	ACOE Regulatory Jurisdictional Boundaries
167.30	SAN	Elkhart Slough	Logan	N/A	N/A	N/A	N/A	Rock Island
172.35	SAN	Wolf Creek	Logan	N/A	partial minor	Class D	fair	Rock Island
176.00	SAN	Fancy Creek	Sangamon	N/A	full support	N/A	good	Rock Island
180.10	SAN	Sangamon River	Sangamon	655	partial minor	Class B	fair	Rock Island
192.00	SAN	Lake Springfield	Sangamon	N/A	full support	N/A	good	Rock Island
197.80	SAN	Panther Creek	Sangamon	24	full support	Class C	good	Rock Island
202.70	SAN	Trib. to Sugar Creek	Sangamon	N/A	N/A	N/A	fair	Rock Island
203.10	SAN	Sugar Creek	Sangamon	100	partial moderate	Class C	fair	Rock Island
218.10	SAN	Anderson Branch	Macoupin	N/A	N/A	N/A	N/A	St. Louis
233.60	MSC	Macoupin Creek	Macoupin	961	partial minor	N/A	fair	St. Louis
236.10	MSC	Coop Branch	Macoupin	22	N/A	N/A	N/A	St. Louis
254.00	MSC	Coal Branch Creek	Madison	N/A	N/A	N/A	N/A	St. Louis
258.00	MSC	Wood River	Madison	123	partial minor	Class D	fair	St. Louis
266.70	MSC	Cahokia Channel	Madison	37	partial minor	Class C	fair	St. Louis
282.00	MSC	Mississippi River	St. Clair	697,000	partial minor	N/A	fair	St. Louis
Illinois Central Mainline								
16.80 & 18.50	DPGL	Little Calumet River	Cook	231	non support	Class D	poor	Chicago
20.80	DPGL	Calumet Union Drainage Canal	Cook	N/A	non support	Class E	poor	Chicago
21.60	DPGL	Calumet Sag Channel	Cook	N/A	non support	Class D	poor	Chicago
27.10	DPGL	Butterfield Creek	Cook	9	partial moderate	Class C	fair	Chicago
37.25	KAN	Rock Creek	Will	12	full support	Class B	good	Chicago
47.90	KAN	South Branch Rock Creek	Kankakee	47	full support	Class B	good	Rock Island
Norfolk Southern								
101.72	KAN	Kankakee River	Kankakee	2159	full support	Class B	good	Rock Island
110.20	KAN	Lehigh Raymond Run	Kankakee	N/A	full support	Class B	good	Rock Island
112.00	KAN	Bertrand Branch	Kankakee	N/A	full support	N/A	good	Rock Island
113.10	KAN	E. Branch Horse Creek	Kankakee	73	full support	Class C	good	Rock Island
114.66	KAN	W. Branch Horse	Kankakee	31	full support	Class C	good	Rock Island

Approx. Milepost	River Basin[1]	Water Feature	County	Approx. Drainage Area (sq. mi.)	IEPA Designated Use[2]	IEPA Biological Stream Character	Water Quality[3]	ACOE Regulatory Jurisdictional Boundaries
		Creek						
117.80	IL	Crane Creek	Kankakee	N/A	N/A	Class C	N/A	Rock Island
117.80	IL	Granary Creek	Kankakee	N/A	N/A	Class B	N/A	Rock Island
121.00	IL	Reddick Run	Kankakee	45	full support	N/A	good	Rock Island
122.50	IL	Unnamed tributary to Reddick Run	Livingston	N/A	N/A	N/A	N/A	Rock Island
123.90	IL	E. Fork Mazon River	Livingston	106	full support	Class C	good	Rock Island
125.00	IL	Gooseberry Creek	Livingston	N/A	full support	N/A	good	Rock Island
126.40	IL	Unnamed tributary to Gooseberry Creek	Livingston	N/A	N/A	N/A	N/A	Rock Island

Source: Huntington and Echeverria 1991, IEPA 1998, 1996, IDNR 1996c.
USGS Water Resources Investigations 13-75.

1 - Major River Basins:
DPGL - Des Plaines/Great Lake River Basin
KAN - Kankakee River Basin
IL - Illinois River Basin
SAN - Sangamon River Basin
MSC - Mississippi South Central River Basin

2 - Designated Uses:
Full Support -- water quality meets the needs of all designated uses protected by applicable water quality standards.
Full Threatened -- water quality presently adequate to maintain designated uses, however, if declining trend in water quality continues, partial support may be realized in future.
Partial Support with Minor Impairment -- water quality has been impaired to a minor degree.
Partial Support with Moderate Impairment -- water quality conditions are impaired; not all designated uses are attained due to exceedances.
Nonsupport -- water quality is severely impaired and inhibits the water body from meeting any of its designated uses.

3 - Water Quality qualifiers:
Good - full support of designated use:
none or one violation per parameter of acute standards within 5-year period; metals and organochlorine compounds generally occur at non-elevated levels although some may be at slightly elevated concentrations.
Fair - partial support of designated use:
- partial/minor: two violations per parameter of acute standards within a 5-year period; metals or organochlorine compounds occur at elevated levels.
- partial/moderate: two violations per parameter of acute standards within 3 consecutive years; metals or organochlorine compounds occur at highly elevated levels.

Poor - non-support of designated use:
three or more violations per parameter of acute standards within 5-year period; metals or organochlorine compounds consistently occur at extremely high levels.

Overall stream quality in Illinois has improved over the past two decades. The water quality trend analysis reported (IEPA, 1994a) most streams to be either stable or slightly improving. Some streams have improved due to a decline of point source impacts. Other streams continue to show indicators of receiving non-point source pollution, in particular, increased siltation, phosphorus, and nitrate/nitrite concentrations typically associated with agricultural runoff. Streams and rivers within the five basins have fair to good water quality, although portions near the Chicago metropolitan area have poor quality (IEPA, 1995b). Elevated levels of toxics in sediments of Illinois's rivers and streams were apparent in 3,111 stream kilometers (1,929 stream miles) throughout Illinois (IEPA, 1994a).

Sediment load in rivers and streams is a concern for aquatic resources meeting water quality conditions in Illinois. Sediment load is greatest in streams located in west and southwest portions of Illinois. The Mississippi South Central Basin is considered within an area of higher sediment loads, while the extreme northeastern portion of the Sangamon Basin is part of the region that has the lowest sediment load carried by streams. Average water flow contributes to, but is not the only determinant of sediment load. Other factors influencing sediment load include, the gradient and composition of the basin, land uses, ground cover and the nature and extent of human activity within the watershed (Bhowmik, 1987).

In 1984, stream biologists from the IEPA and the Illinois Department of Natural Resources (IDNR) developed the Biological Stream Characterization (BSC), a stream-quality index (Hite and Bertrand, 1989). The BSC work group developed a five-tiered classification system based on fish and aquatic macroinvertebrate diversity and the associated index of biological integrity. This index assesses the biological condition of streams. The BSC system contains categories “A” to “E”. Areas that are Category “A” (Unique Aquatic Resources) are in excellent condition, comparable to the best situations without human disturbance. Category “B” streams are Highly Valued Aquatic Resources and are considered good fisheries for important game species; however, species richness may be somewhat below expectations for the stream size or geographic region. Category “C” (Moderate Aquatic Resource) streams are considered to be in fair condition typically with reduced diversity and a game fish population of sunfishes, bullheads, and carp. Category “D” streams are in poor condition, and Category “E” streams are considered to be in very poor condition and support few species, those of which are the most environmentally tolerant species (IEPA 1994a).

Des Plaines/Lake Michigan Basin:

Most of the Des Plaines/Lake Michigan Basin watershed occurs in the greater Chicago Metropolitan region and has been extensively urbanized and industrialized. Water quality in this basin has been degraded due to urban stormwater runoff, municipal and industrial discharges, and extensive channelization of many of its small tributaries. Over enrichment of the water from treated and untreated sewage is a major problem, particularly since at least 100 waste treatment plants empty their effluent into the Des Plaines Basin (Page et al., 1992). The Des Plaines Basin exhibits the highest levels of heavy metals and organics in sediments. Contaminants found include, arsenic, cadmium, chromium, lead, mercury, zinc, chlordane, DDT, heptachlor epoxide, and PCBs. The sources of these contaminants are municipal and industrial waste waters and urban runoff (IEPA, 1994a). Water quality in the metropolitan area for this drainage basin is typically affected to a greater degree than for the less-urbanized areas.

Approximately 11.5 percent of the 1163 stream kilometers (721 stream miles) evaluated and/or monitored in this basin were rated as full support; 26.8 percent showed partial support with minor impairment. The majority of the stream kilometers (51.9 percent) were rated as partial support with moderate impairment, and the remaining 9.8 percent were considered as not supporting overall uses (IEPA, 1994a). Project area streams evaluated under the water quality program are rated as full support streams except for the downstream reaches of Hickory Creek and Sugar Run which were rated partial support with minor impairment. Hickory Creek was rated as a Category C stream (Moderate Aquatic Resource) under the BSC system (IDNR, 1996c), while Jackson Creek was rated as Category B (Highly Valued Aquatic Resource).

Kankakee Basin:

Water quality within the Kankakee Basin has had some degradation due to increased nutrients and siltation associated with agricultural practices. However, this degradation has not impaired the designated uses of the water resources within this basin. A total of 829 stream kilometers (512 stream miles) in the Kankakee Basin were evaluated and/or monitored for their water quality conditions. For the Kankakee Basin, 96.1 percent of these stream kilometers were rated as full support and 3.9 percent were rated as threatened (IEPA, 1994a). This rating is improved from the 1990 Illinois Water Quality Report which identified 88.7 percent of the stream kilometers as full support and 11.3 percent as partial support with minor impairment (Page et al., 1992). Portions of the Kankakee River, from the Illinois/Indiana state line to the confluence of the Iroquois River and from Davis Creek to just before the confluence with the Des Plaines River, are rated as Category B (Highly Valued Aquatic Resource). Rock Creek and South Branch Rock Creek are rated Category B (Highly Valued Aquatic Resource) under the BSC system. Forked Creek is rated Category C (Moderate Aquatic Resource).

Illinois Basin:

Within the Illinois Basin a total of 4,656 stream kilometers (2,887 stream miles) were evaluated and/or monitored for water quality conditions. A little over half of the stream kilometers assessed (56 percent) were rated as full support. Threatened use accounted for less than 1 percent, partial support with minor impairment occurred on 40.1 percent, and 3 percent of the stream kilometers are rated as partial support with moderate impairment (IEPA, 1994a). Generalized impacts to streams in the Illinois Basin include urban stormwater runoff, municipal discharges, and non-point source pollution from cropland runoff.

Of the streams and rivers crossed in the project area, only the Mackinaw River upstream from Money Creek is identified as a Unique Aquatic Resource (Category A) under the BSC system. Other designations that reflect the excellent quality of the Mackinaw River include a) listing as an official "natural area stream" by the IDNR, b) consideration as a "high priority river" in Natural Diversity Conservation for the portion from State Route 51 to Colfax, c) listing as an "Outstanding Fishing Water," and d) proposed inclusion in the State River Protection System from its confluence with the Illinois River to its source. Granary Creek is rated a Category B stream (Highly Valued Aquatic Resource). Money Creek is rated as Category C (Moderate Aquatic Resource).

Sangamon Basin:

Point source pollution from municipal sewage treatment plants, non-point source pollution from agricultural

and acid mine runoff and direct alteration of the riparian environment, including channelization and removal of riparian vegetation have influenced the decline of water quality of the aquatic resources within the Sangamon Basin. A total of 1,771 stream kilometers (1,098 stream miles) were evaluated and/or monitored for water quality conditions within this basin. Approximately 23 percent of the stream kilometers were rated as full support, with another 2 percent of full support stream kilometers listed as threatened. The majority of the stream kilometers (65 percent) were rated as partial support with minor impairment. Another 10 percent of the stream kilometers were rated as partial support with moderate impairment, and less than 1 percent were rated as not supporting overall uses. Timber Creek, Salt Creek, Panther Creek, and Sugar Creek have been rated as Category C streams (Moderate Aquatic Resource) under the BSC system. Salt Creek and Panther Creek have been designated as full support. Timber Creek has been designated as partial support with minor impairment, while Sugar Creek has been designated as partial support with moderate impairment (IEPA 1994a, 1998).

Mississippi South Central Basin:

The Mississippi South Central Basin covers the watershed between the lower Illinois Basin and the mouth of the Kaskaskia River. Most of the stream kilometers assessed within this basin for water quality conditions were rated as either partial support with minor or moderate impairment (IEPA, 1994a). General degradation of water quality within this basin is due to urban stormwater runoff, municipal and industrial wastewater near the urban areas, and agricultural runoff in rural areas (IEPA, 1994a). Streams identified within the project area had not been evaluated for their supporting uses.

2.6.1.4 Special Status Streams

The Wild and Scenic Rivers Act of 1968 (as amended) defines a "Wild River" as those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. A "Scenic River" is a river or section of a river that is free of impoundments, with watersheds or shorelines still largely undeveloped but accessible in places by road.

None of the rivers crossed in the project area are officially identified as either "Wild" or "Scenic" by either the federal government or the State of Illinois. However, a segment of the Kankakee River has been listed as eligible for federal Wild and Scenic River designation, and the Kankakee River from the Indiana state line to the confluence at the Illinois River has been proposed for State Wild and Scenic status. Also, the Mackinaw River, from its source to its confluence with the Illinois River, has been proposed for State Wild and Scenic status, and a portion of this area, from the town of Colfax to its confluence with the Illinois River, has been listed as eligible for federal Wild and Scenic River designation. A segment of Salt Creek crosses the HSR project area and is listed as being protected under the Railsplitter State Park governance (Huntington and Echeverria, 1991).

Navigable Waters of the United States are waters administratively defined waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation. Navigable Waters within the project area include the South Branch Chicago River, South Fork of South Branch Chicago River, Calumet Sag Channel, Little Calumet River, Kankakee River, Mackinaw River, Sugar Creek, Salt Creek, Sangamon River, and the Mississippi River. Of the bridges crossing these waters in the HSR project area, two are drawbridges. These are both on the IC Joliet Line at the South Branch Chicago River and the South Fork of South Branch Chicago River.

Illinois Natural Area Inventory (INAI) streams which are crossed in the project area include the Kankakee River, Mackinaw River, and Salt Creek. The Kankakee River is crossed by the Union Pacific Railroad at milepost 52.8 and by the Norfolk Southern Railroad at milepost 101.7 in Kankakee County. The Mackinaw River is crossed by the Union Pacific Railroad at milepost 111.2 in McLean County. Salt Creek is crossed by the Union Pacific Railroad at milepost 158.2 in Logan County.

2.6.2 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. The principal sand-and-gravel aquifers in Illinois are located in alluvial deposits along the major rivers (e.g., the Des Plaines River and Sangamon River in the project area) or in major bedrock valleys (Visocky et al., 1987). Recharge in sand-and-gravel aquifers occurs when water percolates through glacial drift (material deposited by glaciers and glacial streams, IEPA, 1976b). Recharge in bedrock aquifers occurs primarily from vertical leakage of water through the glacial drift and/or overlying formations of bedrock. The deep bedrock aquifers located in northeastern Illinois receive their recharge water from southeastern Wisconsin and from areas west to northwest in Illinois. The Cambrian-Ordovician aquifers in the Chicago region are the principal bedrock water source. However, these deep bedrock aquifers have been overpumped since the late 1950s (Visocky et al., 1987). Within the project area, the principal shallow sand and gravel aquifers in Illinois are found in the counties of Cook, Will, McLean, Logan, and Madison. The principal shallow bedrock aquifers are located in the counties of Cook and Will, while the deep bedrock aquifers lie in the northeastern part of the state, north of Livingston County.

The potential yield of an aquifer is the maximum amount of groundwater that can be continuously withdrawn from a number of wells without causing critically low water levels or surpassing the natural recharge rate (Visocky et al., 1987). Aquifer yields vary from less than 1.7 gps to over 8.3 gps along areas crossed in the project area. Yields from bedrock aquifers are often small (less than 1 gps). The majority of the potential yield from bedrock aquifers is available from the shallow bedrock, primarily dolomites, in the northern third of the state. Wells tapping the dolomites are generally able to provide yields of approximately 100 gpm (IEPA, 1976e). In the central portion of Illinois, the bedrock aquifers are from thin beds of limestone and sandstone of Pennsylvanian Age. In western and southwestern Illinois, the bedrock aquifers are also from limestone and sandstone, but these are formations of Mississippian Age. Groundwater yields from both Mississippian and Pennsylvanian Age rocks are limited. Flow rates are generally less than 20 gpm, and water quality can be poor.

The risk for groundwater contamination through the corridor is low to moderate except where the corridor crosses alluvial deposits where it becomes high (Berg & Kempton, 1984). The 1987 Illinois Groundwater Protection Act was implemented to increase protection of groundwater resources from degradation and prevent difficult and expensive clean-up efforts (IEPA, 1994a, 1995a). The Act allows for the establishment of both regulated groundwater recharge areas and groundwater protection areas. At this time, 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. There are several hundred private well-heads that lie within 60 meters (200 feet) of the project area. However, this distance is the minimum setback for public water supplies and is too restrictive for private wells. All of the private wells are outside of the railroad drainage ditch that should act as adequate confinement for any diesel fuel spills.

Overall groundwater quality in the project area is good. Groundwater quality is dependent in large part on the physical and chemical composition of overlying the geologic materials. Chloride, sodium and sulfate are all usually present in Illinois groundwater. Data compiled by the Illinois Water Survey (Visocky et. al. 1987) for the 12-year period (1971 to 1983) showed chloride concentrations in Illinois groundwater ranged 10 to 25 mg/liter. Sodium and sulfate concentrations ranged 25 to 50 mg/l and 50 to 120 mg/l, respectively. Total dissolved solids (a general measure of all mineral constituents) and calcium and magnesium (generally expressed as "hardness") were highest in shallow bedrock aquifers and lowest in deep bedrock aquifers. Total dissolved solids ranged 425 to 565 mg/l for sand and gravel aquifers. Shallow bedrock aquifers ranged 485 to 600 mg/l, while deep bedrock aquifers ranged 440 to 530 mg/l.

2.6.3 Water Use

For areas along the project area, the primary uses for water include public water supplies, agriculture, industry, and recreation. Non-potable water for agricultural, industrial and recreational uses is derived primarily from surface water, with groundwater supplying typically less than 15 percent of water uses (Fitzgerald et al. 1983, Zuehls 1987, Zuehls et al. 1984). Except for the Greater Chicago Region, which obtains water from Lake Michigan, potable water is primarily drawn from groundwater sources. Groundwater is used for domestic supply, industry, and agriculture (IEPA, 1994a, 1995a). Most wells tapped in sandstone or limestone formations are generally for farm use (IEPA, 1976e).

Along the Des Plaines River within the project area, five industrial water use locations have been identified. The cumulative utilization of river water for these facilities, reduces the 7-day, 10-year low flow by approximately 0.64 cms (22.5 cfs). There are no designated municipal water supply sources for the Des Plaines River (ISWS, 1993). The Kankakee River has one municipal water use facility, reducing the 7-day, 10-year low flow by approximately 0.41 cms (14.5 cfs). Also, one industrial water use source is located on the Kankakee just prior to its confluence with the Des Plaines River. This facility's consumption reduces the 7-day, 10-year low flow by approximately 0.66 cms (23.4 cfs) (ISWS, 1993). Sugar Creek was dammed by the City of Springfield in 1931 to create Lake Springfield. This lake is 1,714 hectares (4,234 acres) and is utilized as a public water supply source, a cooling water source for City Water, Light and Power's generating plant, and as a recreational lake (Tucker and Ettinger, 1975).

2.7 GEOLOGY

2.7.1 Bedrock and Structural Geology

Underlying surface bedrock is generally older in the north, and is mainly Silurian in Cook, Will and Kankakee Counties, with an area of Ordovician origin in western Will County. For most of the remaining length of the project, the bedrock is Pennsylvanian, except for a Mississippian area near the Mississippi River in Madison and St. Clair Counties (INHS, 1987). The precambrian basement rock is at various depths ranging from about 1,100 meters (3,500 feet) at the northern and southern extremes of the project area to 1,500 meters (5,000 feet) or more near the center of the State. Bedrock is not exposed in any large areas along the HSR corridor.

An area of karst topography exists in the vicinity of the town of Alton, near the Mississippi River. Karst areas are characterized by a fractured bedrock surface (in this case, Mississippian limestone) and numerous springs

and sinkholes. Consequently, the risk of groundwater contamination in such areas is "very high" (ISGS, 1999). Karst topographically lies outside the affected environment of this project.

2.7.2 Surface Geology and Topography

The entire project area is located on glacial till deposits associated with Wisconsinian, Woodfordian, Holocene, Altonian or Illinoian glaciers (Schuberth, 1986). Over most of the project area, a layer of loess exists at the surface, ranging from less than one meter (three feet) to greater than 30 meters (100 feet) in thickness (Willman, 1975). Portions of the northern stretch of the project (from Livingston County north) have a substrate of loess interspersed with lake deposits, sand dunes and glacial outwash. An area of alluvial deposition occurs in sections of the project near the Mississippi River (Willman, 1975). Soil erosion is a recognized problem in much of Illinois since 1) loess soils are severely erosion-prone, 2) much of the state is in agricultural tillage, and 3) rainfall is relatively high.

The project passes through, from north to south, the Chicago Lake Plain, the Wheaton Morainal Country, the Kankakee Plain, the Bloomington Ridged Plain, and the Springfield Plain of the Central Lowland physiographic province (INHS, 1987). With the exception of Cook and Will Counties, the project lies within the Till Section of this province, a topographically flat accumulation of glacial soils which historically supported tall prairie grass. Forest was historically restricted to moraines and sloping hillsides adjoining streams and rivers.

2.7.3 Mineral Resources

Mineral resources that exist in the proposed project area include coal, petroleum (crude oil and natural gas), stone (limestone, dolomite, sand and gravel), peat, and clay. Information for this Mineral Resources section is exclusively from the Illinois Natural History Survey (INHS, 1987). Since the project follows existing railways, no new large-scale impacts are expected on mineral resources.

Coal production in Illinois is currently limited to areas where it is near the surface or can be deep-mined economically. However, the Eastern Interior Coal Field extends well beyond the current production region and includes most of the project area from southwest Will County to northwest Madison County. A high potential for surface-minable coal is present in the project area within Madison and extreme southwest Jersey Counties. Large quantities of deep-minable coal are present in the project area in Livingston, Logan, Sangamon, Macoupin and Madison Counties.

Petroleum production as crude oil and natural gas is heaviest in the southeast portion of the State, although the proposed project passes through some of the less productive counties. Crude oil is produced from Sangamon, Macoupin, Madison and St. Clair Counties, and a relatively small amount of natural gas is produced from Madison and St. Clair Counties.

Limestone and dolomite are widely quarried in the northern quarter of the State, along the western edge, and near the southern tip. The stone is mostly used in the crushed and broken form for construction aggregate and road-base. Portland cement and flagstone are other main uses. Sand and gravel, mostly used in construction aggregate, are mined heavily from large deposits in Cook, Will, Kankakee and Livingston counties.

Peat has been produced in all counties the project passes through from Sangamon northward, except Logan County, with quantities not exceeding 1 million tons per year per county in 1984.

Clay production in Illinois fell from over 2 million tons per year in the 1950s to less than 300 thousand tons in 1985. Livingston County is one of the main clay-producing counties in the State, mostly for bricks, portland cement, and concrete. Historically, Grundy County has produced refractory clay, but production has almost completely fallen off in recent years.

2.7.4 Seismic Risk

The ability of seismologists to predict earthquakes as increased greatly over the past few decades, but it is still possible for an earthquake to occur with little advance warning. The most powerful earthquakes in U.S. history occurred in the early 1800s in association with the New Madrid fault in Missouri (Schuberth, 1986), approximately 240 kilometers (150 miles) from the southern terminus of the project. Earthquakes having an intensity of V or greater (on the Modified Mercalli Intensity Scale) and an epicenter in the vicinity of the project area have occurred only in Madison County (Schuberth, 1986).

The corridor is within an area characterized as having no seismic risk in Cook and northern Will Counties, minor risk southward into northern Madison County, and moderate risk in the remainder (Uniform Building Code, 1991). However, depending on the strength of an earthquake, most likely centered in the New Madrid Zone, and the subsurface profile at a given site, locations in the corridor could be susceptible to earthquake damage. A major concern in the corridor would be amplification of earthquake ground motions by alluvial soils in the Alton to St. Louis portion of the project area. The concern here would be for lateral spread damage of embankments and levees since the liquefaction potential of loose sandy materials in the upper part of the valley fill is typical of the American bottoms area of the Mississippi River (Bauer, ISGS personal communication).

2.8 WETLANDS

2.8.1 Wetland Delineations

Wetlands are areas where the vegetation is adapted for life in saturated or shallowly flooded soil conditions. Waters of the U.S. include wetlands and all waters that 1) are currently used, 2) were used in the past, or 3) may be used for interstate or foreign commerce. Waters of the U.S. also include all interstate wetlands including intrastate lakes, streams, mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds (Goode and Pierce, 1990).

Because of the values of wetlands, the historic losses, and the increase in development pressures, wetlands are protected under the Federal Clean Water Act (CWA). The U.S. Army Corps of Engineers (COE), through Section 404 of the CWA, regulates the discharge of dredged/fill materials into waters of the U.S., including wetlands. To be regulated by the COE, a wetland must meet three criteria: 1) contain a dominance of vegetation adapted to growth in low-oxygen soils (i.e., hydrophytic vegetation); 2) have soils that have developed over time in a low oxygen environment (i.e., hydric soils); and 3) hydrology that saturates or inundates the soil for 5 to 12 percent of the vegetative growing season.

For this project, map sources from the Natural Resources Conservation Service (NRCS), U.S. Fish and Wildlife Service (FWS), and the Illinois Natural Heritage Program (INHP) were reviewed prior to field reconnaissance. Map sources included NRCS's swampbuster mapping of wetlands for each county, NRCS's county soil surveys, and FWS's National Wetlands Inventory maps. Because of the scale of resolution and differences in criteria for identifying wetlands from the current COE methodology, these sources only indicate the *potential* for wetlands. However, they provide useful information for locating wetland area on the ground.

Wetland delineation was conducted in all areas of the project area where construction is proposed. Within the construction zones an area the length of the specified activity and 30 meters (100 feet) out from the center track line was surveyed. In those areas designated for service roads, the project area extended to at least 15 meters (50 feet) beyond the edge of right-of-way. Where new stations or grade separations are proposed, the project area included the full footprint of the facility. During the field surveys, wetland investigations were conducted in accordance with methodology approved by the COE for identifying and delineating jurisdictional wetlands (Environmental Laboratory, 1987). In addition, all plant species observed in each wetland were listed on wetland floristic quality assessment forms. The Floristic Quality Assessment (FQA) was used to determine the relative vegetative quality utilizing methodology presented in Swink and Wilhelm (1994).

The distribution of wetlands and other waters of the U.S. within the existing and proposed rights-of-way varies. Such areas are primarily located in railroad drainage ditches and swales. Additional areas that contain waters of the U.S. include naturally occurring topographical low area, seeps and springs, river and creek bottomlands, and excavated channels. The boundary of each wetland was drawn on 1:2400 scale aerial photographs. If the wetland extended outside of the right-of-way or construction limits, the entire wetland boundary was estimated, based on field observation and aerial photograph interpretation. All wetlands observed within 30 meters (100 feet) of the current right-of-way were delineated during the fall 1997 survey. Surveyed wetlands with a floristic quality index (FQI) equal to or greater than 20 were revisited in the spring and summer of 1998 to re-evaluate the wetland and to identify additional plant species to provide a comprehensive, three season, plant list. During the fall survey, 112 wetlands were delineated. Ten wetlands were revisited during the spring and summer surveys.

Currently, the federal government endorses the use of two separate wetland delineation manuals, the 1987 COE Wetlands Delineation Manual and the Food Securities Act Manual. The 1987 COE methodology is used on non-agricultural land, whereas the Food Securities Act methodology is used for wetland delineations on agricultural land. The Food Securities Act methodology involves the use of annual aerial photography, "Swampbuster" maps, and/or field confirmation. This methodology is carried out by representatives of the U.S. Department of Agriculture, Natural Resources Conservation Service. Farmed wetlands were determined using aerial photography, soils mapping and NRCS maps covering those areas of the project where construction activity is proposed. Three additional farmed wetlands were identified that were not delineated using the COE methodology.

2.8.2 Wetland Classification

Wetland communities are distinguished primarily by vegetation type and by the duration of hydrology. Based on the Cowardin Classification (Cowardin et al., 1979), there are three primary categories of waters of the U.S. in the project area: palustrine emergent (PEM), palustrine forested (PFO), and palustrine scrub-shrub (PSS).

The Cowardin Classification system uses a hierarchical system composed of the following categories: systems, subsystems, and classes. The five systems are Marine, Estuarine, Riverine, Lacustrine, and Palustrine. Classes are based on substrate material and flooding regime. The Palustrine system includes wetlands commonly known as marsh, swamp, bog, fen, and prairie, which includes all non-tidal wetlands dominated by trees, shrubs, and persistent emergents (Cowardin et al. 1979). Palustrine emergent communities occur most often in ditches and topographic depressions that hold shallow water throughout much of the growing season. Areas of emergent wetland are typically identified as Palustrine Emergent seasonally flooded/saturated habitats (PEMC or PEME)

Forested wetland occurs in narrow bands associated with rivers and streams and topographically low areas. Cowardin et al. (1979) typically identify this community as a Palustrine Forested Broad-leaved Deciduous habitat with temporary to seasonal flooding (PFO1A and PFO1C).

The unconsolidated bottom community (PUB) is characterized by having at least 25 percent cover of particles smaller than stones, and a vegetative cover of less than 30 percent (Cowardin et al., 1979). This community is typically a pond, borrow pit, or other small open water area.

Shrubs, young trees, and trees or shrubs that are small or have been stunted due to environmental conditions are all likely species to occur in a scrub-shrub wetland (Cowardin et al. 1979). This community would most likely be identified by Cowardin et al. (1979) as Palustrine Scrub-shrub Broad-leaved Deciduous habitat with temporary to seasonal flooding (PSS1A and PSS1C).

2.8.3 Wetlands Within the Project Area

During the field surveys, all areas within the high-speed rail project area proposed for construction activity were evaluated for the potential presence of wetlands. Figures 2.8-1A through 2.8-1C illustrate the general location of wetlands by alignment. Table 2.8-1 summarizes existing wetlands in the project area.

Table 2.8-2 presents wetlands by alignment and classification, reporting only the existing wetland hectares (acres) that occur within 30 meters (100 feet) from either side of the track. While conducting the field surveys, if a significant portion of an existing wetland crossed the impact zone for a proposed service road, then a no build alternative was assumed practicable for that project. Therefore, no impacts would occur within that proposed service road area, and subsequently, no data was collected for the wetland that would preclude development or for additional biological resources encountered within that service road area. Because no data was collected for some of the wetland areas and they are not indicated on the National Wetland Inventory (NWI) maps, the wetlands cannot be classified. Therefore, these wetlands are categorized as non-inventoried (N/I).

Table 2.8-2
EXISTING WETLANDS BY COWARDIN CLASSIFICATION

	WETLANDS hectares (acres)					
ALIGNMENT	PEM	PSS	PFO	PUB	N/I	TOTAL
IC/UP	7.19 (17.75)	0.50 (1.24)	0.42 (1.03)	1.28 (3.16)	0.13 (0.33)	9.52 (23.51)
Norfolk Southern	17.17 (42.42)	0.98 (2.42)	0.55 (1.36)	1.28 (3.16)	9.08 (22.43)	29.06 (71.79)
Rock Island	6.99 (17.27)	0.06 (0.15)	0.42 (1.03)	1.28 (3.16)	0.13 (0.33)	8.88 (21.94)

Source: Planning Resources Inc., February 2000.

Overall, 112 wetlands were identified within the HSR project area. Ten wetlands were determined to be high quality based on the criteria of having an FQI near or greater than 20.00. The general distribution and classification of wetlands per alignment is as follows:

IC/UP Alignment

- 38 Wetlands
- 16.19 hectares (39.99 acres)
- Four wetlands with an FQI greater than 20.00

Norfolk Southern Alignment

- 80+ Wetlands
- 51.09 hectares (126.19 acres)
- Six wetlands with an FQI greater than 20.00

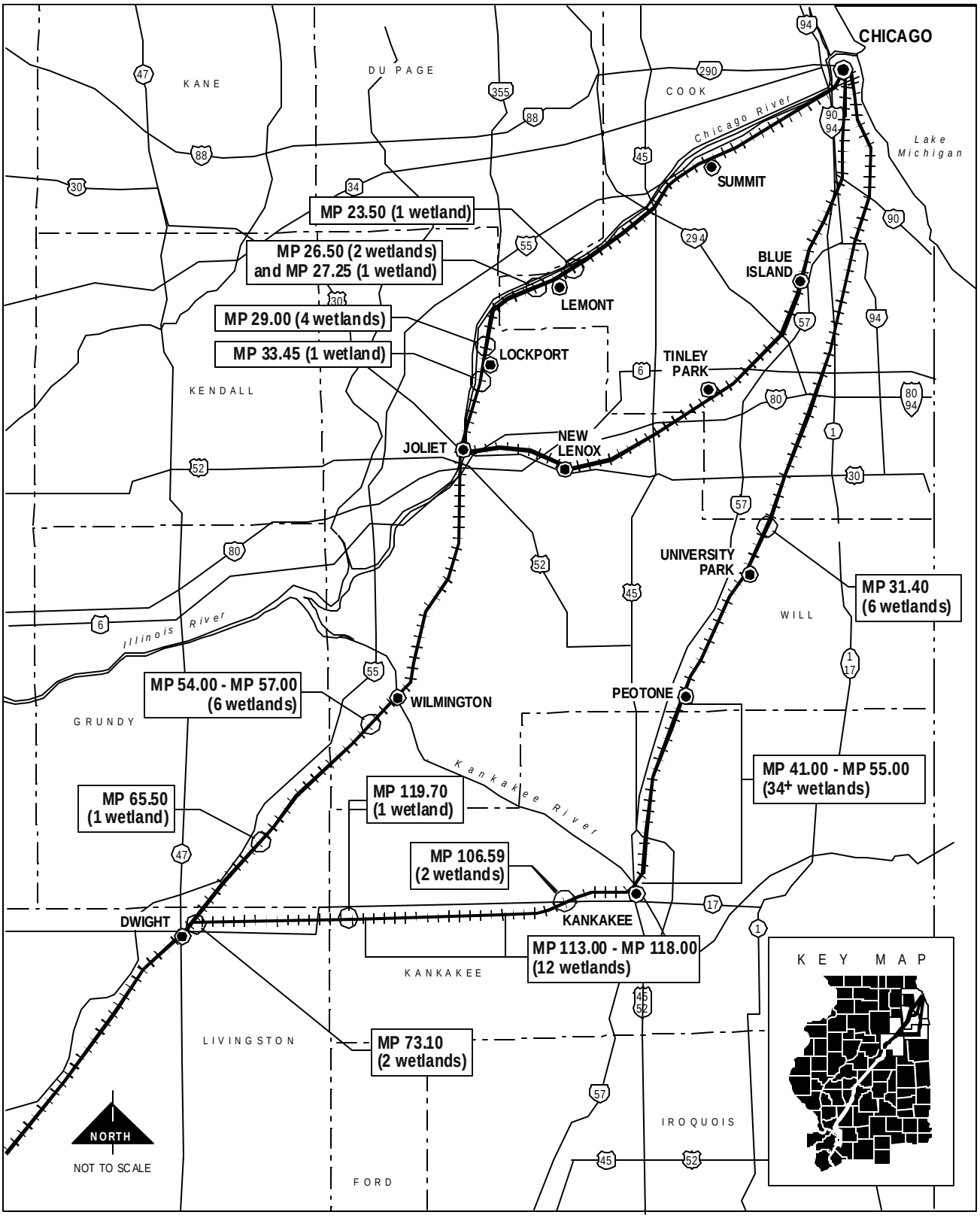


FIGURE 2.8-1A
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
WETLAND LOCATIONS
(Chicago to Pontiac)

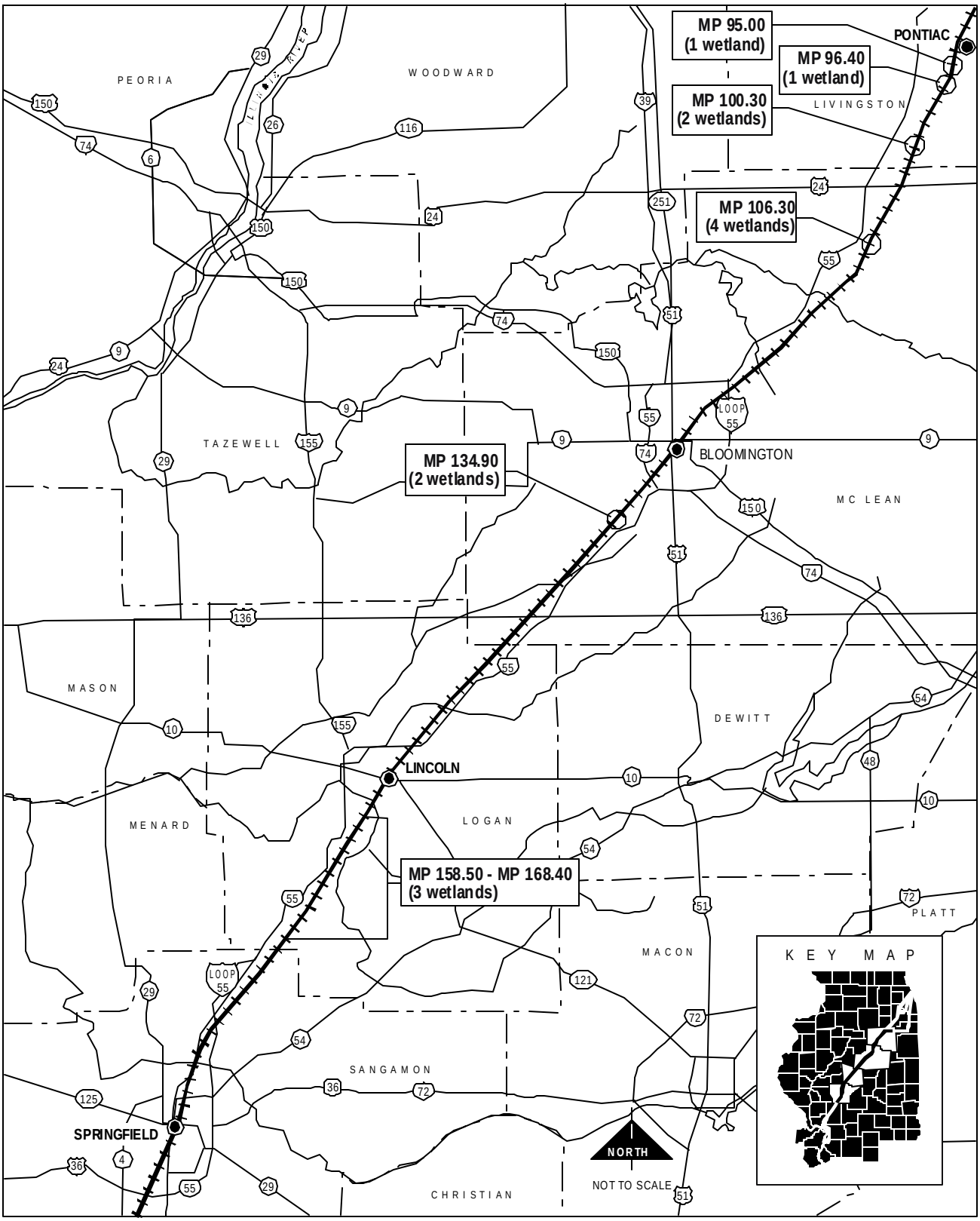


FIGURE 2.8-1B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
WETLAND LOCATIONS
(Pontiac to Springfield)

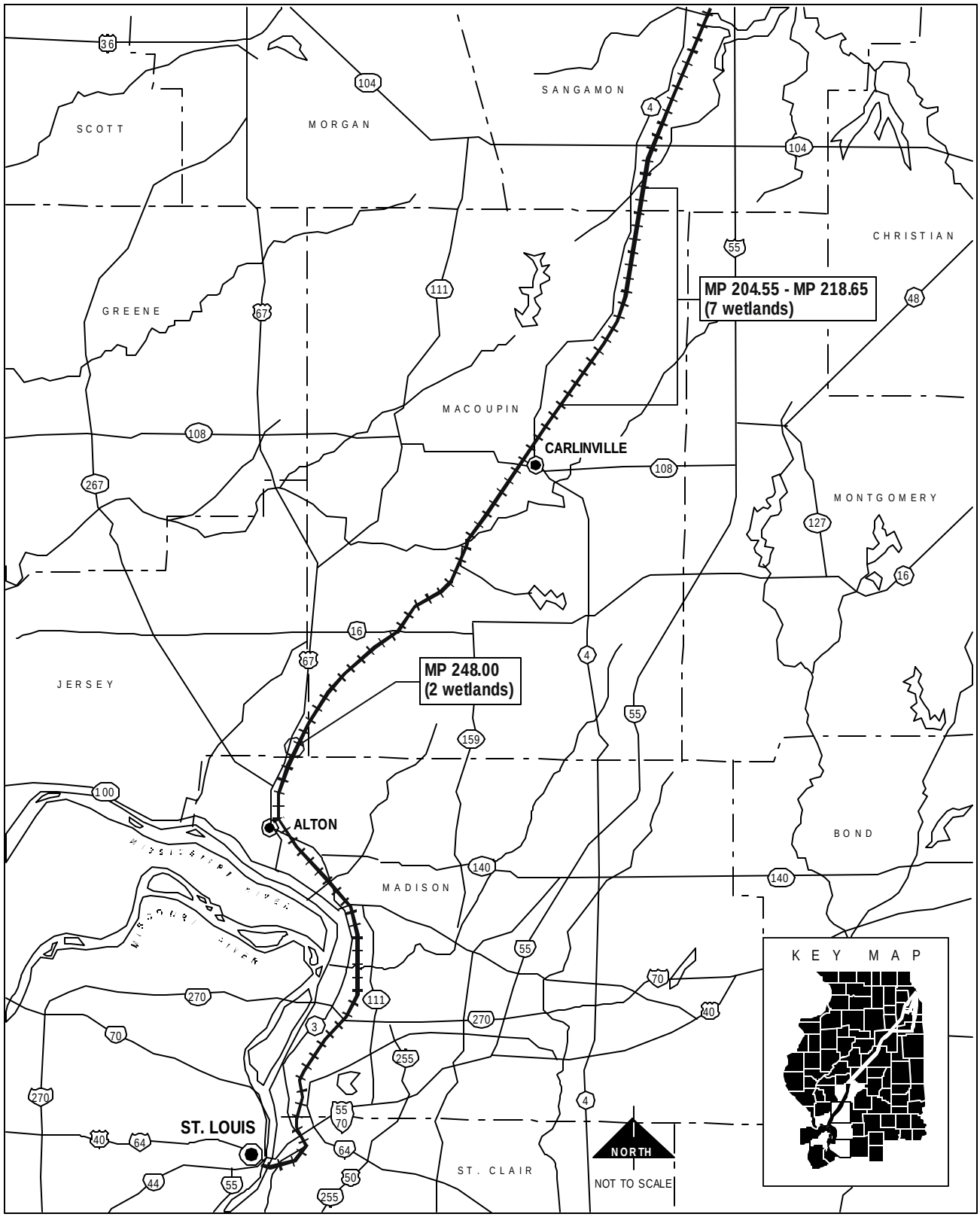


FIGURE 2.8-1C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
WETLAND LOCATIONS
(Springfield to St. Louis)

Table 2.8-1
EXISTING WETLANDS

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
IC/UP Alignment North (IC-Joliet Line - Chicago to Joliet)											
23.50	A	Chicago	Marsh	Reed canary grass, barnyard grass	Romeo silt loam	0.02	(0.06)	PEM	8.95	33.3	
26.50	A	Chicago	Wet meadow	Prairie cord grass, great bulrush, cattail	Made land	0.28	(0.70)	PEM	7.54	21.4	
	B	Chicago	Marsh	Cattail	Made land	0.28	(0.69)	PEM	11.24	17.4	
27.25	A	Chicago	Wet meadow	Cattail, prairie cord grass, black willow	Made land	0.05	(0.13)	PEM	6.43	41.7	
29.00	A	Chicago	Marsh	Cattail, prairie cord grass, reed canary grass	Joliet silt loam	0.48	(1.18)	PEM	10.85	8.3	American bittern potential habitat
	B	Chicago	Marsh	Cattail	Made land	0.04	(0.09)	PEM	5.37	37.5	
	C	Chicago	Marsh	Reed canary grass, orange jewel weed	Made land	0.02	(0.04)	PEM	9.62	33.3	
	D	Chicago	Wet meadow	Purple loosestrife, tall scouring rush, common reed	Made land	0.02	(0.06)	PEM	7.42	42.9	
33.45	A	Chicago	Wet meadow	Silver maple, common beggar's ticks, small duckweed, reed canary grass	Romeo silt loam	0.02	(0.04)	PEM	6.26	16.7	
					Total Size:	1.21	(2.99)				
IC/UP Alignment Central (Union Pacific - Joliet to Dwight)											
54.00-57.00	D	Chicago	Wet meadow	Prairie cord grass	Drummer silty clay loam	0.13	(0.31)	PEM	33.20	1.8	FQI>20; Red-veined leaf hopper potential habitat
	F	Chicago	Marsh	Common tussock sedge, water heartease, common reed	Gilford fine sandy loam	0.49	(1.22)	PEM	11.49	12.5	
	J	Chicago	Marsh	Cattail, prairie cord grass, marsh marigold	Ridgeville fine sandy loam	3.03	(7.48)	PEM	32.91	14.3	FQI>20; Larger than 5 acres; Red-veined leaf hopper potential habitat

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
	K	Chicago	Wet meadow	Prairie cord grass	Ridgeville fine sandy loam	0.39	(0.96)	PEM	33.20	1.8	FQI>20; Eryngium stem borer identified
	L	Chicago	Marsh	Common tussock sedge, water heartease, common reed	Ridgeville fine sandy loam	0.45	(1.12)	PEM	11.49	12.5	
	M	Chicago	Wet meadow	Prairie cord grass	Ridgeville fine sandy loam	0.01	(0.03)	PEM	33.20	1.8	FQI>20
65.50	A	Rock Island	Marsh	Giant ragweed, Indian hemp, pinkweed, cocklebur	Reddick silty clay loam	0.02	(0.04)	PEM	2.31	25.0	
					Total Size:	4.52	(11.16)				
Norfolk Southern Alignment (IC Mainline - Chicago to Kankakee)											
31.40	A	Chicago	Wet meadow /marsh	Reed canary grass, duckweed, water knotweed, chufa, eastern cottonwood	Frankfort silty clay loam	0.78	(1.92)	PEM*	11.26	31.1	
	B	Chicago	Wet meadow	Switch grass, barnyard grass, rice cut grass, tall scouring rush, giant foxtail, cattail, horseweed	Bryce silty clay	0.05	(0.12)	PEM	8.75	20.0	
	C	Chicago	Marsh	Water horehound, cattail, spiderwort	Frankfort silty clay loam	0.15	(0.36)	PEM*	4.08	25.0	
	D	Chicago	Wet meadow	Switch grass, prairie cord grass, field thistle, common cinquefoil	Frankfort silty clay loam	0.08	(0.20)	PEM*	9.55	25.0	
	E	Chicago	Wet meadow	Squirrel-tail grass, great bulrush, redtop, slender wheat grass, curly dock, water	Frankfort silty clay loam	0.02	(0.04)	PEM*	9.05	26.7	
	F	Chicago	Marsh	Cattail, old witch grass, fireweed	Bryce silty clay	0.24	(0.59)	PEM	11.70	17.4	

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
41.00-55.00	A	Chicago	Sedge meadow	Common tussock sedge, pinkweed, sawtooth sunflower	Ashkum silty clay loam	0.12	(0.29)	PEM	15.43	16.7	
	B	Chicago	Scrub-shrub	Sandbar willow, prairie cord grass, Bebb's oval sedge, blue joint grass	Ashkum silty clay loam	0.14	(0.34)	PEM/PSS*	23.20	7.3	FQI>20
	C	Chicago	Wet meadow	Giant ragweed, monkey flower, redtop, rice cut grass, reed canary grass, black willow, satin grass	Ashkum silty clay loam	0.18	(0.44)	PEM	18.45	15.4	
	D	Chicago	Wet meadow	Bebb's oval sedge, redtop, sawtooth sawflower, reed canary grass	Elliot silt loam	0.09	(0.23)	PEM	7.54	10.0	
	E	Chicago	Wet meadow	Blue-fruited dogwood, redtop, spike rush, Torrey's rush	Elliot silt loam	0.05	(0.13)	PEM	8.88	13.3	
	F	Chicago	Wet meadow	Prairie cord grass, cattail, lake sedge	Elliot silt loam	0.06	(0.16)	PEM	11.51	12.0	
	G	Chicago	Wet meadow	Prairie cord grass, mild water pepper	Ashkum silty clay loam	0.24	(0.59)	PEM	16.89	13.2	
	H	Chicago	Wet meadow	Common mountain mint, prairie cord grass, redtop, beggar's ticks	Ashkum silty clay loam	0.06	(0.14)	PEM	28.71	11.8	FQI>20
	I	Chicago	Wet meadow	Prairie cord grass, redtop, beggar's ticks	Ashkum silty clay loam	0.04	(0.09)	PEM	13.68	11.1	
	J	Chicago	Wet meadow	Prairie cord grass, sawtooth sunflower, common tussock sedge, three-seeded mercury, slippery elm, water horehound	Ashkum silty clay loam	0.57	(1.40)	PEM	37.62	8.4	FQI>20

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
	K	Chicago	Wet meadow	Prairie cord grass, switch grass, big bluestem, prairie dock	Varna silt loam	0.07	(0.17)	PEM	13.36	12.5	
	L	Chicago	Marsh	Prairie cord grass, cattail, Indian hemp, sawtooth sunflower, blue joint grass	Ashkum silty clay loam	0.47	(1.16)	PEM	12.75	23.8	
	M	Chicago	Sedge meadow	Common tussock sedge, prairie cord grass, giant ragweed, sawtooth sunflower	Ashkum silty clay loam	0.21	(0.51)	PEM	14.00	0.0	
	N	Chicago	Scrub-shrub	Cattail, sandbar willow, sawtooth sunflower, common tussock sedge, redtop	Andres silt loam	0.41	(1.02)	PEM	19.70	7.1	FQI>20
	O	Chicago	Wet meadow	Sandbar willow, giant ragweed, prairie cord grass, satin grass	Selma loam	0.64	(1.57)	PEM/PSS*	15.98	18.4	
	P	Rock Island	Wet meadow	Prairie cord grass, common tussock sedge	Selma loam	0.37	(0.91)	PEM	11.36	11.8	
	Q	Rock Island	Forested	Eastern cottonwood, prairie cord grass, common tussock sedge, green ash	Ashkum silty clay loam	0.27	(0.67)	PEM/PFO	11.30	0.0	
	R	Rock Island	Scrub-shrub	Sandbar willow, green ash, sawtooth sunflower, common tussock sedge, false sunflower	Elliot silt loam	0.24	(0.59)	PEM/PSS	8.44	0.0	
	S	Rock Island	Wet meadow	Common reed, sandbar willow, sedge, sawtooth sunflower	Ashkum silty clay loam	0.07	(0.17)	PEM/PSS	14.53	0.0	

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
	T	Rock Island	Wet meadow	Eastern cottonwood, cattail, common tussock sedge, prairie cord grass, switch grass	Ashkum silty clay loam	0.17	(0.43)	PEM	13.82	5.6	
	U	Rock Island	Scrub-shrub/ Forested	Common tussock sedge, sandbar willow	Ashkum silty clay loam	0.58	(1.44)	PEM/PSS	17.55	16.4	
	W	Rock Island	Wet meadow	Prairie cord grass, heath aster, wild bergamot, tall goldenrod, New England aster	Selma loam	0.06	(0.14)	PEM	7.23	25.0	
	X	Rock Island	Sedge meadow	Common tussock sedge, Virginia wild rye, sawtooth sunflower, prairie Indian hemp	Selma loam	0.01	(0.02)	PEM	11.26	7.7	
	Y	Rock Island	Marsh	Cattail, bittersweet nightshade, reed canary grass	Beecher silt loam	0.87	(2.16)	PEM	14.30	14.0	
	Z	Rock Island	Scrub-shrub	Giant ragweed, sandbar willow, chufa	Milford silty clay loam	0.20	(0.49)	PEM/PSS	11.77	7.1	
	AA	Rock Island	Wet meadow	Prairie cord grass, sawtooth sunflower, hairy white vervain, beggar's ticks, wild strawberry	Beecher silt loam	0.10	(0.24)	PEM	9.38	25.8	
	BB	Rock Island	Wet meadow	Cattail, brown fox sedge, crested oval sedge	Beecher silt loam	0.03	(0.07)	PEM	6.05	36.4	
	CC	Rock Island	Marsh	Sandbar willow, cattail, reed canary grass	Ashkum silty clay loam	0.12	(0.30)	PEM/PSS	9.66	14.3	
	DD	Rock Island	Scrub-shrub	Sandbar willow, reed canary grass	Milford silty clay loam	0.63	(1.56)	PEM/PSS	7.92	11.5	

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect.	Size (acres)	NWI Classification[1]	FQI	Percent Adventive	Functional Values
	EE	Rock Island	Wet meadow	Cattail, crested oval sedge, long-scaled nut sedge, switch grass	Beecher silt loam	0.02	(0.04)	PEM	3.40	36.4	
	FF	Rock Island	Scrub-shrub	Eastern cottonwood, spike rush, sandbar willow, blue vervain	Beecher silt loam	0.75	(1.86)	PEM	27.78	16.9	FQI>20
	GG	Rock Island	Marsh	Cattail	Beecher silt loam	2.33	(5.75)	PEM*	25.50	21.0	FQI>20; Larger than 5 acres
	HH	Rock Island	Farmed wetland		Ashkum silty clay loam	0.16	(0.39)	N/I			
	Unlabeled East Side Wetlands					5.37	(13.27)				
55.00	A	Rock Island	Wet meadow	Giant ragweed, chufa, beggar's ticks	Rockton silt loam	0.02	(0.04)	PEM	4.91	25.0	
Norfolk Southern Alignment (Norfolk Southern - Kankakee to Dwight)											
106.59	A	Rock Island	Forested	Silver maple, reed canary grass	Gilford fine sandy loam	15.54	(38.38)	PFO*	6.26	16.7	Larger than 5 acres
	B	Rock Island	Farmed wetland		Gilford fine sandy loam	0.09	(0.21)	N/I			
113.00-118.00	B	Rock Island	Wet meadow	Giant ragweed, reed canary grass	Sawmill silty clay loam	1.13	(2.80)	PEM*	1.15	50.0	
	C	Rock Island	Wet meadow	Giant ragweed, reed canary grass	Gilford fine sandy loam	0.20	(0.50)	PEM	4.49	0.0	
	D	Rock Island	Wet meadow	Prairie cord grass, giant ragweed, green foxtail	Reddick clay loam	0.21	(0.51)	PEM	3.46	0.0	
	E	Rock Island	Wet meadow	Silver maple, giant ragweed	Gilford fine sandy loam	0.33	(0.82)	PEM	2.89	40.0	
	F	Rock Island	Wet meadow	Eastern cottonwood, giant ragweed, reed canary grass	Gilford fine sandy loam	0.08	(0.20)	PEM	4.50	20.0	

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
	G	Rock Island	Wet meadow	Giant ragweed, reed canary grass	Sawmill silty clay loam	1.04	(2.57)	PEM*	10.25	15.4	
	I	Rock Island	Wet meadow	Giant ragweed	Reddick clay loam	1.98	(4.90)	PEM	**	**	
	J	Rock Island	Wet meadow	Prairie cord grass, sawtooth sunflower	Gilford fine sandy loam	0.24	(0.60)	PEM	15.00	13.8	
	K	Rock Island	Wet meadow	Giant ragweed, prairie cord grass	Reddick clay loam	0.43	(1.06)	PEM*	4.91	12.5	
	M	Rock Island	Wet meadow	Reed canary grass, prairie cord grass, sawtooth sunflower	Reddick clay loam	0.73	(1.80)	PEM*	4.24	33.3	
	Q	Rock Island	Wet meadow	Prairie cord grass, sawtooth sunflower	Reddick clay loam	0.07	(0.17)	PEM	15.00	13.8	
	R	Rock Island	Wet meadow	Prairie cord grass, sawtooth sunflower	Hoopeston fine sandy loam	0.03	(0.07)	PEM	15.00	13.8	
119.70	A	Rock Island	Marsh	Reed canary grass, sandbar willow	Reddick clay loam	0.35	(0.86)	PEM	**	**	
73.10	A	Rock Island	Wet meadow	Boxelder maple, brome grass	Ashkum silty clay loam	0.98	(2.43)	PEM*	9.67	23.1	
	B	Rock Island	Wet meadow	Boxelder maple, brome grass	Ashkum silty clay loam	0.19	(0.46)	PEM	9.67	23.1	
					Total Size:	40.63	(100.35)				
IC/UP Alignment South (Union Pacific - Dwight to St. Louis)											
95.00	A	Rock Island	Wet meadow	Prairie cord grass, switch grass, grass-leaved goldenrod	Westland clay loam	0.02	(0.06)	PEM	14.45	9.5	
96.40	A	Rock Island	Farmed wetland		Peotone silty clay loam	0.13	(0.33)	N/I			

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect. (acres)		NWI Classification[1]	FQI	Percent Adventive	Functional Values
100.30	A	Rock Island	Wet meadow	Prairie cord grass, three-seeded mercury, english plantain, pink milkwort, flowering wintergreen, pale dock, common groundsel, small bur reed, sedge	Ashkum silty clay loam	0.06	(0.14)	PEM	3.13	37.5	
	B	Rock Island	Wet meadow	Prairie cord grass, giant ragweed, Queen Anne's lace, sawtooth	Ashkum silty clay loam	0.04	(0.09)	PEM	3.13	16.7	
106.30	A	Rock Island	Marsh	Cattail, tall beggar's ticks, prairie cord grass, northern rough avens, giant ragweed	Ashkum silty clay loam	0.02	(0.06)	PEM	3.13	37.5	
	B	Rock Island	Wet meadow	Prairie cord grass, giant ragweed, tall beggar's ticks	Ashkum silty clay loam	0.01	(0.03)	PEM	2.31	0.0	
	C	Rock Island	Wet meadow	Cattail, sawtooth sunflower, prairie cord grass, prairie dock, giant ragweed, tall beggar's ticks	Ashkum silty clay loam	0.02	(0.04)	PEM	4.49	0.0	
	D	Rock Island	Wet meadow	Prairie cord grass, tall beggar's ticks, giant ragweed, pink milkwort	Chenoa silt loam	0.02	(0.06)	PEM	2.00	0.0	
134.90	A	Rock Island	Marsh	Common ironweed, reed canary grass, sawtooth sunflower, cattail, cup plant	Catlin silt loam	0.18	(0.44)	PEM	6.96	23.1	
	B	Rock Island	Marsh	Cattail, tall beggar's ticks, barnyard grass, long-scaled nut sedge, pink milkwort	Tama silt loam	0.01	(0.02)	PEM	1.06	20.0	

Milepost	Wetland	COE District	Plant Community	Dominant Vegetation	Soil Type	Size hect.	Size (acres)	NWI Classification[1]	FQI	Percent Adventive	Functional Values
158.50-168.40	A	Rock Island	Marsh	Duckweed, reed canary grass, three-seeded mercury, false nettle	Sawmill silt loam	0.02	(0.04)	PEM	3.46	40.0	
	B	Rock Island	Scrub-shrub	Giant ragweed, sandbar willow, water hemlock	Sable silty clay loam	0.06	(0.14)	PSS	6.12	14.3	
	C	Rock Island	Scrub-shrub	Sedge, black willow, slender wedge grass	Sable silty clay loam	0.01	(0.03)	PEM/PSS	8.95	0.0	
204.55-210.60	A	St. Louis	Marsh	Cattail, sedge	Virden silty clay	0.83	(2.06)	PEM	8.52	11.8	
	B	St. Louis	Marsh/ forested		Virden silty clay	6.93	(17.12)	PEM*			Larger than 5 acres
212.55-218.65	A	St. Louis	Forested	Eastern cottonwood, black willow, prairie cord grass	Virden silty clay	0.23	(0.57)	PFO*	9.18	26.9	
	B	St. Louis	Marsh	Cattail, cocklebur, prairie cord grass, long-scaled nut sedge, giant foxtail, sow thistle	Virden silty clay	0.39	(0.97)	PEM*	4.04	25.0	
	C	St. Louis	Scrub-shrub	Cocklebur, black willow	Virden silty clay	0.10	(0.24)	PSS*	**		
	D	St. Louis	Scrub-shrub	Black willow, prairie cord grass	Virden silty clay	0.49	(1.22)	PSS*	4.08	14.3	
	E	St. Louis			Dumps; mines	0.77	(1.89)	PEM*			
248.00	A	St. Louis	Marsh	Cattail, long-scaled nut sedge, giant ragweed, tall goldenrod, garden sunflower, pink milkwort	Clinton silt loam	0.08	(0.19)	PEM	4.00	25.0	
	B	St. Louis	Marsh	Cattail, pink milkwort, pinkweed	Clinton silt loam	0.04	(0.10)	PEM	4.00	18.2	
					Total Size:	10.46	(25.84)				

Source: Planning Resources Inc., February 2000.

1 - Wetland classifications are based on Cowardin et. al. 1979. *Wetland location also noted on NWI Maps

Rock Island District Alignment

- 29 Wetlands
- 14.98 hectares (37.00 acres)
- Four wetlands with an FQI greater than 20.00

2.8.4 High Quality Wetlands

The following section discusses individual wetlands occurring within the proposed impact area that are of exceptionally high quality or functional value. All wetlands included here have one or more of the following characteristics:

1) Total wetland area (including off-site sections) is greater than or equal to 2.0 hectares (5.0 acres);
2) The Floristic Quality Index is greater than or equal to 20;
3) Known or potential habitat for an State-listed Threatened or Endangered species has been noted by the Illinois Department of Natural Resources; and
4) The wetland is listed as an Illinois Natural Areas Inventory site by the Illinois Department of Natural Resources.

Wetland 54.00 D:

This wetland is a wet meadow community that is dominated by prairie cord grass (*Spartina pectinata*). It is 0.13 hectares (0.31 acres) in size. The mapped soil type is Drummer silty clay loam, which is listed locally and nationally as a hydric soil. The NWI does not indicate the presence of a wetland at this location. The FQI of the wetland is 33.20, and the species composition is 1.8 percent adventive. This wetland has potential habitat for the red-veined leaf hopper based on the presence of prairie dropseed (*Sporobolis heterolepis*) (Glass, 1998).

Wetland 54.00 J:

This wetland is a marsh community that is dominated by cattails (*Typha* spp.), prairie cord grass, and marsh marigold (*Caltha palustris*). It is 3.03 hectares (7.48 acres) in size. The mapped soil type is Ridgeville fine sandy loam, which is not listed as a hydric soil but may contain hydric soil inclusions. The NWI does not indicate the presence of a wetland in this location. The FQI of the wetland is 32.91, and the species composition is 14.3 percent adventive. Wetland 54.00 J has potential habitat for the red-veined leaf hopper based on the presence of prairie dropseed (Glass, 1998).

Wetland 54.00 K:

This wetland is a wet meadow community that is dominated by prairie cord grass. It is 0.39 hectares (0.96 acres) in size. The mapped soil type is Ridgeville fine sandy loam, which is not listed as a hydric soil but may contain hydric soil inclusions. The NWI does not indicate the presence of a wetland in this location. The FQI of the wetland is 33.20, and the species composition is 1.8 percent adventive. Wetland 54.00 K is a known habitation site for the Eryngium stem borer (IDOT, 1999).

Wetland 54.00 M:

This wetland is a wet meadow community that is dominated by prairie cord grass. It is 0.01 hectares (0.03 acres) in size. The mapped soil type is Ridgeville fine sandy loam, which is not listed as a hydric soil but may contain hydric soil inclusions. The NWI does not indicate the presence of a wetland in this location. The FQI of the wetland is 33.20, and the species composition is 1.8 percent adventive.

Wetland 41.00 B:

This wetland is a scrub-shrub plant community that is dominated by sandbar willow (*Salix interior*, also commonly known as *S. exigua*), prairie cord grass, Bebb's oval sedge (*Carex bebbii*) and blue joint grass (*Calamagrostis canadensis*). It is 0.14 hectares (0.34 acres) in size. The mapped soil type is Ashkum silty clay loam, which is listed locally and nationally as a hydric soil. The NWI indicates the presence of a palustrine, emergent, temporarily flooded, farmed (PEMAf) wetland in this location. The FQI of the wetland is 23.20, and the species composition is 7.3 percent adventive.

Wetland 41.00 H:

This wetland is a wet meadow community that is dominated by common mountain mint (*Pycnanthemum virginianum*), prairie cord grass, redtop (*Agrostis alba*), and common beggar's ticks (*Bidens frondosa*). It is 0.06 hectares (0.14 acres) in size. The mapped soil type is Ashkum silty clay loam, which is listed locally and nationally as a hydric soil. The NWI does not indicate the presence of a wetland in this location. The FQI of the wetland is 28.71, and the species composition is 11.8 percent adventive.

Wetland 41.00 J:

This wetland is a wet meadow community that is dominated by prairie cord grass, sawtooth sunflower (*Helianthus grosseserratus*), common tussock sedge (*Carex stricta*), three-seeded mercury (*Acalypha rhomboidea*), slippery elm (*Ulmus rubra*) and common water horehound (*Lycopus americanus*). It is 0.57 hectares (1.40 acres) in size. The mapped soil type is Ashkum silty clay loam, which is listed locally and nationally as a hydric soil. The NWI does not indicate the presence of a wetland in this location. The FQI of this high quality wetland is 37.62, and the species composition is 8.4 percent adventive.

Wetland 41.00 N:

This wetland is a scrub-shrub community that is dominated by cattail, sandbar willow, sawtooth sunflower, common tussock sedge, and redtop. This wetland is 0.41 hectares (1.02 acres) in size. The mapped soil type is Andres silt loam, which is not listed locally or nationally as a hydric soil. The NWI does not indicate the presence of a wetland at this location. The FQI of this wetland is 19.70, and the species composition is 7.1 percent adventive.

Wetland 41.00 FF:

This is a scrub-shrub community that is dominated by eastern cottonwood (*Populus deltoides*), flat-stemmed spike rush (*Eleocharis compressa*), sandbar willow and blue vervain (*Verbena hastata*). It is 0.75 hectares (1.86 acres) in size. The mapped soil type is Beecher silt loam, which is not listed as a hydric soil but may

contain hydric soil inclusions. The NWI does not indicate the presence of a wetland in this location. The FQI of the wetland is 27.78, and the species composition is 16.9 percent adventive.

Wetland 41.00 GG:

This wetland is a marsh community that is dominated by narrow-leaved cattails (*Typha angustifolia*). It is 2.33 hectares (5.75 acres) in size. The mapped soil type is Beecher silt loam, which is not listed as a hydric soil but may contain hydric soil inclusions. The NWI indicates the presence of a palustrine, emergent, seasonally flooded (PEMC) wetland in this location. The FQI of the wetland is 25.5, and the species composition is 21 percent adventive.

2.9 NATURAL RESOURCES

2.9.1 Upland Vegetation

The project area intersects five of the Illinois's fourteen natural divisions (Figure 2.9-1) (Schwegman, 1973). These divisions are based on geological character (i.e., bedrock, glacial history, topography, and soils) as well as wildlife use and types of plants. The *Northeastern Morainal Division*'s rough topography and farmland soils are derived from recent glacial activity. Tracts of farmland dominate the *Grand Prairie* and the *Western Forest-Prairie Divisions*. Groves and forests and remnant tallgrass prairie communities are interspersed among the agricultural land. River bluffs, limestone cliffs, and rugged terrain occur in the *Middle Mississippi Border Division*. The *Lower Mississippi River Bottomlands Division* occurs on alluvium and is densely forested except in areas cleared for urban sites and agriculture.

Within the various natural divisions traversed by the project area, there are seven general upland vegetation communities. These are forest, shrubland, hedgerow, grassland, forbland, agricultural land, and developed land. Vegetation communities were identified using aerial photography, literature from the Illinois Department of Natural Resources and Illinois Natural Heritage Program, and field surveys. Field investigations focused on areas where new impact will occur. Table 2.9-1 summarizes the magnitude of the general communities within and adjacent to the project area. A discussion of upland plant communities follows. A discussion of project area wetlands is included in Section 2.8.

Forest:

Forested areas are dominated by tree species and have canopy coverage of 80 percent or greater. Prior to settlement, approximately 5.6 million hectares (13.8 million acres) (39 percent) of Illinois was forested (Iverson and Perry, 1985). Currently, only 1.6 million hectares (4 million acres) (29 percent) of forested land remains. Two types of forest communities, upland and wetland, occur along the project area. For more information on forested wetlands see Section 2.8.

Trees found in upland forests vary based on the degree of soil moisture. Dry-mesic soils typically support bur oak, white oak, shingle oak, and hickories. Typical understory shrub species include dogwood and black haw. Tree canopy closure is somewhat more open than in forests occurring on mesic soils. Mesic soils support relatively dense stands of sugar maple, basswood, red oak, white ash, slippery elm, and American elm. Typical shrub associates include highbush cranberry and red elder.

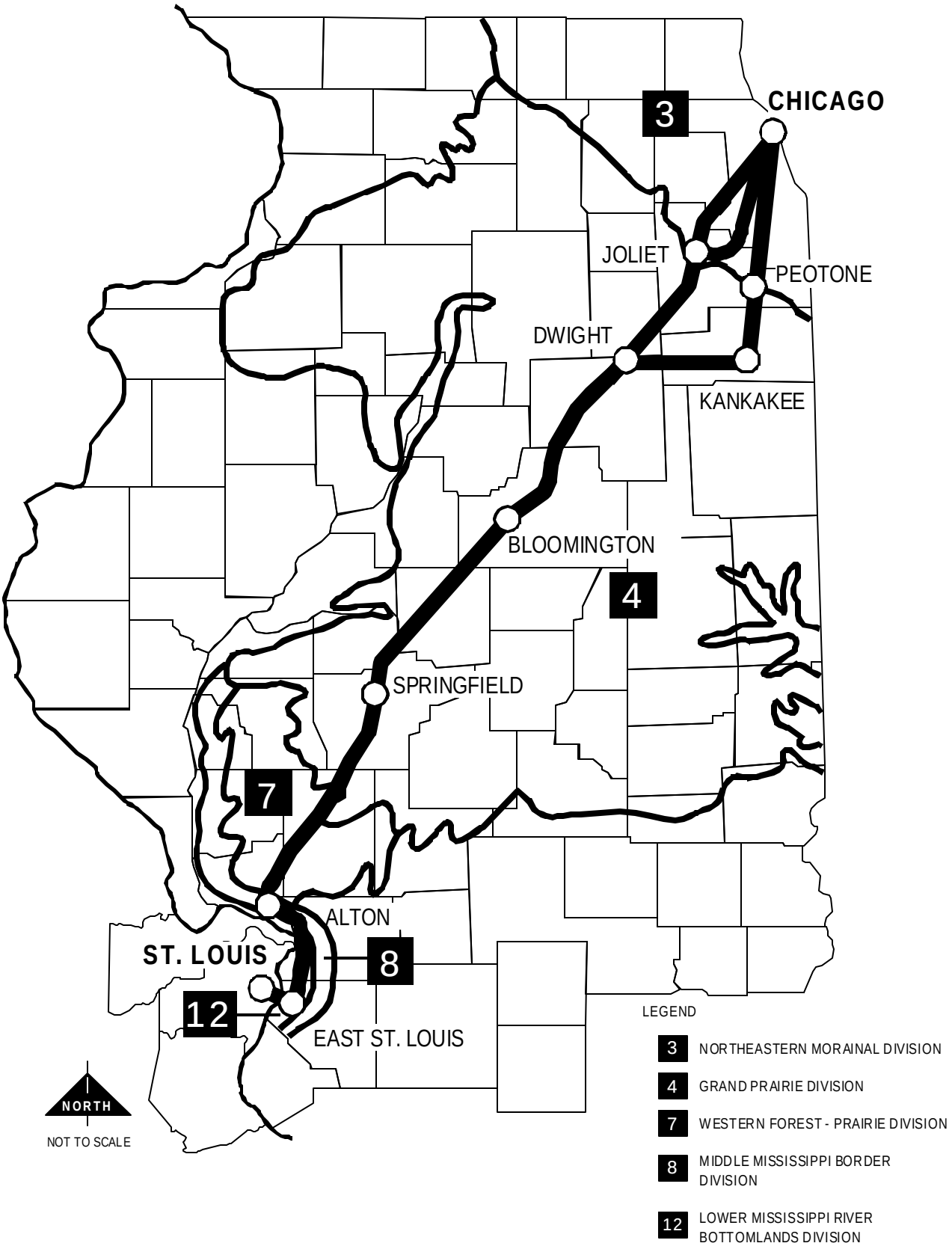


FIGURE 2.9-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
NATURAL DIVISIONS OF ILLINOIS

Table 2.9-1
UPLAND VEGETATION COMMUNITIES IN THE PROJECT AREA

Vegetation Communities	Est. Percent
Forest	3
Shrubland	6
Hedgerow	6
Grassland	15
Forbland	25
Agricultural Land	22
Developed Land	23

Source: Planning Resources Inc., August 1999.

Savannas are vegetation communities with a grass understory and a tree overstory canopy between 10 and 80 percent. This community typically occurs as a transition area between grasslands and forest lands or as "islands" in prairie or forest areas. Often, areas of savanna are used as pastureland for livestock. Bur oak and white oak are the most characteristic tree species of savannas. Other trees include post oak, shingle oak, and black oak. Understory species include little bluestem, Indiangrass, and porcupine grass, as well as non-native forage grasses.

Shrubland:

Shrubland areas typically have an understory of forbland or non-native grassland, but there is at least 25 percent cover by shrubs and scattered trees. This community is common in abandoned fields and pastures, and in railroad rights-of-way. Typical shrubs include multifora rose, black raspberry, buckthorn, black cherry, hawthorn, and Virginia juniper. Trees may include box elder maple, slippery elm, osage orange, and honey locust.

Hedgerow:

The hedgerow cover type has a grass understory with scattered trees and shrubs in the overstory. The canopy density is often under 65 percent, and areas of hedgerow are not grazed. Also, the hedgerows, as their name implies, are generally linear and associated with fencelines and margins of rights-of-way. The typical woody species include boxelder maple, green ash, locust, slippery elm, black haw, and silver maple.

Grassland:

The two types of grasslands are native grassland or remnant prairie and non-native grassland. The native grassland or prairie community is dominated by grasses, with a tree canopy of less than 10 percent. Prior to settlement, prairies covered approximately 55 percent of Illinois or nearly eight million hectares (20 million acres). Currently, only 930 hectares (2,300 acres) (approximately 0.01 percent) of these grasslands remain undisturbed (Schwegman, 1987). Two types of remnant prairie exist in the project area: mesic and wet prairie (See Section 2.9.2 Native Vegetation).

Remnant prairies occur along railroad rights-of-way because many railroads were constructed prior to cultivation of the pre-settlement landscape (White, 1978). Prairie remnants have persisted due to frequent mowing and burning of railroad rights-of-way to control woody vegetation growth. Occasionally, areas of former farmland are being restored or created as prairie. Dominant grasses of remnant and restored prairies include big bluestem, Indiangrass, purplegrass, switchgrass, and Canada wildrye. Other characteristic plants include prairie dock, compass plant, cup plant, wild bergamot, mountain mint, New England aster, and rigid goldenrod. In the southern portion of the project area, tall dropseed becomes a component of this community. The natural quality of the right-of-way prairie areas varies, with most areas having somewhat to very degraded quality. Areas of fair to good quality prairie remnants are interspersed throughout the lower quality areas.

Areas of non-prairie grassland typically occur near road rights-of-way and other locations where non-native grasses have been planted. Grasses found in this community include tall fescue, quackgrass, timothy, reed canarygrass, and smooth brome. South of Springfield, Johnsongrass and plains three-wan grass becomes prevalent along the railroad right-of-way. Non-prairie herbs include goldenrods, Queen Anne's Lace, dandelion, and chicory.

Forbland:

Forblands are vegetation communities that support disturbance-adapted broad-leaf plants and cool-season grasses. Shrubs may be present but are less than 25 percent of the overall ground cover. Common forbs include old field and abandoned pasture species such as chickory, Queen Anne’s lace, goldenrod, ragweed, sweetclover, and smooth brome. Common shrubs include black raspberry and multiflora rose. Disturbance-tolerant prairie plants may persist, including wild bergamot, stiff goldenrod, gray coneflower, and big bluestem.

Agricultural Land:

Row crop and pasture are the two types of agricultural land. Row crop communities are comprised of agricultural crops and volunteer weedy species typical to cultivated fields. This is the dominant community adjacent to the project area, particularly within the central part of the state. The primary row crops are corn and soybeans; occasionally crops consist of pumpkins, wheat, oats, or orchards. This community also includes forage crops such as alfalfa. During some years, fields may not be cropped. They remain covered with the residue of the previous years' crop, which is augmented with volunteer vegetation (i.e., weeds). The boundaries of row crop fields often have tree-lined fence rows (i.e., hedgerow community type), grassland, or forested drainageways and streams.

The pasture cover type is limited along the project area. It occurs in areas used by livestock. These areas are typically fenced and may contain small buildings that are used to shelter animals or store material. This community is located in areas unsuited for row crop production or adjacent to farm houses. Pasture areas often have a grass/herb understory and a sparse shrub or tree overstory. The grass understory is often comprised of planted grasses such as fescue, smooth brome, or timothy. Trees include oak, sycamore, hickory, and elm. Most pastures have been affected by moderate grazing pressure but have a relatively stable groundcover.

Developed Land:

This urban vegetation community occurs on land that has been landscaped or developed and supports structures such as residences (including farms and ancillary buildings), commercial buildings, roadways, and cemeteries. Native and ornamental species dominate the landscape. Common tree species include large oaks, hickories, and various pines. Groundcover varies but is primarily turf grass such as Kentucky bluegrass that is accented with ornamental flowers and shrubs. Lawn weeds such as clover and dandelion are common. Grassed areas are mowed, and planted trees, shrubs, and flowering plants are pruned and maintained.

2.9.2 Native Vegetation

Field surveys of native vegetation were conducted in all areas of the project area where construction is proposed. Within those zones an area the length of the specified activity and 30 meters (100 feet) out from the center track line was surveyed. In those areas designated for service roads, the project area extended to at least 15 meters (50 feet) beyond the edge of the right-of-way. Where new stations or grade separations are proposed, the project area included the full footprint of the facility. All of these potential construction areas within the high-speed rail project area were surveyed and evaluated for the presence of prairie vegetation. The protocol established by White (1978) was used to assess the prairie sites grades A through E. A more detailed discussion of methodology and the results of the native vegetation surveys including species inventory lists and presented in the Native Vegetation Report prepared for this project. The locations of native prairies with grades C+ or higher are illustrated in Figures 2.9-2A through 2.9-2C.

Each prairie with a grade of C+ or higher was evaluated utilizing the Floristic Quality Assessment methodology presented in Swink & Wilhelm (1994). The FQI provides a qualitative way to assess the general floristic quality of an area/site (Swink & Wilhelm, 1994). If an area or site has an FQI of greater than 35, then it is likely that the area possesses sufficient conservatism and richness to be of profound importance from a regional perspective (Swink & Wilhelm, 1994).

A total of 85 prairies were identified within the areas surveyed, 32 were prairies grade C+ or higher and 48 were either grade C or C-. Most of the native prairie remnants were linear, growing along the railroad right-of-way. Overall, there were two grade A prairies, three grade B+, 13 grade B, six grade B- and eight grade C+. Of the C+ or higher prairies, 12 had FQI's of greater than 30.00. Specifically, six prairies had an FQI between 30.00 to 34.99; four between 35.00 to 39.99, and two had an FQI of greater than or equal to 40.00. Twenty-nine of the 32 prairies of grade C+ and above were located north and/or east of Dwight (approximately MP 72.85). Eleven of the twelve high quality prairies (FQI's greater than 30.00) also occur to the north and/or east of Dwight. South of Dwight, from MP 72.85 to MP 283.70, three native prairie remnants were identified in the project area along the existing railroad tracks. Two of these prairies are grade C+. Despite their relatively low quality, the lack of native prairie remnants in southern Illinois makes these prairies more significant than some C+ prairies in northern Illinois. The general distribution of prairies by alignment is as follows:

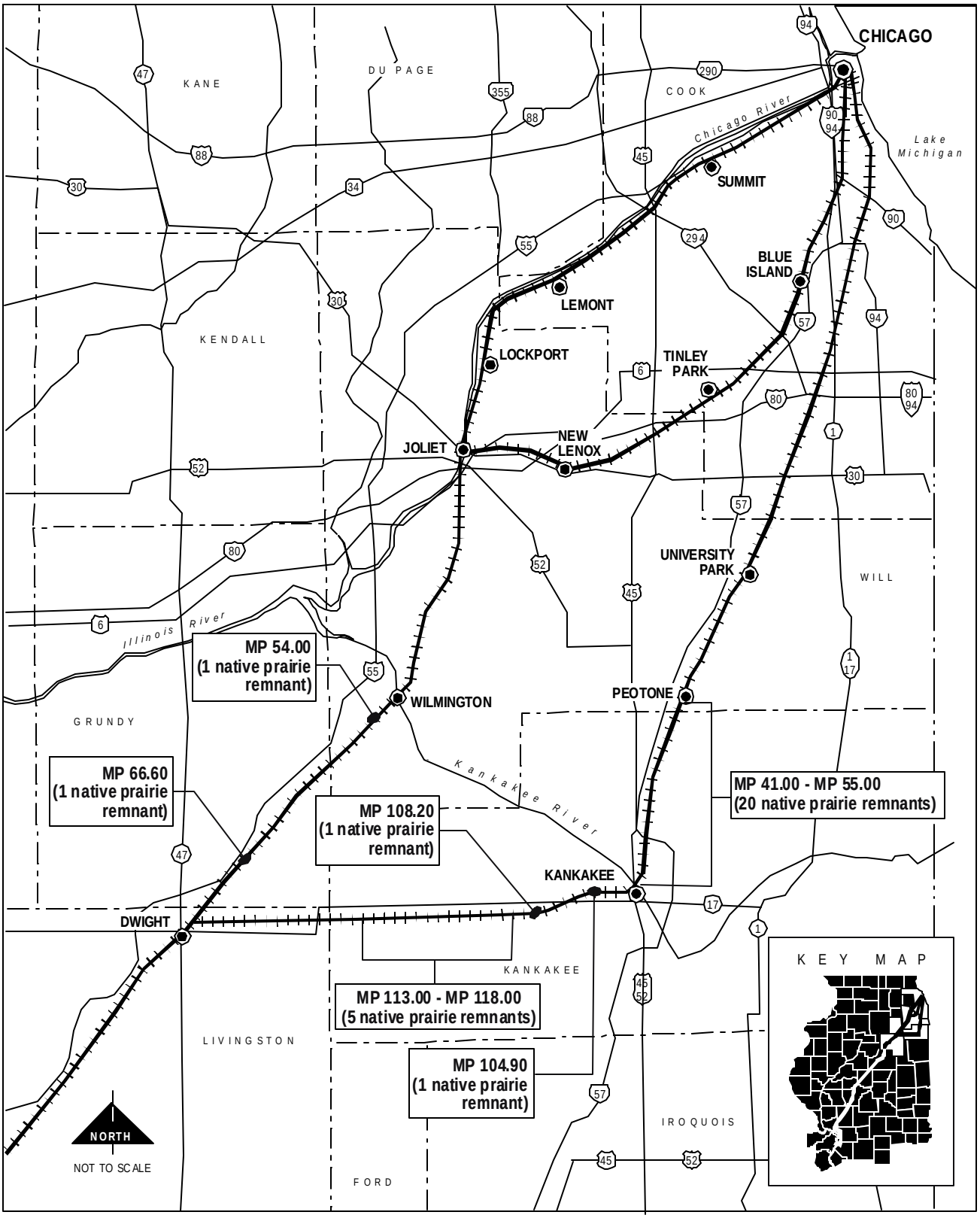


FIGURE 2.9-2A
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
NATIVE PRAIRIE LOCATIONS (Grade C+ or Higher)
(Chicago to Pontiac)

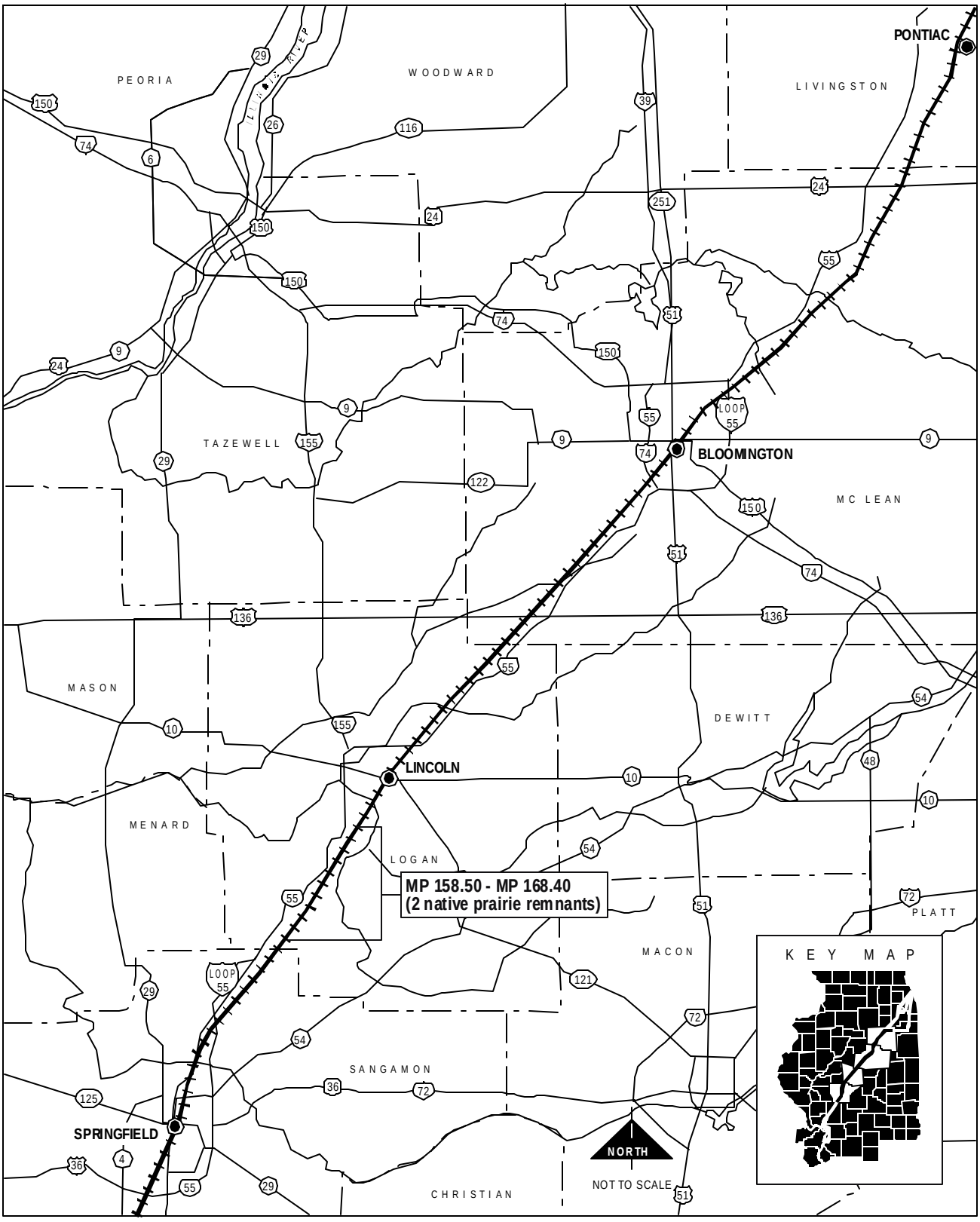


FIGURE 2.9-2B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
NATIVE PRAIRIE LOCATIONS (Grade C+ or Higher)
(Pontiac to Springfield)

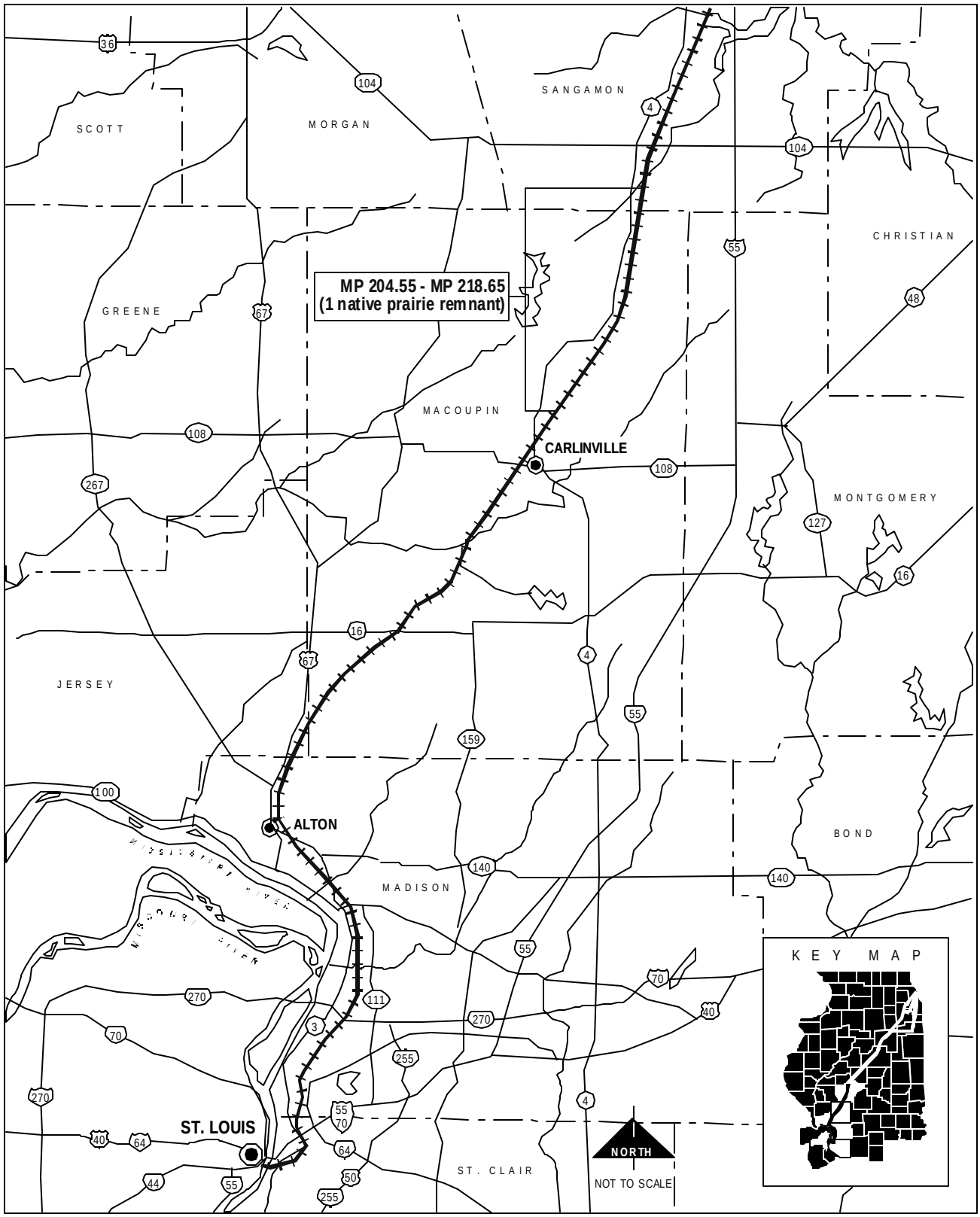


FIGURE 2.9-2C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
NATIVE PRAIRIE LOCATIONS (Grade C+ or Higher)
(Springfield to St. Louis)

IC/UP Alignment

- Fourteen total native prairie remnants
- 3.33 hectares (8.22 acres)
- Five native prairie remnants with a grade of C+ or higher totaling 2.03 hectares (5.01 acres)
- Two prairies with an FQI between 30.00 and 34.99
- One prairie with an FQI greater than 35.00

Norfolk Southern Alignment

- 80 total native prairie remnants
- 25.03 hectares (61.82 acres)
- 30 native prairie remnants with a grade of C+ or higher totaling 14.94 hectares (36.91 acres)
- Four prairies with an FQI between 30.00 and 34.99
- Six prairies with an FQI greater than 35.00

Rock Island District Alignment

- Fourteen total native prairie remnants
- 3.33 hectares (8.22 acres)
- Five native prairie remnants with a grade of C+ or higher totaling 2.03 hectares (5.01 acres)
- Two prairies with an FQI between 30.00 and 34.99
- One prairie with an FQI greater than 35.00

Table 2.9-2 summarizes existing high quality native vegetation by alignment.

Table 2.9-2
EXISTING NATIVE VEGETATION BY ALIGNMENT
GRADE C+ AND ABOVE

	NATIVE VEGETATION Hectares (acres)					
ALIGNMENT	**A**	**B+**	**B**	**B-**	**C+**	**TOTAL**
IC/UP	0 (0)	0 (0)	1.46 (3.60)	0 (0)	0.57 (1.41)	2.03 (5.01)
Norfolk Southern	1.11 (2.75)	1.00 (2.47)	6.36 (15.71)	3.83 (9.46)	2.64 (6.52)	14.94 (36.91)
Rock Island	0 (0)	0 (0)	1.46 (3.60)	0 (0)	0.57 (1.41)	2.03 (5.01)

Source: Planning Resources Inc., August 1999.

2.9.3 Terrestrial Wildlife

Railroad rights-of-way and their associated vegetative cover provide habitat for many wildlife species. The linear characteristic of a rail line offers not only localized habitat value but also important continuity of open space, linking diverse habitat features. This linkage can be important, especially where the right-of-way passes through predominantly agricultural or urban areas that otherwise offer limited habitat value and diversity. Railroad rights-of-way offer denning sites for small mammals, nesting and roosting structure for song birds and raptors, and can provide seclusion and ground cover for various species of reptiles and amphibians. Due to the early establishment of railroads, relatively undisturbed portions of the right-of-way hold some of the only remaining vestiges of Illinois prairie, along with the invertebrate and vertebrate species characteristic of this once-common plant community.

The evaluation of wildlife is based on a survey of habitat availability, wildlife species distribution, habitat preferences, as well as direct and indirect field observations. A field reconnaissance was conducted within the project area, focusing on areas of potential project impact and characterizing typical habitats. Habitat availability was then compared with published records for species distribution as well as field observations. A total of nine habitats were evaluated.

Habitat utilization varies by species and depends on each animal's biological requirements. Such requirements also vary by sex, age and season, etc. General habitat uses include shelter/cover, breeding, denning and nesting areas and feeding areas. The relative success of a given wildlife population depends in part on the specific combination or interspersion of habitat types available. Other features such as geographic and climatic condition as well as interspecific competition help determine the likely abundance of a given species within a given area.

Due to the extensive length of the project, many animals cited in this section occur only in a portion of the project area. The eastern mole is found in well drained soils in more central Illinois. The meadow vole, least weasel and western smooth snake occur in grasslands of the northern half of the state. The plains pocket gopher is found in sandy soils bordering the southeast edge of the Illinois and Kankakee rivers. The eastern box turtle, rough green snake and prairie king snake are generally limited in range to the southern half of the state. Wildlife species potentially found in the project area and their principal habitats are listed in Appendix A-1.

Upland Forest:

Upland forest lies in scattered sites in the project area, most frequently associated with stream crossings or planted windbreaks near farmhouses. Upland forest accounts for approximately three percent of the cover in the project area. Wildlife species numbers generally increase with the height and complexity of habitats as well as with interspersion of habitat types. For this reason, forested areas (with their understory, shrub and groundcover layers) and savannas (with their high proportion of "edge") frequently support numerous wildlife species (Ghiselin, 1977). Oak-maple-elm woods provide dens and nests for many wildlife and a food source for squirrels and other mast-eating species. Within the tree canopy of upland forests are the black-capped chickadee, red-eyed vireo, Coopers hawk, yellow-shafted flicker and tree sparrow. Tree boles provide denning and/or foraging sites for the fox squirrel, brown creeper, screech owl, great-horned owl, black-capped chickadee and southern flying squirrel. Species found in the shrubby understory layer include the cardinal and mourning dove. The white-tailed deer, ring-necked pheasant and cottontail rabbit use the brushy edges between forestland and cropland for food and cover. The opossum and other mast-eating species

forage on acorns, roots, berries and seeds associated with the groundcover vegetation. The forest floor is ideal habitat for subterranean and ground-dwelling reptiles and amphibians because of the ample shelter and food. Salamanders, frog and toads live under the leaves, logs and rocks. They and various mice and shrews are hunted by snakes, which are in turn preyed upon by raccoons, owls, hawks and foxes.

Large, undisturbed tracts of woods provide seclusion and habitat required by some species. "Interior" species include wild turkey, yellow-throated vireo, ovenbird, hooded warblers and American redstart (Herkert et al., 1993). Fragmented forest areas have greater sunlight penetration associated with their high proportion of "edge." This results in an increased shrub component relative to the wooded arboreal layer. The combination of tree, shrub and understory strata, as well as the proximity to other habitats such as meadows, abandoned field, or croplands benefits a variety of wildlife. The diversity of cover and food sources support game species such as white-tailed deer and ring-necked pheasant. Species such as downy woodpecker, red-bellied woodpecker, blue jay, eastern wood-pewee, brown-headed cowbird, common grackle, northern oriole, rose-breasted grosbeak, northern cardinal, gray catbird, American robin, black-capped chickadee and house wren also inhabit areas of highly fragmented forest lands. Forested areas with intermediate-level fragmentation provide habitat conducive to the scarlet and summer tanagers, red-eyed vireo, hairy woodpecker, tufted titmouse, blue-gray gnatcatcher and wood thrush.

Savanna is relatively rare in the project area. Once common in the Illinois landscape, this habitat supports a fauna with representatives from both open forest and native grassland. Mature oaks within the savanna can provide roosting and nesting sites for red-tail hawks and nesting and feeding structure for eastern fox squirrels. The red-headed woodpecker, black-capped chickadee and the white-breasted nuthatch also feed among mature trees of the savanna. Species such as the savannah sparrow, least shrew, meadow vole and the deer mouse are characteristic of the ground layer.

Shrubland:

Shrubland accounts for approximately six percent of the upland vegetation within the overall project area. While generally linear in form and following the railroad right-of-way, shrub habitat may be found in masses covering larger, but more irregular and discontinuous areas than hedgerow habitat. Shrub habitat supports many of the same species of small mammals, reptiles and amphibians. This cover type is especially valuable for avian species, providing an abundant food source for seeds and berries, as well as protected nesting sites. Typical species include: song sparrow, mourning dove, common yellow-throat, goldfinch and cowbird.

Hedgerow:

This habitat type accounts for approximately six percent of the upland cover. Hedgerow habitat is characteristically linear, comprised of early successive trees and shrubs with a high proportion of edge relative to interior. The various stages of natural growth offer diverse vegetal cover and structure for wildlife. Abundant seed crops produced by grasses and weedy herbs provide a ready food source for rodents and insects. Additionally, the non-mowed and ungrazed character of the herbaceous understory provides nest material for rodents and cover for various terrestrial wildlife. Small mammals such as woodchucks, skunk, raccoon and opossum may find this cover suitable for denning sites and burrows. The tree boles and canopy provide nesting sites for fox squirrel. Grasses and forbs offer cover for white-footed mice, short-tailed shrews and cottontail rabbit. Predominant species such as the red fox may use the hedgerow habitat as a cover. Birds such as American goldfinch, black capped chickadee, tufted titmouse, gray cowbird and the brown-headed cowbird may nest in this cover type.

Grassland:

This cover type represents approximately 15 percent of the upland cover types. Remnant prairie habitat occurs in many locations along the existing rail right-of-way. Species utilization is similar to that of non-native grassland habitat. Species considered characteristic of prairie habitats include horned lark, bobolink, meadowlarks, sparrows (e.g., vesper, savannah and grasshopper), dickcissel and sedge wren (Herkert et al., 1993).

Despite the lack of shrub and tree overstory, non-native grasslands (e.g., grassed railroad embankments and pastures) support a diverse array of wildlife associated with the terrestrial surface and subsurface. Grassland wildlife species have habitat preferences based on vegetation height and composition, soil moisture, grazing intensity, fire frequency (Herkert et al., 1993) and degree of habitat fragmentation. Killdeer prefer very short, sparse grass where fire frequency is high and soil moisture is relatively low. The dickcissel, red-winged blackbird and sedge wren prefer areas having high vegetation and soil moisture, low fire frequency and low grazing intensity. The bobwhite and field sparrow prefer sparse shrub cover and a high (50:50) herb:grass ratio. Areas of fragmented grasslands support cottontail rabbits, northern bobwhite, red-winged blackbird, American goldfinch, vesper sparrow, field sparrow, song sparrow, dickcissel and common yellowthroat (Herkert et al., 1993). Such locations will not support bobolink or savannah sparrow. Grassland habitats with an intermediate degree of fragmentation support eastern and western meadowlarks, grasshopper sparrows and sedge wrens.

When a tree canopy is present within pasture areas, species found within such habitat include bats (e.g., little brown bat, silver-haired bat, eastern long-eared bat, hoary bat), perching birds (e.g., red-headed woodpecker, blue jay, crow) and raptors such as the great-horned owl, screech owl and red-tailed hawk. Tree boles provide favored habitats for these raptors and for woodpeckers.

Areas of wet prairie offer habitat similar in structure to upland grassland sites. In addition to the upland species, representative inhabitants of this cover type include the red-winged blackbird and swamp sparrow in areas providing a shrub layer. Wildlife occupying the ground surface include mink, least weasel, bull frog, American toad, meadow vole, leopard frog, American bittern and lesser yellowlegs.

Forbland:

Forbland accounts for approximately 25 percent of the upland vegetation within the overall project area. Small mammals such as the short-tailed shrew, prairie vole and deer mouse utilize this cover type. Where groundcover is sufficient the vesper sparrow, bob white, grasshopper sparrow and ring-necked pheasant may be found here also. This habitat is among the most abundant yet easily replaced within the project area.

Agricultural Land:

This cover type represents 22 percent of the upland cover. Grass cover in meadows and pastures adjacent to the right-of-way is typically mowed or grazed. Avian species using this habitat include the American robin, bobwhite, ring-necked pheasant, killdeer, common grackle, mourning doves, song sparrow and eastern meadowlark. Rodents such as the thirteen-lined ground squirrel, house mouse and meadow vole share the terrestrial surface with a variety of mammals (e.g., opossum, cottontail rabbit, red fox, striped skunk, white-tailed deer). Grasslands make good habitat for drought-tolerant snakes, which hunt the abundant rodents and

insects and bird eggs found near ground level. The eastern plains garter snake, midland brown snake, western fox snake, American toad and tiger salamander are representative reptiles and amphibians.

Cropland is the most common habitat type adjacent to the project right-of-way between the urban areas of Chicago, Bloomington/Normal, Springfield and St. Louis. Row crop cover is not highly productive for wildlife because of its lack of diversity, but waste grain can provide food source for many disturbance-tolerant wildlife species. Species closely associated with areas of active agriculture include the ring-necked pheasant, cottontail rabbit, bobwhite, killdeer, eastern meadowlark and red fox.

Developed Land:

Developed land accounts for approximately 23 percent of the upland cover in the project area. In urban areas, wildlife habitats are considerably altered from the natural state. Herbaceous vegetation is mowed, shrubs and trees are pruned and spaced and weeds (which provide an abundant seed food source) are eliminated. Nevertheless, disturbance-tolerant wildlife species have adapted to urban areas for their habitat needs. Skunks burrow beneath garage foundations or porches; bats nest in attics or garages; raccoons forage in garbage cans. The fox squirrel, cottontail rabbit, house mouse and little brown bat are also human-tolerant wildlife. Birds residing in urban areas include starlings, crows, American robin, mourning dove, blackbirds, cardinals, song sparrows and occasionally a great-horned owl. The Canada goose has become quite habituated to human presence in urban areas, whereas the red-tailed hawk is only semi-tolerant of human influence. It can be observed hunting/soaring over semi-urban areas but avoids human proximity when nesting.

Bottomland Forest:

A profusion of wildlife occurs in wetland areas due to their valuable combination of open water, natural cover and food availability. Many wetland species are similar to species in upland community types. This cover type occurs along project area streams and accounts for less than five percent of the vegetation. Raccoons den in lowland forest trees and graze on available fruit, nuts, insects, birds and frogs. Mink inhabit the wooded shorelines and brushy areas near water and prey on a diet similar to that of raccoons. Wooded wetlands provide habitat for the wood duck, which inhabits cavities of trees. The wood duck shares the forested canopy and tree boles with the gray squirrel, belted kingfisher, tree swallow, wood thrush, barn owl and Coopers hawk. Beaver prefer younger bottomland forested stands in the early stages of succession as a source of food and material for constructing their lodges. Species found within the scrub-shrub layer include spring peepers, downy woodpecker, yellow warbler, red-winged blackbird, cardinal, song sparrow and house wren. Typical terrestrial species include the cottontail rabbit, least weasel, long-tailed weasel, opossum, skunk, woodchuck and white-tailed deer. The forested subsurface provides habitat for the masked shrew and other rodents.

Aquatic Bed/Emergent:

Mammals utilizing aquatic bed/emergent wetland areas include beaver, muskrat and mink. Avian species include numerous birds and various reptiles and amphibians. Representative species include killdeer, common snipe, various rails, bitterns, northern harrier, meadow humping mouse, long-billed marsh wren, western chorus frog, swamp sparrow, bull frog and numerous species of waterfowl (e.g., blue-winged teal, coot, mallard, merganser, wood duck and lesser scaup).

2.9.4 Threatened and Endangered Species

The Federal Endangered Species Act (ESA) of 1973, as amended, was passed in an attempt to control the loss of at-risk birds, mammals, reptiles, mussels, fish, amphibians, invertebrates, and plants. Section 7 of the ESA requires that projects being authorized, funded, or carried out by federal agencies demonstrate that the action will not jeopardize the continued existence of any listed species or modify their critical habitat. If federally listed species are known to exist on a proposed site, the lead federal agency must initiate Section 7 consultation with the U.S. Fish and Wildlife Service to assure that the species and/or critical habitat will not be adversely affected by the project.

The Illinois Endangered Species Protection Act (IESPA) of 1972 (as amended) is similar to the ESA but is implemented at the state level. The state act protects State-listed animals and plants from unauthorized actions and requires agencies of the State and local governments to enter into a consultation process through the Illinois Department of Natural Resources to evaluate whether actions authorized, funded or implemented by these entities are likely to jeopardize the continued existence of state-protected species or are likely to result in the destruction or adverse modification of designated essential habitat of the such species.

2.9.4.1 Methodology

Field studies for threatened and endangered plants and animals were conducted in the fall of 1997 and the spring and summer of 1998. Through early coordination with the Illinois Department of Natural Resources, a list was developed that included federal and state threatened and endangered species potentially occurring in the project area. This list was based on a review of the Natural Heritage Data Base (IDNR, 1996a), as well as recommendations of the individual Natural Heritage Biologists most familiar with each section of the project area. Cover-type mapping was prepared for all areas within the project area through aerial photo interpretation. This information was then field verified during the fall of 1997. Plant surveys were timed to coincide with the optimal identification period for each species, typically the time of flowering.

Field surveys were conducted in all areas of the project area where construction is proposed. Although all areas were surveyed, special emphasis was placed on locations identified by the IDNR and where appropriate habitats were determined during the fall field studies. The project area for protected plants encompassed an area extending from the edge of track to 30 meters (100 feet) on either side. In those areas designated for service roads, the project area extended to at least 15 meters (50 feet) beyond the edge of right-of-way. Where new stations or grade separations are proposed, the project area included the full footprint of the facility. Field studies for animal species focused on all appropriate habitats within and adjacent to the proposed construction zones. Avian surveys were conducted for all species identified by the IDNR as potentially occurring in the project area. Available habitats were determined based on field verified cover-type mapping.

In addition to overall plant and animal surveys within the project area, three special studies were undertaken for threatened or endangered fauna known to have a high probability of occurring within the project area. During the spring and summer of 1998, field studies were undertaken for the Eryngium stem borer (*Papaipema eryngii*), the Illinois chorus frog (*Pseudacris streckeri illinoensis*), and the Hine's emerald dragonfly (*Somatochlora hineana*).

Tables 2.9-3 and 2.9-4 list the protected plant and animal species identified by the IDNR as potentially occurring within the project area and characterize the habitat requirements of each species. Figures 2.9-3A

through 2.9-3C illustrate the location of species with potential involvement. A full discussion of threatened and endangered species is provided in the March 1999 Technical Report prepared for this project.

2.9.5 Natural Areas

Much of the vegetation within the project area is not high quality. However, there are 22 Illinois Natural Area Inventory sites and 7 nature preserves within 1.6 kilometers (one mile) of the project area (Table 2.9-5). The INAI sites are ecologically sensitive and require consultation under the Illinois Endangered Species Protection Act. Eight of the INAI sites are managed. There are two additional managed sites (the Stubblefield Woodlots Nature Preserve and the Illinois and Michigan Canal National Heritage Landmark) that are not listed as INAI sites. Nature preserves are protected under the Illinois Natural Preserves System Act of 1963. The act stipulates that nature preserves be maintained as much as possible in the natural condition and be used in a manner consistent with their continued preservation. Types of areas typically included in nature preserves are forests, prairies, savanna, wetland communities as well as habitats for threatened and endangered species (Witter, 1987).

Geological natural areas contain outstanding exposures of various geological formations and/or fauna (e.g., trilobites or crinoids). Vegetative natural areas contain sensitive species (see Section 2.9.2) and/or unique associations of plants. Such associations include various types of sand prairie (e.g., wet, wet-mesic, mesic, dry-mesic, and dry), prairie (e.g., wet, wet-mesic, mesic, and dry-mesic), floodplain forest (e.g., wet-mesic, mesic), upland forest (e.g., mesic and dry-mesic), marsh, and seep.

2.10 FLOODPLAINS

The Federal Emergency Management Agency (FEMA) has mapped areas that would be affected by flooding for most major waterways along the project area. Flooding in the Greater Chicago Area primarily occurs in response to spring snowmelt and to heavy precipitation events. The rapid rise in the water level inundates the flat, low-lying areas near the river valley for extended periods. Besides the flat topography, flooding problems are exacerbated by urban development, which has increased surface water runoff; channel construction such as bridges that "back-up" flood waters; and the reduction in the natural floodway due to construction of levees and channelization, particularly where no compensatory flood storage construction has occurred.

National Flood Insurance Program Maps from FEMA were used to identify and calculate the length of the 100-year floodplains crossed by the HSR alternative alignments. All of the floodplain crossings identified in the project area are shown on Figures 2.10-1A through 2.10-1C. Section 5.10 discusses the potential for floodplain impacts in the areas where construction is planned.

Table 2.9-3
THREATENED AND ENDANGERED PLANT SPECIES
POTENTIALLY OCCURRING IN THE PROJECT AREA

Species	Common Name	Habitat	Status	County	Potential for Occurrence
Petalostemum foliosum (Dalea foliosa)	Leafy prairie clover	Mesic dolomitic remnants prairie (Cook, Will, Kankakee, and northeast Grundy); presently it is known from four locations along a few miles of the Des Plaines River. Re-discovered in prairie habitat near Lockport in Will County, where the plants grow on shallow soil prairies where dolomitic bedrock is near the surface; since then it has been noted at a few additional dolomite prairies along the Des Plaines River.	Federal-E State-E	Cook, Kankakee, Will	This species is presently known only from four locations along the Des Plaines River corridor in Will County. Potential habitat occurs between MP 41.00 and 55.00 along the IC mainline and also sporadically in a wet prairie area near MP 29.70 along the IC Joliet line. Field surveys within the railroad rights-of-way, including these sections, did not find this species.
Boltonia decurrens	Decurrent false aster	Disturbed alluvial soils.	Federal-T State-T	Madison, St. Clair	This species may occur in wetlands associated with the Mississippi River floodplain at the extreme southern end of corridor.
Platanthera leucophaea	Prairie white fringed orchid	Mesic to wet prairies.	Federal-T State-E	Northeastern Illinois	Has potential for occurring in wet to mesic prairie habitats in north central Illinois. However, three season surveys of prairie habitats did not find this species.
Astragalus crassicarpus var. *trichocalyx*	Large ground plum	Dry rocky prairies, glades, gravel prairies, open woods, and blufftops. Prairies and plains.	State-E	Jersey, Macoupin, Madison	Although potential habitat exists within the HSR corridor, this species is extremely rare and was not recorded in field surveys within the railroad right-of-way.

Species	Common Name	Habitat	Status	County	Potential for Occurrence
Calopogon tuberosus	Grass pink orchid	Prairies, bogs, and fens. In the Chicago region the most frequent habitat is in bogs, marly fens, and peaty meadows; restricted to northeast counties. Also grows in mesic and wet-mesic sand prairie.	State-E	Cook, Grundy, Kankakee, Macoupin, Will	The grass pink orchid historically has been found in five counties along the project corridor but was not found in early summer surveys of project area wetlands.
Camassia angusta	Wild hyacinth	Prairies and moist open woods. Prairies and woodlands.	State-E	Logan, Sangamon	Potential habitat exists along the UP right-of-way, but this species was not noted in three season field surveys. This species is very rare and may be extinct in Illinois.
Carex viridula	Little green sedge	Dune swales, marl flats, disturbed calcareous sites.	State-E	Cook	During investigation the study team identified the state endangered little green sedge along the right-of-way of the IC mainline at approximately MP 45.55 in Kankakee County.
Erythronium mesochoreum	Prairie trout-lily	Mesic prairies in the Western Forest-Prairie Natural Division (Jersey, Macoupin). Common in dry to mesic prairies and occasional in open, sunny woodlands; found in the southern tallgrass region from eastern Nebraska east into Illinois.	State-E	Macoupin	The prairie trout-lily is known from Macoupin County and has previously been found in railroad rights-of-way, cemeteries and pastures. Spring plant surveys in the corridor failed to find this species.
Isoetes butleri	Quillwort	Seasonably wet spots in thin soil over limestone and dolomite bedrock in dolomite prairie.	State-E	Cook, Will	It has been reported in Cook and Will Counties and was found in 1991 in the Des Plaines Conservation Area. June surveys of the railroad right-of-way in suitable habitat areas failed to find this species.

Species	Common Name	Habitat	Status	County	Potential for Occurrence
Orobanche ludoviciana	Broomrape	Reaches eastern range limit in Illinois, where it occupies blowouts in dry sand prairies and on alluvial floodplains along rivers. This species is parasitic on the roots of various members of the Asteraceae.	State-E	Logan	Although it was not found in late summer surveys, it has potential habitat within the project corridor especially in central Illinois sections of the UP alignment where giant ragweed is abundant.
Polygala incarnata	Pink milkwort	Known from sand prairies, hill prairies, and barrens in scattered localities throughout Illinois. Last time this species was seen in project area was near Godley in Will County in 1989. Collected in Kenosha County at the Chiwaukee Prairie in 1966. Latest Kankakee County collection in 1939, six miles west of Kankakee in original prairie. Dry soil, upland woods, barrens and prairies.	State-E	Cook, Kankakee, Will	This species has the potential for occurring within the project area. However, summer surveys including prairie remnants between MP 54.00 and 57.00 south of Godley did not find this species.
Silene regia	Royal catchfly	Dry-mesic barrens and prairies. In Illinois it is known from both the Wabash and Lower Mississippi River drainages. Open woodlands and roadsides.	State-E	Cook, Macoupin, Madison, Will	The royal catchfly (*Silene regia*) is known from dry mesic barrens and prairies in the Wabash and Lower Mississippi River drainages. Summer surveys did not record this rare species in the railroad right-of-way.
Sisyrinchium atlanticum	Eastern blue-eyed grass	Reaches its northwest range limit in mesic prairie habitat in Illinois; found in Macoupin County railroad prairie in 1971; known to occur in Iroquois County and DuPage County. Greatest concentration of this species is in the Kankakee River valley in Indiana. Has been found in a sand barren in Starke County. Fields, meadows, open woods.	State-E	Kankakee, Macoupin	A summer survey of suitable prairie habitats within the project corridor did not find this species.

Species	Common Name	Habitat	Status	County	Potential for Occurrence
Tradescantia bracteata	Prairie spiderwort	Dry-mesic silt and sand prairies in western Illinois, often in disturbed habitats; known from seven localities in Illinois; several are along railroad right-of-way.	State-E	Logan, Jersey, Madison	Spring and summer surveys of the project corridor did not find this species, however habitat is present.
Arenaria patula	Slender sandwort	Dolomite prairies (Cook, Will, Kankakee, and northeast Grundy) along the Des Plaines, Fox, and Illinois Rivers. Rocky soils, barrens, and meadows.	State-T	Cook, Grundy, Kankakee, Will	Spring surveys of dolomitic prairies along the IC-Joliet Line did not find this species.
Cirsium hillii	Hill's thistle	Dry open soil in prairies. Dry open places, especially with jack pine and oak, but also prairie-like ground, thin soil over limestone and sandy banks.	State-T	Cook, Grundy, Kankakee, Macoupin, Madison, Sangamon, Will	Sandy soils and prairie remnants occur along the IC mainline between MP 42.00 and MP 52.00 and in three general sections along the UP. Summer surveys conducted within the railroad right-of-way in these and other proposed construction areas did not locate this species.
Drosera intermedia	Narrow-leaved sundew	Peat bogs and wet sand prairies in Illinois. Characteristic bog species. Usually in the wettest parts of bogs and on sandy shores subject to periodic inundation.	State-T	Cook, Grundy, Kankakee, Will	Summer surveys of wetlands along the rail right-of-way did not document the presence of this species.
Liatris scariosa var. *nieuwlandii*	Blazing star	Silt loam savannas on Wisconsinan and Illinoisan aged glacial till or loess soils in the Northeastern Morainal (Cook, northern Will) and Western Forest-Prairie Natural Divisions (Jersey, Macoupin). A plant of savannas in the Chicago region, growing only on the Morley-Markham-Ashkum silt soil catena. Dry sandy prairie remnants, fields, hillsides; woodlands and barrens with jack pine, oak, aspen; associated roadsides and railroads.	State-T	Cook, McLean, Macoupin, Sangamon, Will	Although this species was not noted in late summer surveys of the railroad right-of-way, potential habitat for this species exists within the corridor.

Species	Common Name	Habitat	Status	County	Potential for Occurrence
Tomanthera auriculata (Gerardia auriculata)	Ear-leaved foxglove	Disturbed prairies and savannas. Rare and local in dry to moist prairies at scattered locations in the tallgrass region from Minnesota south and eastward. Local in project area in moist prairies.	State-T	Cook, Grundy, Logan, Macoupin, Will	Although this is a rare species not found in late summer field surveys, possible habitat is scattered along the existing railroad right-of-way in prairie remnants.

Table 2.9-4
THREATENED AND ENDANGERED ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE PROJECT AREA

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Somatochlora hineana	Hine's emerald dragonfly	**Water** (stream) **Wetland** (non-forest)	Inhabits shallow, calcareous seepage marshes or the marshy margins of small, sluggish, calcareous streams, which are usually dominated by cattails. Wetlands typically feature shallow soils overlying dolomitic bedrock. Breeding habitat tends to be clear, silt free, shallow flowages that pass through cattails. Illinois populations are restricted to Will, DuPage, and Cook counties; all sites are located within 1.2 miles of each other and within 2.5 miles of the Des Plaines River.	Federal-E State-E	Cook, Will	This species is currently known from 13 sites in Illinois, all within 2.5 miles of the Des Plaines River.
Sterna antillarum	least tern	**Water** (stream, lake, reservoir) **Barren** (beach, sand)	Presence of sandbars; existence of favorable water levels; availability of food. In Illinois associated with large rivers and sandbars. In the Mississippi River, least terns nest in shallow depressions on sand islands.	Federal-E State-E	Cook, Madison	There has been no evidence of this species nesting in Illinois since 1974.
Myotis sodalis	Indiana bat	**Floodplain Forest** **Caves**	Caves, mines, small stream corridors with well developed riparian woods; upland forests.	Federal-E State-E	Statewide	Stream crossings with mature riparian forest occur at several locations along the corridor.
Myotis grisescens	Gray bat	**Upland Forest**	Caves; feeds over rivers and reservoirs adjacent to forests.	Federal-E State-E	Madison	Cave habitat is not present in area adjacent to the right-of-way.
Scaphirhynchus albus	Pallid sturgeon	**Open Water**	Rivers.	Federal-E State-E	Madison, St. Clair	Potential habitat exists for this species in the Mississippi River near St. Louis.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Gammarus acherondytes	Illinois cave amphipod	**Subterranean Stream**	Karst caves and streams.	Federal-E State-E	St. Clair	Karst habitat is not present in the area immediately adjacent to the railroad right-of-way.
Haliaeetus leucocephalus	Bald eagle	**Upland Forest**	Breeds and winters along major rivers and large reservoirs; old trees with high branches.	Federal-T State-T	Grundy, Jersey, Madison, St. Clair, Sangamon, Will	Large river habitat in the corridor is limited to the Des Plaines, Kankakee, and Mississippi Rivers; no roosting or nesting trees were observed during the avian survey.
Accipiter striatus	sharp-shinned hawk	**Agricultural** (crop, pasture) **Urban Forest** (deciduous, evergreen, mixed) **Wetland** (forest)	Occurs in deciduous and coniferous forests and open woodlands. Prefers open woodland, edges of woods, clearing, hedgerows, bushy pastures, and shorelines where small birds are found. Usually selects mature forest and stream habitats for nesting.	State-E	Cook	Field surveys and cover type analysis indicates that in the study area prime habitat for this species lies outside of the railroad right-of-way.
Ammodramus henslowii	Henslow's sparrow	**Agricultural** (crop, pasture) **Wetland** (forest, non-forest)	Occurs in grassy wet areas, marshy openings, and wet meadows. Taller, dense grassland mixes. Open grasslands with wet areas favored. Clover, orchardgrass, and Queen Anne's lace listed as cover species. Originally nested in prairie habitat, but now also nests in abandoned fields and hayfields with tall-dense cover. In Illinois Henslow's sparrow also are dependent upon relatively large grassland areas for nesting, rarely occurring on grasslands less than 50 hectares in size.	State-E	Cook, Grundy	Habitat occurs sporadically and adjacent to the railroad corridor.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Asio flammeus	short-eared owl	**Agricultural** (crop, pasture) **Wetland** (forest, non-forest) **Barren** (sand)	In Illinois, prefers wet prairies. Ground nester, raising young in same habitat. 55% nest in grasslands (prairies), 24% in grain stubble, and 14% in hayfields. Nests on the ground in open country including prairies, meadows, marshes, savanna and dunes. Nearly all of the recent nest records for Illinois are from grassland areas at least 50 hectares in size.	State-E	Cook, McLean	
Asio otus	long-eared owl	**Agricultural** (crop, pasture, orchards, groves, nurseries) **Forestland** (deciduous, evergreen, mixed)	Illinois populations are generally migrants. High value habitats, then, are those for roosting; stands of evergreen trees (pines, junipers) and hunting; open areas (pastures, grassy areas, forest edges). Found in light broad-leaved and coniferous forests, riverine forests, and parks.	State-E	Cook	The single site with mixed conifers within the project area proved too sparsely wooded and offered only marginal habitat for this species.
Bartramia longicauda	upland sandpiper	**Agricultural** (crop, pasture) **Urban** (Transportation/ communication, other)	Reported in open grasslands near airports, schools, roadsides, and other areas. Prefers pastures and hayfields (alfalfa and clover). In Illinois, associated with open grassland habitats such as pastures, hayfields and prairie remnants with an average grass height less than 30 cm.	State-E	Cook, Grundy, Kankakee, McLean, Madison, Sangamon, Will	Field surveys identified moderate habitat for this species along the IC mainline near MP 30.00. Other areas may occur near the railroad right-of-way especially in rural areas.
Botaurus lentiginosus	American bittern	**Wetland** (forest)	In Illinois this bittern usually inhabits tall grasses in a wet area (i.e., freshwater marshes and marshy lake shores) for feeding, nest construction and protection. Reported using prairie sloughs as nest sites and reported nesting among cattails, bulrushes, and sedges just above the water level at a marsh edge. Nesting has also been noted at woodland ponds.	State-E	Cook, Grundy, St. Clair, Will	Potential habitat for this species was identified at several locations in the corridor, including wetlands along the IC-Joliet Line near MP 29.70 and also south of Wilmington along the UP between MP 54.00 and 55.00.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Buteo lineatus	red-shouldered hawk	**Agricultural** (crop, pasture, orchard, groves, nurseries) **Forestland** (deciduous) **Wetland** (forest, non-forest)	The red-shouldered hawk inhabits moist and riparian forests including wooded swamps. It is often seen foraging along the forest edge and open woodland. Large trees are required for nesting.	State-E	Cook, Will	Potential nesting and feeding habitat occurs at several locations adjacent to the rail right-of-way, including MP 114.56 along the Norfolk Southern alignment in Kankakee County and MP 209.00 on the UP alignment in Macoupin County.
Circus cyaneus	northern harrier	**Agricultural** (crop, pasture) **Wetland** (non-forest)	In Illinois, harriers are most often observed during migration as they hunt over pastures and fallow fields. Nesting is usually restricted to relatively large undisturbed grasslands and marshes, among low shrubby vegetation, tall weeds or reeds, or shelter site. Most harrier nests in Illinois occur in grasslands at least 60 hectares in size and include a variety of cover types such as prairie grasses, brome, timothy, and fallow fields and even wheat fields. The nest is usually placed on the ground in a mound of dead reeds or grasses.	State-E	Grundy, Will	Within the project corridor northern harrier nesting and hunting habitat are adjacent to the right-of-way, with hedgerows providing shelter for potential prey. Moderate habitat exists along the IC mainline near MP 53.00 to 55.00.
Egretta caerulea	little blue heron	**Agricultural** (crop, pasture) **Wetland** (forest, non-forest) **Water** (stream, lake, reservoir)	Occurs in lakes, ponds, marshes, sloughs, marshy shores of streams, and coastal estuaries. In Illinois, this species typically nests in association with other herons. Nests are often placed in stands of young trees, primarily black willows and cottonwoods forming dense thickets. Feeding takes place in shallow waters of lagoons, marshes, and swampy areas.	State-E	Jersey, Madison, St. Clair	No nesting colonies of heron were noted along the project corridor. Foraging habitat is available within wetlands adjacent to the corridor.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Egretta thula	snowy egret	**Agricultural** (crop, pasture) **Water** (stream, lake, reservoir) **Wetland** (forest, non-forest)	In Illinois, snowy egrets nest in lowland thickets or forest in association with other species of colonial herons, especially little blue herons. Foraging is generally restricted to lagoons and marshes of the American Bottoms. Willow species and buttonbush stands are common nesting places; prefer wetlands that afford a dense thicket of small trees or shrubs near water's edge for nesting.	State-E	Madison, St. Clair	Foraging habitat is available within the corridor adjacent to the right-of-way.
Ixobrychus exilis	least bittern	**Wetland** (forest, non-forest) **Water** (stream, lake, reservoir, bay)	The least bittern inhabits shallow freshwater lakes and marshes, primarily in cattail marshes, where it nests among tall dense vegetation. Nests in dense growth of marsh emergents, above shallow water but near open water.	State-E	Cook, Grundy, Sangamon, Will	Wetland habitat is scattered along the project corridor but limited in the right-of-way.
Nycticorax nycticorax	black-crowned night heron	**Wetland** (forest, non-forest) **Water** (stream, lake, reservoir, bay)	Seems adapted to nearly every conceivable habitat in which a wading bird may exist. Nests are placed in a wide variety of bottomland forest trees although willow or cottonwood thickets are sometimes used. Also reported nesting in herbaceous marsh vegetation in Illinois.	State-E	Cook, Kankakee, McLean, Madison, St. Clair, Sangamon, Will	Currently only four sizable colonies remain in Illinois. Although an uncommon summer resident, there is potential habitat for this species along the corridor.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Papaipema eryngii	Eryngium stem borer	**Grassland** (prairie)	Occurs only in large prairie areas that have abundant populations of rattlesnake master (*Eryngium yuccifolium*), its larval host plant. In Illinois, only known populations occur in Will and Grundy counties.	State-E	Grundy, Will	The presence of the eryngium stem borer was confirmed at three locations within the study area: in Will County between MP 54.00 and MP 54.85 on the UP; in Grundy County at MP 66.60 on the UP; and in Kankakee County from MP 42.75 to MP 43.30 on the IC mainline.
Sistrurus catenatus	Eastern massasauga	**Wetland** (forest, non-forest) **Forestland**	Occurs in wet prairies, bogs, swamps, and rarely dry woodlands. May hide in underground cavities or crayfish holes.	State-E	Cook, Logan, McLean, Madison, Will	Potential habitat is available in the study area.
Sterna forsteri	Forster's tern	**Wetland** (non-forest) **Water** (stream, lake, reservoir) **Barren** (beach)	In the Midwest, this species occupies freshwater sites usually inhabiting marsh-bordered lakes (slightly larger than those preferred by black terns) associated with the marshes vegetated with *Phragmites* spp., *Typha* spp., and *Scirpus* grasses. Cattail stands and detrial cattail mat seem an important factor of breeding habitat. It prefers to nest on high, dry substrates, such as muskrat houses, where they construct large nests from marsh vegetation. A stable water level may be important as many nests are lost to flooding.	State-E	Cook	Overall habitat potential for this species is low due to the small size of water bodies.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Tyto alba	common barn owl	**Urban** (residential) **Agricultural** (crop, pasture, orchard, groves, nurseries) **Wetland** (non-forest)	The barn owl occurs in open and partly open areas often near human habitation, such as residential and agricultural areas, old fields and woodland edges. Nests are placed in silos, steeples, grain elevators, abandoned buildings, and hollow trees.	State-E	Cook	While actual nesting sites would not be available in the right-of-way, grassland and hedgerow habitat would support small mammals and other food sources.
Aflexia rubranura	red-veined leaf hopper	**Grassland** (prairie)	Occurs in large prairie area that have populations of prairie dropseed (*Sporobolis heterolepis*). It is known to occur near Midewin Tallgrass Prairie, and it can survive in small patches along the railroad.	State-T	Will	Its presence has been correlated with plant populations of prairie dropseed (*Sporobolis herterolepis*). Within the project corridor concentrations of prairie dropseed were noted at 25 locations.
Phalacrocorax auritus	double-crested cormorant	**Wetland** (Forest) **Water** (Stream, lake, reservoir) **Barren** (rock)	This species occupies lakes, rivers, swamps, and coasts depending primarily upon open water for fishing. In Illinois, it prefers large lakes and rivers, where it nests in trees and occasionally on artificial structures. Barren, rocky islands of lakes and rivers or the tops of cliffs overlooking open water may also be useful nesting sites.	State-T	Cook, Will	Abandoned stripmine lakes along the UP alignment from MP 54.00 to 57.00 offer moderate habitat potential. Open water near MP 31.50 on the IC mainline offers potential fishing areas.
Catharus fuscescens	veery	**Water** (stream, lake) **Wetland** (forest) **Forestland** (deciduous, evergreen, mixed)	In Illinois the veery usually occurs in moist deciduous woods with relatively dense understory, but it also has nested in savannas, bogs, and successional fields. It is estimated that at least 20 hectares of forest habitat is needed to maintain viable populations of this species.	State-T	Cook, Kankakee, McLean, Will	Moderate habitat potential was found for this species along the IC mainline alignment near MP 30.00. Many other areas along the UP offer wooded habitat, but of more limited size.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Clonophis kirtlandii	Kirtland's snake	**Wetland** (forest) **Water** **Urban** **Grassland** (meadow)	Occurs in wet meadows, open swamp-forests, reservoirs, and occasionally wet, vacant urban areas.	State-T	Cook, McLean, Sangamon, Will	In the project area it is restricted to Sangamon and County.
Hesperia ottoe	ottoe skipper		Sandy areas, including sand prairies, dune, and loess-sand hill prairies. Dependent upon relatively undisturbed sand-prairie habitat. In Illinois, the larval food plant is suspected to be little blue stem (*Andropogon scoparius*), and adults feed on blazing star (*Liatris* spp.), pearly everlasting (*Anaphalis margaritacea*), and purple coneflower (*Echinacea purpurea*).	State-T		Although not recently recorded in the study area, potential habitat may be present.
Lanius ludovicianus	loggerhead shrike	**Agricultural** (crop, pasture) **Urban** (residential) **Forestland** (deciduous, evergreen)	In the Midwest, this species inhabits open, agricultural area interspersed with grassland habitat. The use of wheat, hay and abandoned fields is limited by the presence or absence of surrounding preferred hedgerows and trees, mainly osage orange. Most of the nests found in Illinois are in osage orange, honey locust, red cedar, and rose.	State-T	Cook, Grundy, Logan, McLean, St. Clair, Sangamon, Will	Moderate to good loggerhead shrike habitat is available in scattered areas of central Illinois. These include sections of the UP near MP 208.00, 212.00, and 213.00.
Nyctanassa violacea	yellow-crowned night heron	**Agricultural** (crop, pasture) **Forestland** **Wetland** **Water**	Wetlands for foraging and bottomland forest for nesting.	State-T	Cook, Jersey, St. Clair, Will	Possible habitat exists in the woodlands interspersed with wetlands along the UP south of Wilmington between MP 54.00 and 57.00.

Species	Common Name	Land Use and Land Covers	Environmental Associations	Status	County	Potential for Occurrence
Podilymbus podiceps	pied-billed grebe	**Wetland** (non-forest) **Water** (stream, lake, reservoir, bay)	Found on freshwater ponds, streams, and marshes with emergent water plants; also found along open waters in marshes and shores of inlets and bays. Prefers ponds less than 7 hectares especially with dense stands of emergent vegetation. Associated with both seasonally and flooded wetlands. Uses cattail, bulrush, burreed, spike rush, arrowhead.	State-T	Cook, Grundy, McLean, Madison, St. Clair, Sangamon, Will	This habitat type occurs in areas south of Wilmington on the UP alignment, as well as other small wetland pockets along the corridor but is generally adjacent to of outside the right-of-way.
Pseudacris streckeri illinoensis	Illinois chorus frog		Open sandy areas of river lowlands. Ideal habitat of this type is available on the central Illinois sand prairies, adjacent to the Illinois River.	State-T	Madison	A threatened species in Illinois; has been documented at a location in the general area of Pontoon Road (MP 272.70) along the UP in Madison County. However, field monitoring during 1998 determined that this species was not present.
Rallus elegans	king rail	**Agriculture** (crop, pasture) **Water** (stream, lake, bay) **Wetland** (non-forest)	Found in marshes, shrub swamps, ponds, stream side, roadside ditches, mudflats or upland fields.	State-T	Cook, Grundy, Madison, St. Clair, Will	Potential habitat for this species is scattered along the project corridor in areas bordering and adjacent to the right-of-way.

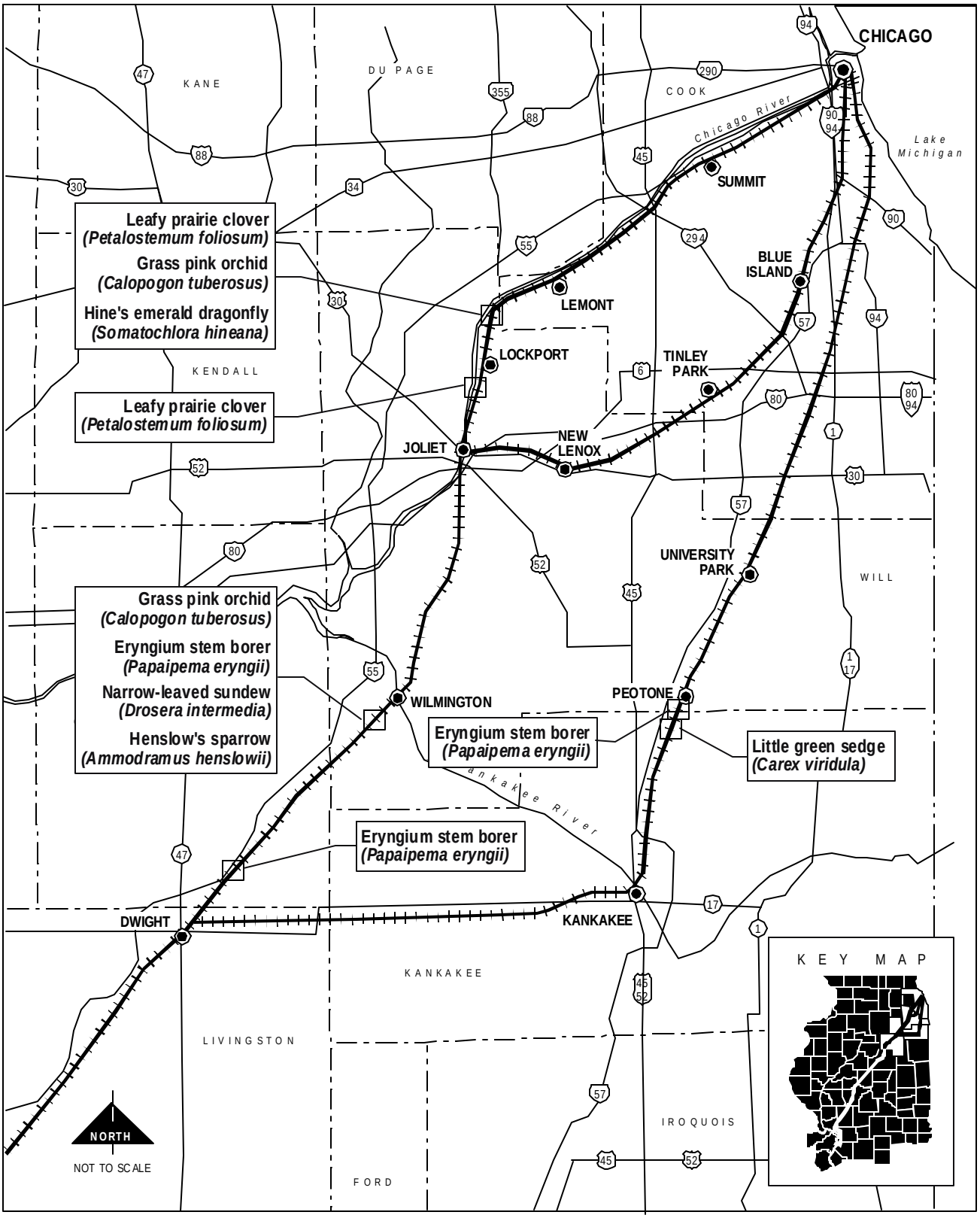


FIGURE 2.9-3A

CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT

THREATENED AND ENDANGERED SPECIES LOCATIONS

(Chicago to Pontiac)

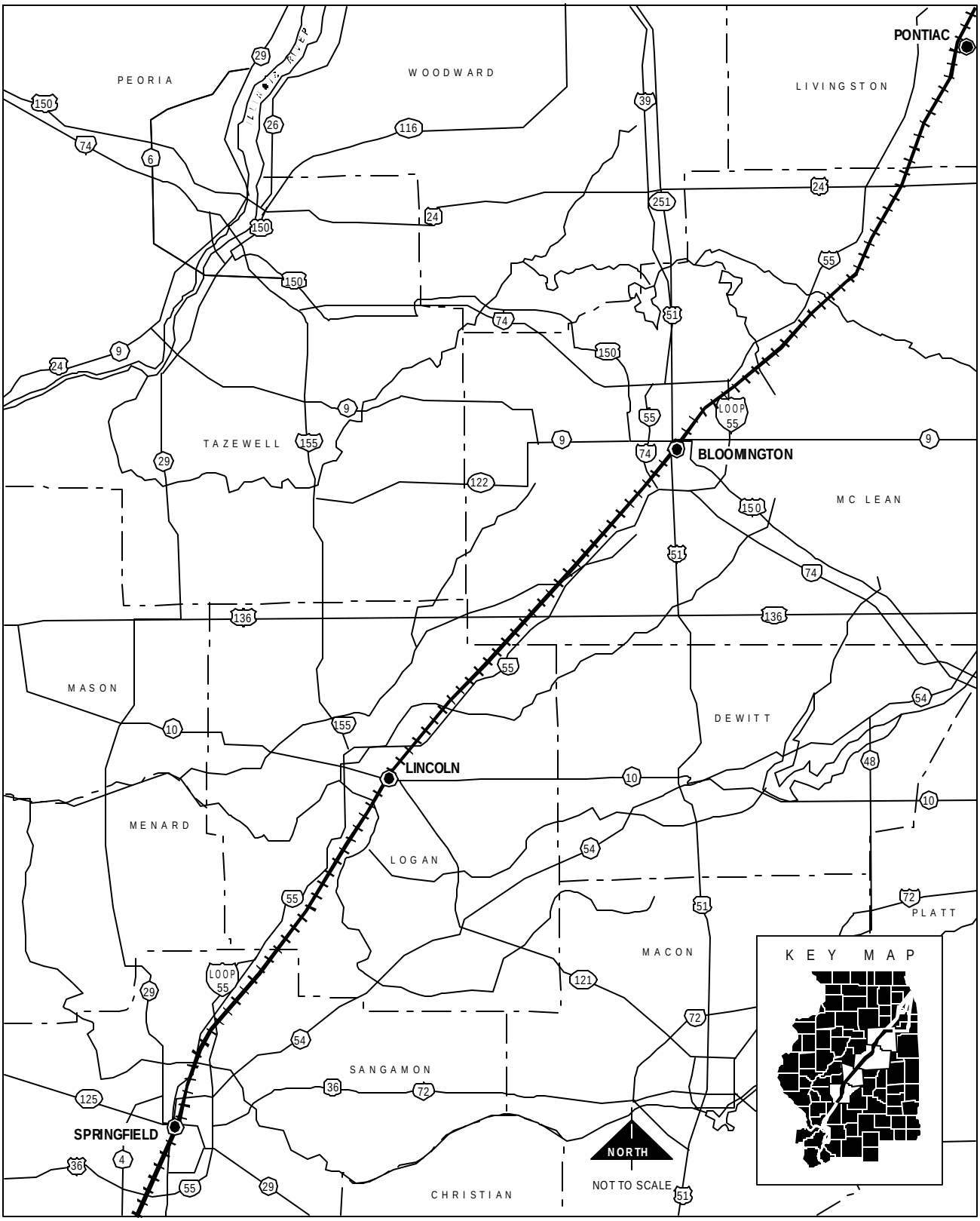


FIGURE 2.9-3B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
THREATENED AND ENDANGERED SPECIES LOCATIONS
(Pontiac to Springfield)

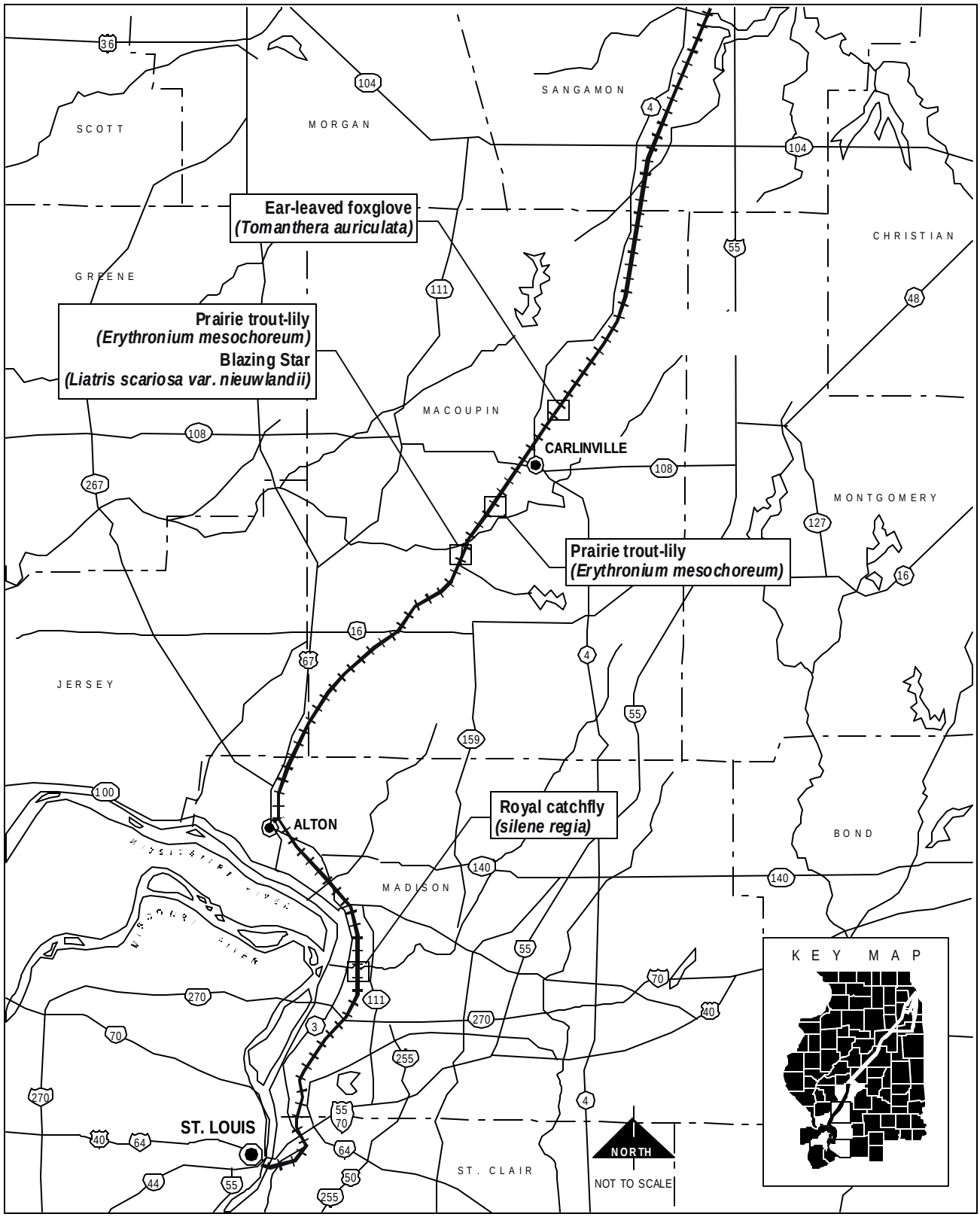


FIGURE 2.9-3C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
THREATENED AND ENDANGERED SPECIES LOCATIONS
(Springfield to St. Louis)

Table 2.9-5
NATURAL AREAS WITHIN 1.6 KILOMETERS (ONE MILE) OF THE PROJECT AREA

	Status		Type of Site[1]			
Natural Area	**Managed**	**Non-managed**	**INAI**	**INP**	**NNL**	**NHL**
Alton Geological Area		x	x			
Braceville Railroad Prairie		x	x			
Braidwood Dunes and Savanna	x		x	x		
Carlinville Railroad Prairie		x	x			
Carpenter Park	x		x	x		
Denby Prairie	x		x	x		
Elkhart Hill		x	x			
Funks Grove National Natural Landmark Nature Preserve State Park	x		x	x	x	x
Godley Railroad Prairie		x	x			
Hitts Siding Prairie	x		x			
Illinois & Michigan Canal	x					x
Joliet Army Ammunition Plant	x		x			
Kankakee River		x	x			
Lemont Bluff Geological Area		x	x			
Lemont East Geological Area		x	x			
Lockport Prairie East		x	x			
Long Run Seep	x		x	x		
Mackinaw River		x	x			
Mazonia Railroad Prairie		x	x			
Ocoya Geological Area		x	x			
Paw Paw Woods	x		x	x		
Salt Creek		x	x			
Stubblefield Woodlots Nature Preserve	x			x		
Wilmington Geological			x			

Source: IDNR 1996a.

1 - INAI = Illinois Natural Areas Inventory, INP = Illinois Nature Preserve, NNL = National Natural Landmark, NHL = National Heritage Landmark

2.11 HISTORIC AND ARCHAEOLOGICAL RESOURCES

2.11.1 Historic Sites and Resources

2.11.1.1Methods for Determining Historical Significance

The methodology used for determining historical significance for this project contained two primary facets. First, a literature search and background research was conducted. Resources reviewed included standard county histories, studies on the various communities along the alternatives and any available historic maps, including Sanborn fire insurance maps and plat maps. Additional sources consulted included the various site inventory files at the Illinois Historic Preservation Agency and the National Register of Historic Places (NRHP) listings. This historical material chronicles the development within the HSR corridor and helps identify what historical processes, events or activities may have occurred. This information is critical because it identifies cultural resources that could be eligible for the National Register under Criterion A or B that exist within the project's Area of Potential Effect.

The second facet focused on the visual impact of the buildings adjacent to the various crossings and proposed construction areas where additional right-of-way will be required. Accordingly, potential impact areas were surveyed and buildings noted that offered some visual interest or potential for National Register eligibility under Criterion C.

2.11.1.2Potentially Affected Historic Resources

The above-ground resources review consisted of an evaluation of the areas surrounding those construction projects that will require additional right-of-way and the areas surrounding each highway-railroad at-grade crossings in the project area. Outside of these areas, no surveys were conducted because there is no potential for impact to above-ground resources. The results of above-ground resources review conducted for this project are documented in a report entitled Literature Search and Preliminary Historic Resources Survey, High Speed Rail: Chicago to St. Louis. The conclusions in this document recommend further study at 61 locations in the project area where there could be impacts to resources that may be eligible for listing on the NRHP.

Of the 61 locations, 40 are in the vicinity of highway-railroad at-grade crossings where improvements are proposed that will not require additional right-of-way (e.g., pedestrian bell and flashers, electric lock gates, conventional gates, vehicle arresting barriers, and two pedestrian grade separations). At five other locations, the recommendations for grade crossing treatment improvements have been subsequently modified to projects that will not require additional right-of-way.

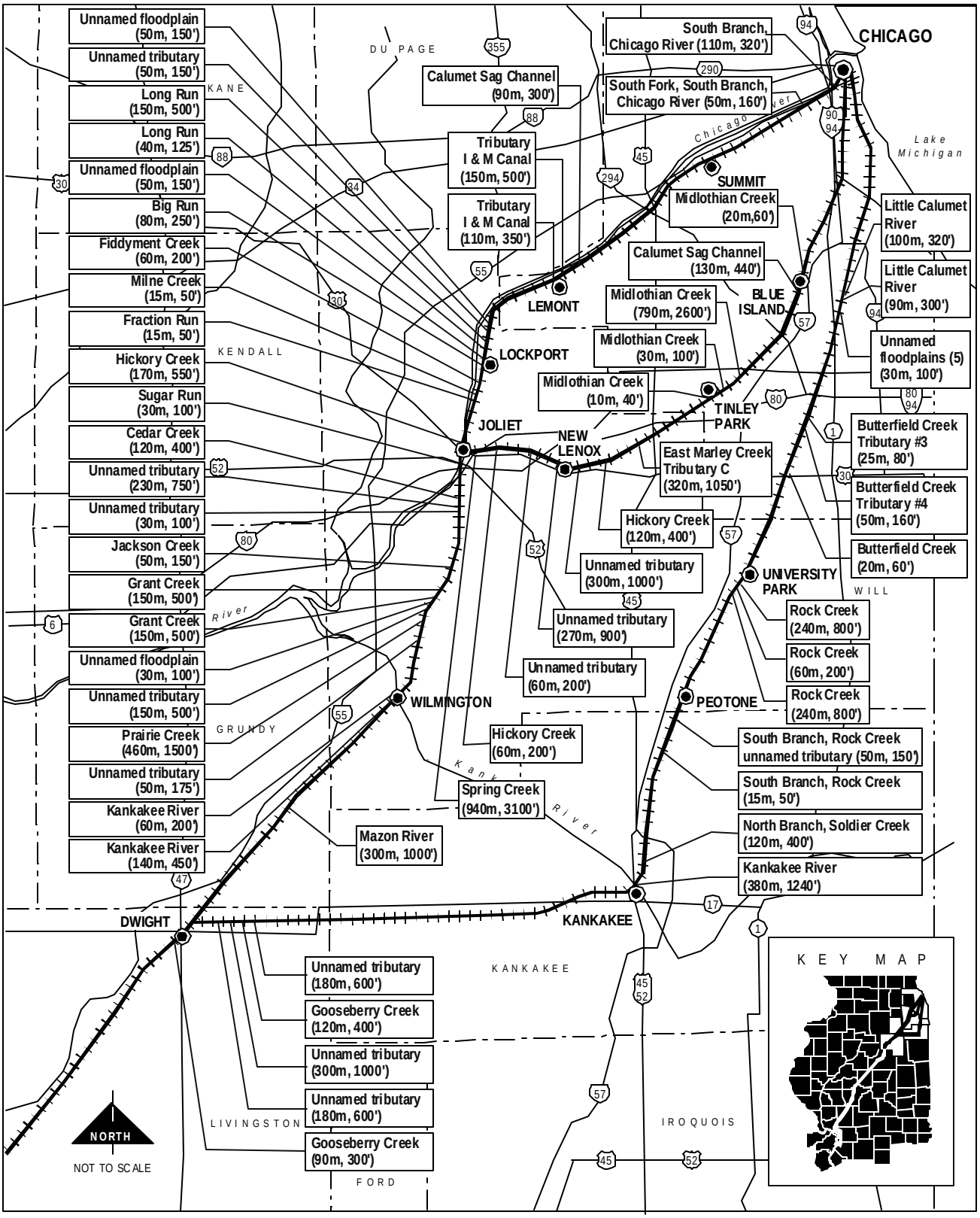


FIGURE 2.10-1A
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
100-YEAR FLOODPLAIN CROSSINGS
(Chicago to Pontiac)

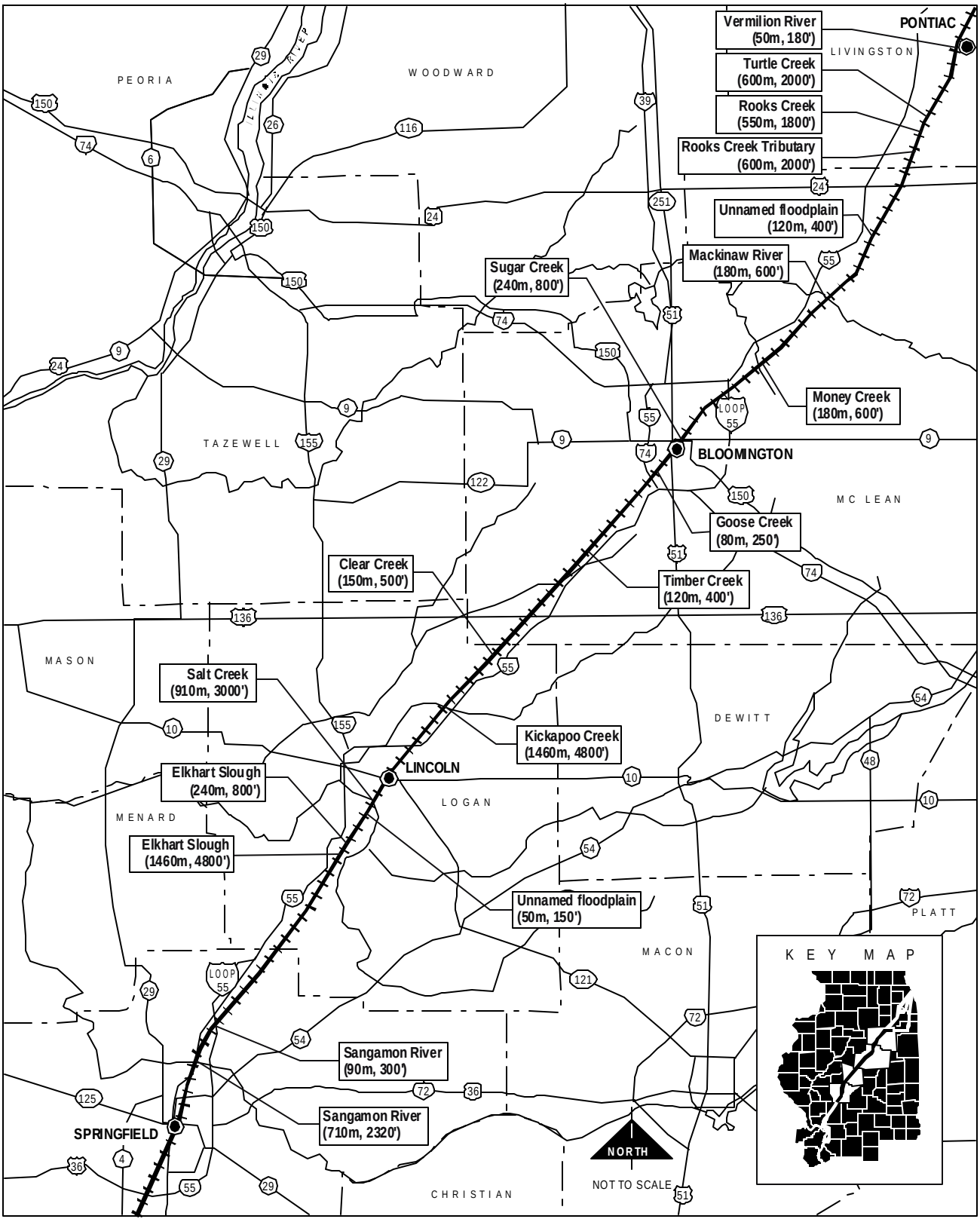


FIGURE 2.10-1B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
100-YEAR FLOODPLAIN CROSSINGS
(Pontiac to Springfield)

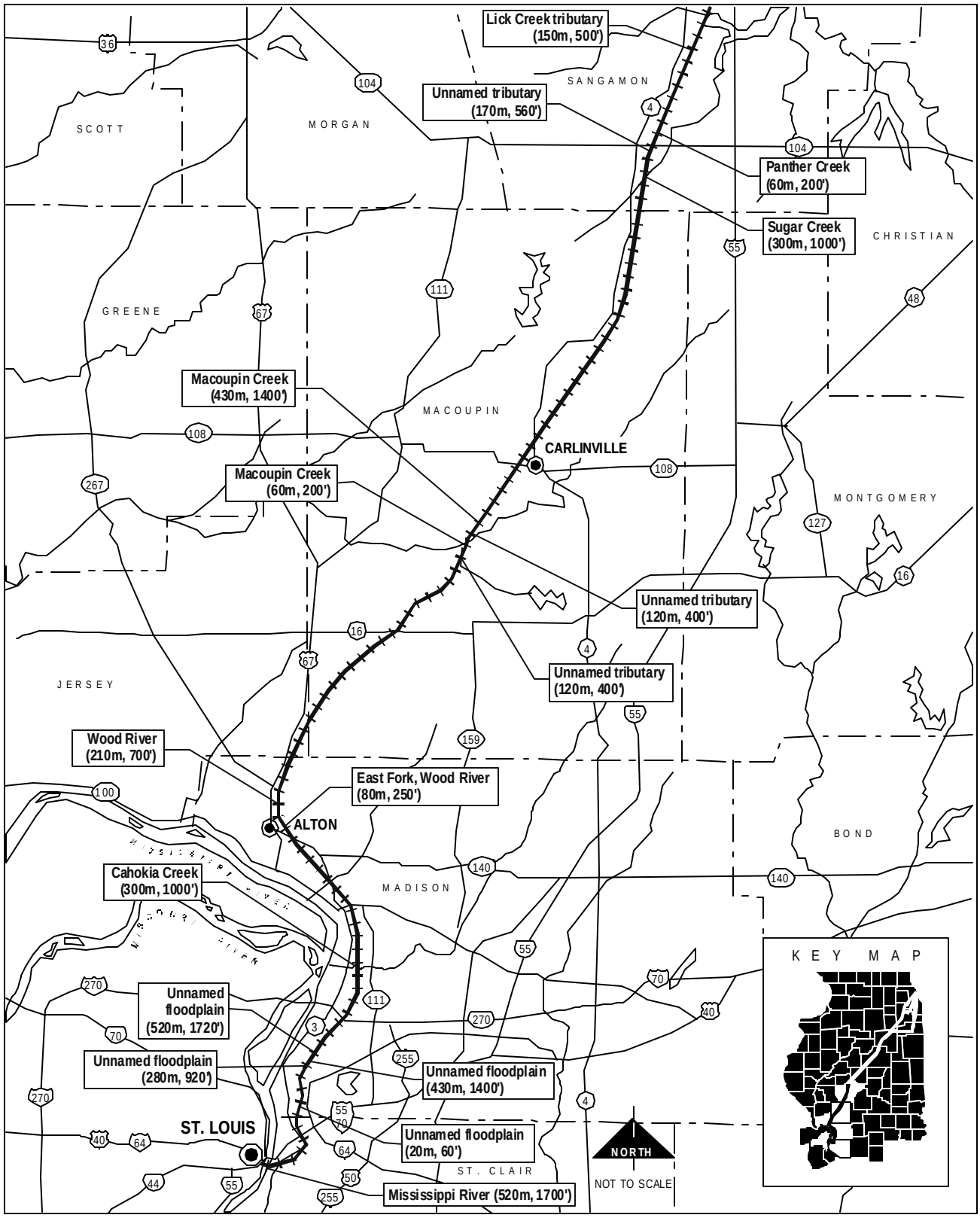


FIGURE 2.10-1C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
100-YEAR FLOODPLAIN CROSSINGS
(Springfield to St. Louis)

Six locations were recommended for further study in areas where full site access was not available at the time of initial field review to determine the presence of any above-ground structures. Subsequent review of aerial photography and field review indicate there are no above-ground structures in any of these six locations. Ten additional locations are in areas where no historic resources will be displaced but where impacts to the structure's or district's historic setting could occur as a result of the provision of a frontage/service road, grade separation, or station. See Section 5.11 for discussion of potential impact.

2.11.2 Archaeological Resources

2.11.2.1Methods for Determining Archaeological Significance

Two methods were utilized to determine archaeological significance in the HSR project area. First, an examination of the Illinois Archaeological Survey (IAS) files housed at the University of Illinois in Champaign-Urbana and at the Illinois State Museum in Springfield was conducted to determine the location of previously recorded sites within the project area. Additional information such as soil studies; reports of regional geography; consultation of regional archaeologists; and personal interviews with local land owners was referenced prior to field investigation. Second, field investigations were conducted within the HSR project area. Three field techniques, which are described below, were used when conducting these investigations.

1. Potential impact areas located in highly developed urban areas and other locations, where substantial disturbances or total destruction of original soils (e.g. grading, paving or landfill) has occurred, were subject to visual inspection.

2. In areas of plowed agricultural fields, where ground surface visibility exceeded 50 percent, visual inspection of the crossing area was conducted by pedestrian survey method at intervals ranging from five to 15 meters (15 to 50 feet).

3. In areas where ground surface visibility was less than 50 percent, shovels and posthole diggers were utilized to excavate small sampling pits below the ground surface at intervals ranging from five to 15 meters (15 to 50 feet).

2.11.2.2Known Archaeological Sites and Resources

As of September 1998, the HSR area in its entirety was subject to a Phase I archaeological survey. Ten previously reported sites were relocated within the project area. Of these ten, only two are recommended for Phase II archaeological testing. One site, located within the vicinity of TR 234 (MP 231.00) in Macoupin County has a potential for subsurface features. Another site located within Madison County in the vicinity of Maryville Road (MP 270.70) is a high probability area. The remaining eight sites are not recommended for further archaeological testing.

During the course of the surveys conducted for this project, no archaeological sites associated with known American Indian tribal units were encountered. Additionally, there were no mounds or cemeteries identified within the project area.

2.12 FOREST PRESERVES AND PARKS

An inventory of forest preserves and parks within 1.6 kilometers (1.0 mile) of the railroads in the HSR project area was conducted. Approximately 320 forest preserves and parks are located within 1.6 kilometers (1.0 mile) of these railroads. Of these, approximately 70 are directly adjacent to one of the railroads considered as part of an alternative alignment. Table 2.12-1 provides a summary of the number of parks and forest preserves by county. A complete listing of these facilities is provided in Appendix A-2.

Table 2.12-1
FOREST PRESERVES AND PARKS
within 1.6 kilometers (one mile)/adjacent to tracks

	RAILROAD				
COUNTY	**IC-Joliet Line**	**Union Pacific**	**IC Mainline**	**Norfolk Southern**	**Rock Island District**
Cook	29/6		75/20		60/11
Will	12/3	15/4	4/4		7/2
Kankakee			9/1	6/1	
Grundy		4/1			
Livingston		18/3		0/0	
McLean		20/3			
Logan		10/2			
Sangamon		19/2			
Macoupin		10/1			
Jersey		0/0			
Madison		10/2			
St. Clair		1/0			
St. Louis		11/0			

Source: De Leuw, Cather & Company, August 1999.

Section 4(f)/6(f) Resources:

Section 4(f) of the 1966 Department of Transportation Act (49 U.S. Code Sec. 1653(f)) specifies that publicly owned land from a park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or any land from an historic site of national, state or local significance, may not be used for transportation projects unless: 1) there is no feasible and prudent alternative to the use of such land; and 2) proposed projects include all possible planning to minimize harm. Public school properties are typically not classified as Section 4(f), unless their facilities support an organized public recreational activity such as youth soccer or serve a community recreational purpose (e.g., a playground that serves a neighborhood recreational need after school hours).

Section 6(f) of the Land and Water Conservation (LAWCON) Act (PL 88-578 [16 U.S. Code Sec. 460L-4 - 460L-11]), as amended, was enacted to ensure that property acquired or developed with LAWCON assistance is retained and used for public outdoor recreation use. Any property so acquired or developed shall not be wholly or partly converted to other than public outdoor recreation uses without the approval of the Secretary of the U.S. Department of the Interior.

Many of the properties discussed in this section, as well as in Sections 2.9.5, Natural Areas, and 2.11, Historic and Archaeological Resources, can be classified as Section 4(f) resources. Additionally, some of the properties can be classified as Section 6(f) resources. However, acquisition of Section 4(f) or Section 6(f) property will not occur as part of this project. See Sections 5.9.5, 5.11, and 5.12 for the discussion on impacts to these resources.

2.13 ENERGY CONSUMPTION

Current energy consumption by the four basic transportation modes — air, rail, bus, and automobile — used for intercity travel in the HSR corridor was calculated for this project. This section describes the methods used and the assumptions made to estimate the current energy use and presents the current energy use estimates. Estimates of energy consumption for the project alternatives are presented in Section 5.13.

2.13.1 Methods and Assumptions

The basic data were either obtained from previous studies or generated as described below:

- **Ridership Estimates.** Existing (1998) person trip information was estimated by updating the 1991 person trip information provided in the Ridership Forecast Technical Report, prepared by Wilbur Smith Associates (1994), and is shown in Table 2.3-1.

- **Person-Kilometers (Person-Miles) of Travel.** The annual person-kilometers (person-miles) of travel were estimated by multiplying the distance between the respective primary rail service cities (Chicago, Joliet, Bloomington, Springfield, Alton and St. Louis) by the total number of person trips, by mode, traveling between these cities. The distances to "other" cities were based on the average of distances to the four secondary cities with rail service (Dwight, Pontiac, Lincoln and Carlinville).

- **Energy Consumption.** Energy consumption estimates for rail were derived by simulating existing operations. Energy consumption rates were used to calculate annual consumption for the other three modes. The rates were obtained from the FEIS prepared for the NEC Improvement Project (USDOT, 1994).

The distance measures used to calculate person-kilometers (person-miles) of travel are those used for the operational simulation of the high-speed rail alternative alignments (Corporate Strategies, Inc., 1996). These distances, while used for all four modes, represent distances by rail from downtown railroad station to downtown railroad station. In actuality, distances vary slightly by mode. Additionally, local travel required to reach the main line of each mode is not included. The difference between reaching a rail or bus station, an airport, or a freeway within the same community was considered to be negligible as far as these calculations were concerned.

Since each of the four modes uses a different type of fuel, comparison of the energy consumed by each required conversion to a common base unit. The British Thermal Unit (BTU) was the measure used to compare the total annual energy consumed by each mode.

Because of the nature of alternative modes and the way they were evaluated, energy consumption estimates for rail were derived somewhat differently from the other three modes. The frequency of trains, or headways, typically define the rail service. Capacity is further varied by changing the train consists. This makes it somewhat more difficult for rail service to precisely match the capacity to the actual demand. For this reason, the rail energy consumption estimates were based on simulation of projected rail operations and use of particular equipment. The rail energy consumption rate as calculated for Chicago - St. Louis Amtrak service is 1,630 BTUs per person-kilometer (2,620 per person-mile).

Energy consumption by other modes was developed based on the estimated person-kilometers (person-miles) of travel and the energy consumption rates for these modes; the consumption rates used are shown below (USDOT, 1994).

- Passenger Automobile: 2,200 BTUs per person-kilometer (3,600 per person-mile)
- Intercity Bus: 600 BTUs per person-kilometer (1,000 per person-mile)
- Aircraft: 2,900 to 5,700 BTUs per person-km (4,600 to 9,200 per person-mile)

For air travel energy consumption, an average rate of 4,300 BTUs per person-kilometer (6,900 per person-mile) was used. Using these rates, the overall energy consumption rate for intercity travel in the HSR corridor was estimated at 2,500 BTUs per person-kilometer (4,000 per person-mile).

2.13.2 Current Energy Use

The annual person-kilometers (person-miles) of travel by mode are summarized in Table 2.13-1. The figures in this table indicate that in 1998, Amtrak passengers traveled a total of 81 million person-kilometers (50 million person-miles), or two percent of the total person-kilometers (person-miles) traveled in the corridor, via rail. Approximately 84 percent of the total 3,829 million corridor person-kilometers (2,374 million person-miles) were made by automobile. Airlines attracted 13 percent of the total person-kilometers (person-miles) of travel.

The estimate of current usage of energy by Amtrak diesel train service was developed assuming three round trips daily between Chicago and St. Louis. Operational simulation showed that with the F40 locomotive pulling a four car train, an average round trip between Chicago and St. Louis consumes approximately 3.3 kiloliters (858 gallons) of diesel fuel, depending on the number of stops made. Using these simulation results, it was estimated that rail service consumes approximately 3,600 kiloliters (940,000 gallons) of fuel per year. At 534 BTUs per kiloliter (141,000 per gallon) of diesel fuel, the current energy use by rail service was estimated at 132 billion BTUs per year.

Table 2.13-1
EXISTING (1998) ANNUAL PERSON-KILOMETERS (PERSON-MILES) OF TRAVEL AND ENERGY CONSUMPTION

	Air	Rail	Bus	Automobile	Total
Person-Km. (Person-Miles) (millions)	482 (299)	81 (50)	32 (20)	3234 (2005)	3829 (2374)
Energy Consumption (billions of BTUs)	2062	132	20	7217	9432

Source: De Leuw, Cather & Company, August 1999.

For the other three modes — automobile, bus, and aircraft — the current energy use in the corridor was estimated by multiplying the total person-kilometers (person-miles) traveled in the corridor in 1998 for each mode by the respective energy consumption rate for that mode. Annual existing energy consumption for the HSR corridor is listed by mode in Table 2.13-1.

The rail system consumes approximately 1.4 percent of all energy used for intercity passenger service in the HSR corridor while serving two percent of all person-kilometers (person-miles) of travel.

2.14 SPECIAL WASTE

Environmental Site Assessments for man-made hazards in the HSR project area were conducted in accordance with "A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation (IDOT) Highway Projects" except that no subsurface investigation was authorized since it is unlikely that the testing would be valid at the time of land acquisition or construction. The sites (numbered from 1 to 10) where preliminary environmental site assessments were conducted are discussed below and shown on Figures 2.14-1A through 2.14-1C. As of August 1997, soils contaminated from petroleum products only can be managed as municipal waste. Known hazardous waste sites are identified in the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS).

2.14.1 Hazardous Waste

The USEPA listing (February 2, 2000) of potential, suspected and known hazardous waste or hazardous substances sites in the project area (i.e., the CERCLIS list) has been reviewed to ascertain whether the proposed project will involve any listed sites. As a result of this review, it has been determined that improvements associated with this project will not require right-of-way or an easement from a listed CERCLIS site.

2.14.2 Undetermined Waste Status

Ten Preliminary Environmental Site Assessments (PESA) for special waste were conducted by the Illinois Department of Transportation, Bureau of Railroads. The assessments concluded that an

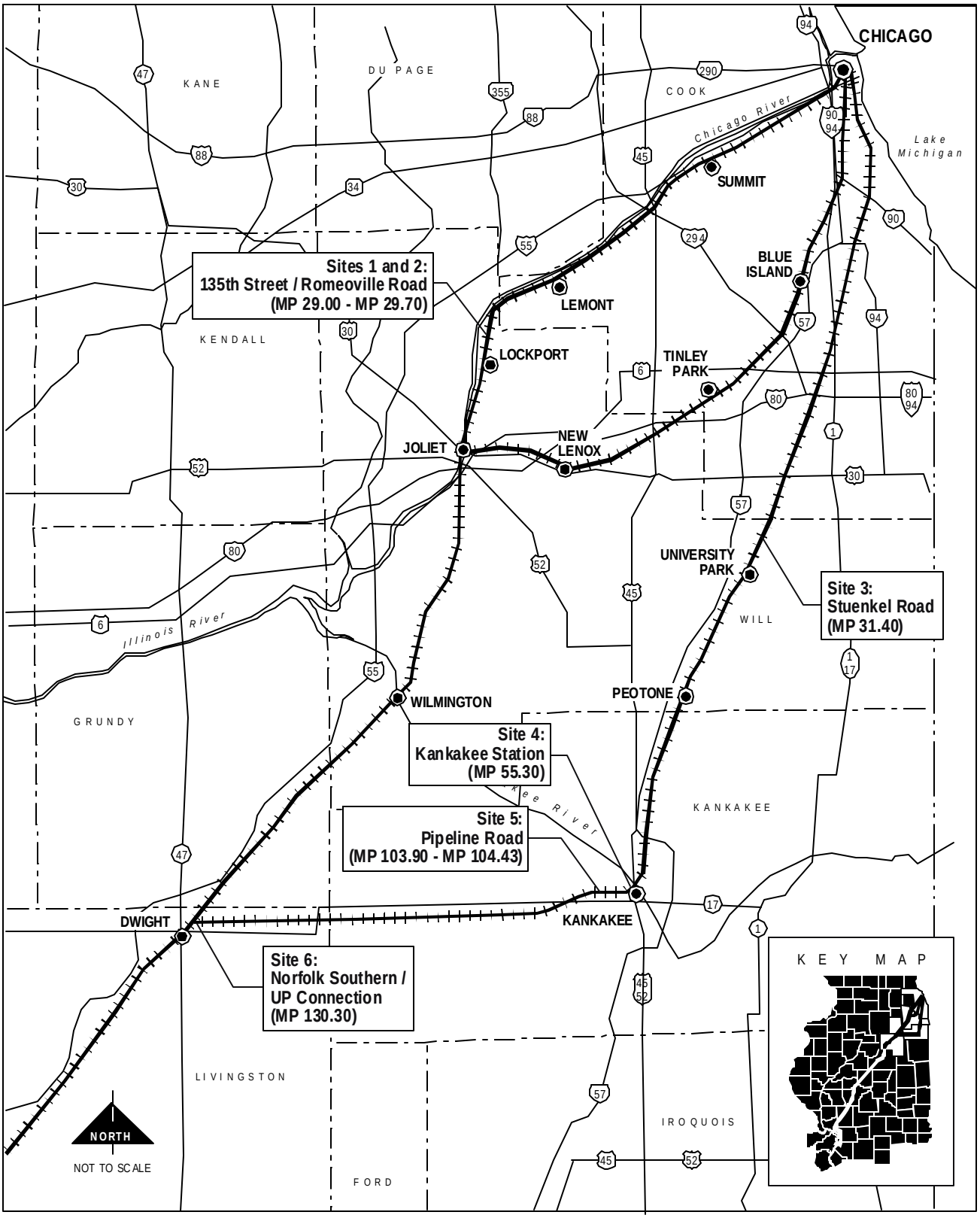


FIGURE 2.14-1A

CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT

LOCATIONS OF PRELIMINARY ENVIRONMENTAL SITE ASSESSMENTS

(Chicago to Pontiac)

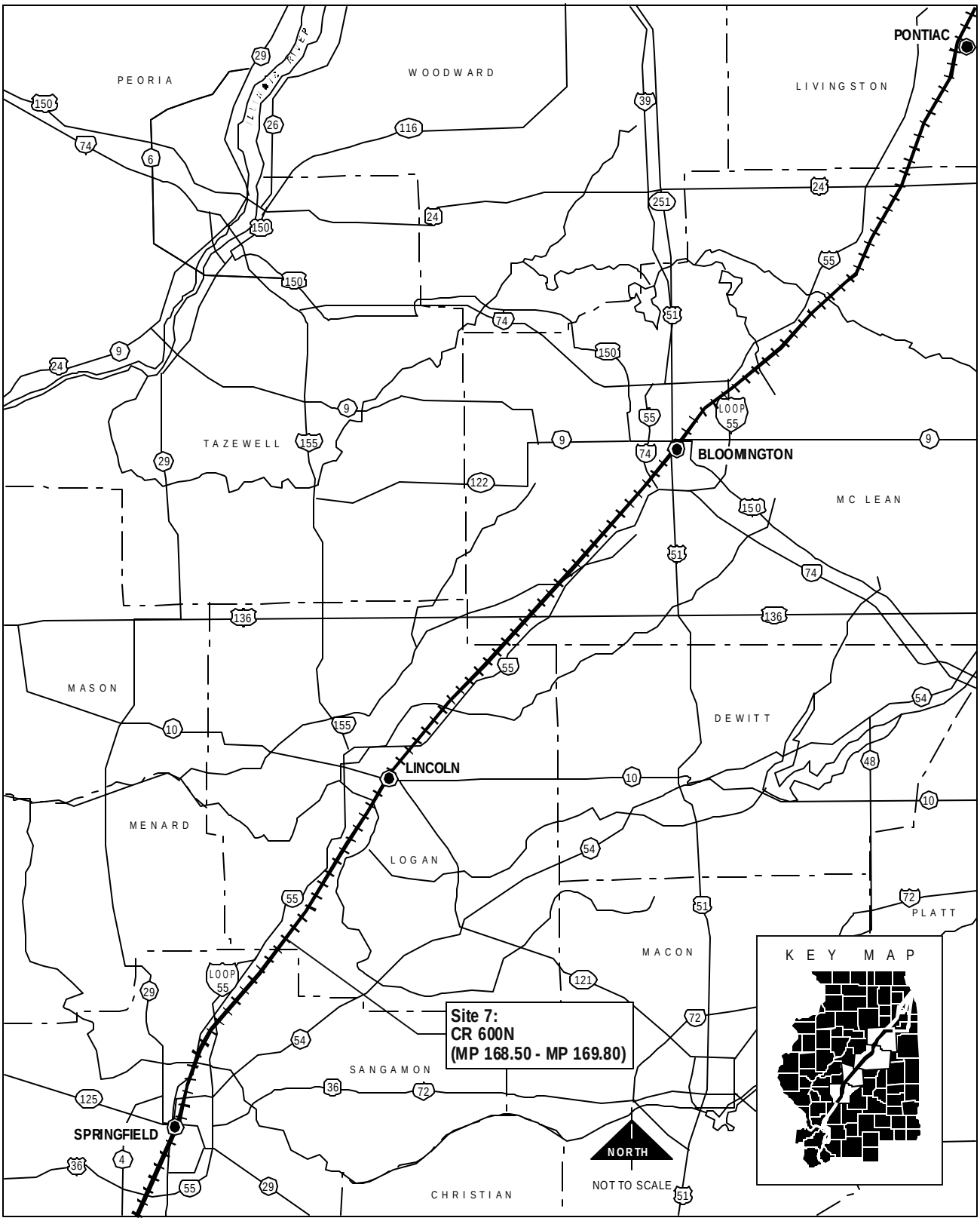


FIGURE 2.14-1B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
LOCATIONS OF PRELIMINARY ENVIRONMENTAL SITE ASSESSMENTS
(Pontiac to Springfield)

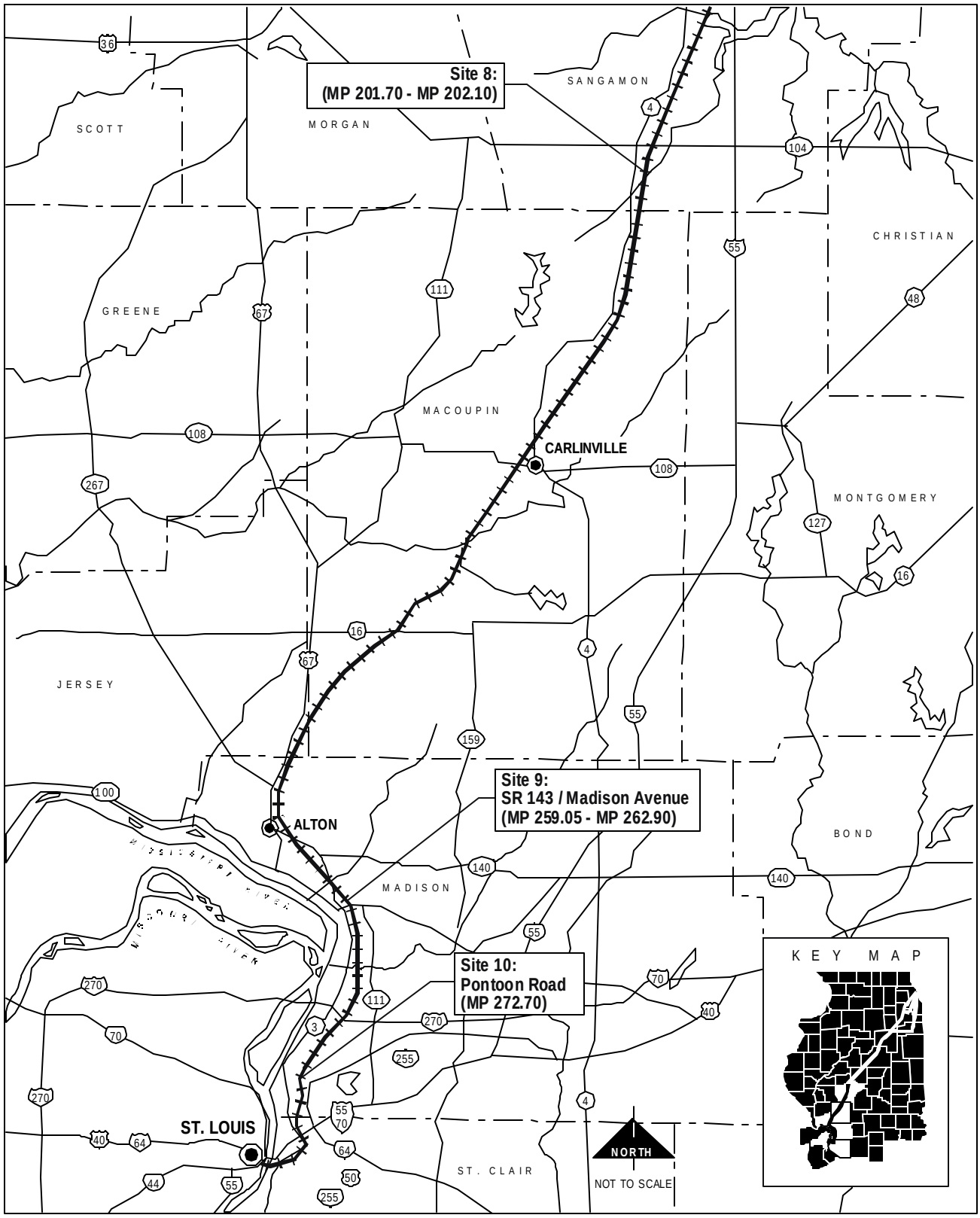


FIGURE 2.14-1C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
LOCATIONS OF PRELIMINARY ENVIRONMENTAL SITE ASSESSMENTS
(Springfield to St. Louis)

alternative could involve special waste sites. Further investigations should be conducted to determine risks and liabilities of the involvement prior to land acquisition. A summary of the findings for each site is provided below.

Sites 1 and 2:

The Citgo Refinery and Citgo gasoline station are located in the vicinity of the 135th Street/Romeoville Road crossing of the IC Joliet Line, just south of Lemont. There have been four documented leaking underground storage tank (LUST) incidents on the refinery site property. These incidents included the removal of 15 underground storage tanks (UST) from various locations. Property owners received a "No Further Action" letter in connection with one of the LUST incidents in February of 1991. The gasoline station retails fuel from three gasoline USTs and one diesel UST. In the vicinity of the Refinery, seven active and three abandoned petroleum pipelines were identified. Additionally, the site of a former sand and gravel mining operation, known as Romeo Sand and Gravel, is located on the southwest corner of the 135th Street/IC Joliet Line crossing.

Site 3:

This site is located at the Stuenkel Road crossing of the IC mainline near University Park. The EMRO Marketing Gasoline Station is located on the southwest corner of this crossing where there have been two LUST incidents. There are four registered USTs at this site. There is also an abandoned UST at the southeast corner of this crossing. Additionally, there is a petroleum pipeline located in the area, and four residences that may be impacted may contain asbestos-containing materials.

Site 4:

This site is located in Kankakee where the IC mainline and the Norfolk Southern cross. A large pile of railroad ties is located on the northeast portion of this site. It is approximately 5 meters (15 feet) high and 60 meters (200 feet) long. Two separate piles of garbage, one containing construction debris and roofing materials, are also located on this site. This site does not appear on any of the landfill databases checked for this project.

Site 5:

This site is located along the Norfolk Southern, west of the IC mainline. Phillip's Pipeline Storage is located within this area. No USTs with a status of "active" are registered to this facility.

Site 6:

This site is located in the area where the Norfolk Southern and the Union Pacific cross. There are two businesses — Crop Production Services and Hydrochem Industrial Service — located in this area with above-ground storage tanks (AST), containing liquid fertilizers and liquid and dry chemicals. The Hydrochem Industrial Service parcel is also listed as containing four active USTs. However, other information indicates that these tanks have been removed. A diesel fuel spill occurred near the intersection of Illinois Route 47 and the Union Pacific in September of 1992. Additionally, some of the buildings in the area that may be displaced may consist of asbestos-containing materials.

Site 7:

This site is located along the Union Pacific Railroad, south of Elkhart. The Elkhart Fertilizer Service Company is located on this site on the southeast corner of CR 600N and Route 66 in Logan County. No USTs are listed for this site; there are numerous ASTs, containing herbicides, nitrogen, ammonia, and diesel fuel. The ASTs appear to be well maintained, and no evidence of leaks or releases into the environment was apparent. There may also be a shaft that once provided access to Elkhart Mine towards the south end of the project area.

Site 8:

This site is located south of Auburn in Sangamon County between Union Pacific MP 201.7 and 202.1. No USTs are listed for this site. The site consists of numerous locations where random dumping has occurred. Fuel spills on this site may have occurred in the past. The entire area may also be undermined, and buildings may consist of asbestos-containing materials.

Site 9:

Site 9 is located in Madison County between St. Louis Avenue (MP 259.05) and Illinois Route 143/Madison Avenue (MP 262.90). Two gas stations were formerly located in the vicinity of the Illinois Route 143 crossing. When the property was vacated, the USTs were removed; this site is not on the most recent UST list. Several CERCLIS and LUST sites are also listed in this area. However, the improvements planned for this area will occur within the existing railroad right-of-way.

Site 10:

This site is located at the Pontoon Road crossing in Granite City. The site of a former business where four aboveground oil tanks were located is on the northwest corner of the Pontoon Road crossing. On the southeast corner of this crossing, there is a gas station that appears on the most recent LUST list. The northeast corner of this crossing is not listed on the most recent LUST and UST lists. However, historical records and interviews with adjacent property owners indicate that this parcel may contain an UST.

Section 3
ALTERNATIVES

Most of the previously proposed high-speed rail (HSR) systems in the United States have been modeled on the European and Japanese experience, with top speed capabilities of at least 150 miles per hour (mph)/240 kilometers per hour (kph) on dedicated right-of-way. These systems are very expensive to develop with estimated costs ranging from $5 to $9 million per kilometer ($8 to $15 million per mile). They frequently require new rights-of-way, extensive new track construction, installation of overhead catenary lines for electric-powered trains, and complete elimination of highway-railroad at-grade crossings. A 140 mph (225 kph) electric HSR system was evaluated during the preparation of the Financial and Implementation Plan. At the conclusion of that study, it was determined that the added revenues associated with the shorter travel times provided by the 140 mph (225 kph) service would not be sufficient to support the additional costs of an electrified system. As a result, a 140 mph (225 kph) electric HSR system is not evaluated as an alternative in this Draft Environmental Impact Statement (DEIS).

Following the release of the Financial and Implementation Plan, the Federal Railroad Administration (FRA) conducted a commercial feasibility study on HSR for the U.S. and published its findings in High-Speed Ground Transportation for America. It was concluded in this report that 90, 110, and 125 mph (145, 180, and 200 kph) HSR service would be commercially feasible in the Chicago - St. Louis corridor. Travel time estimates prepared for the Financial and Implementation Plan indicated that the present end-to-end passenger rail travel time of 5.5 to 5.75 hours between Chicago and St. Louis could be reduced to 3.3 hours with 125 mph (200 kph) as the maximum operating speed. However, after further analysis, it was determined that proposed maximum operating speeds should not exceed 110 mph (180 kph) through most of the HSR corridor because at speeds in excess of 110 mph (180 kph), positive protection, such as providing vehicle arresting barriers and closing or grade separating the crossings, is required at all retained at-grade crossings in accordance with FRA guidelines. Approximately 75 grade crossings in the corridor would be impacted if maximum operating speed were greater than 110 mph (180 kph). All of the crossings could not be closed because this would violate Illinois Commerce Commission (ICC) guidelines. Also, doing so would disrupt traffic flows and community cohesion as many of these crossings accommodate over 2,500 vehicles per day. Providing vehicle arresting barriers at all of the crossings would increase project costs by approximately $30 million. Grade separations have even a greater impact, as they can cost approximately $3 million per crossing; require land acquisition; and potentially displace structures. Reducing the maximum operating speed to 110 mph (180 kph) from 125 mph (200 kph) through most of the corridor would result in an end-to-end travel time increase of less than 10 minutes. For evaluation, the 110 and 125 mph (180 and 200 kph) systems were combined in to one alternative.

The 90 mph (145 kph) service was not evaluated in this DEIS because it was concluded in the Financial and Implementation Plan that systems with maximum operating speeds of less than 110 mph (180 kph) would require capital costs similar to a 110 to 125 mph (180 to 200 kph) system, while providing a much smaller service improvement. (See Section 3.2 for a more detailed discussion on alternatives dismissed.)

Based on conclusions presented in the Financial and Implementation Plan and other previous studies, the Illinois Department of Transportation (IDOT) developed an initial conceptual plan of Chicago - St. Louis HSR

passenger service which will operate on existing track with limited modifications thereby avoiding the extensive initial costs of the other high-speed rail systems. The premise underlying IDOT's high-speed rail concept as evaluated in this DEIS is that customers are sensitive to overall travel time, not maximum top speed. In Illinois, HSR implementation will consist of project elements that are cost effective but still produce major travel time reductions. These include:

- Use of existing rail infrastructure where possible (eliminating the need for all new track and right-of-way).

- Use of diesel-powered trains with top operating speeds of 110 to 125 mph (180 to 200 kph) rather than electric trains with top speeds of 150 mph (240 kph) or more (eliminating the need for the provision of overhead catenary wires and extensive grade crossing modifications).

- Improvements and additions to enhance track capacity and train operations that are cost effective, such as provision of new train control and communication systems; provision of limited areas of double track to allow for HSR trains traveling in opposite directions to pass each other with minimal delay; provision of additional siding track, as well as upgrading and extending existing siding track; and treatment of selected highway-railroad at-grade crossings.

- Modification in dispatching procedures to reduce conflict with freight traffic by giving priority to HSR trains.

The alternatives selected for evaluation in this DEIS are: 1) the No-Build alternative that includes the continuation of existing Amtrak service in the corridor, and 2) the Build alternative that includes a high-speed rail system with top operating speeds of 110 to 125 mph (180 to 200 kph) and three alignment options. As documented in this section, the alternatives were evaluated to determine if they meet the purpose and need for this project as defined in Section 1. The HSR alternative alignments will meet the purpose and need equally and therefore are evaluated in terms of environmental impacts, costs, service, and institutional viability. After a complete evaluation of each alternative's impacts and of comments received on the DEIS and at the public hearings, a decision will be made selecting a preferred alternative and, if appropriate, alignment.

3.1 ALTERNATIVES SELECTED FOR EVALUATION

3.1.1 No-Build Alternative

The No-Build alternative is comprised of the existing plus committed improvements to the existing intercity passenger rail system and the complementary intercity highway and aviation services and facilities in the Chicago - St. Louis corridor. The No-Build alternative is used as the baseline for comparison with the HSR alternative.

Amtrak, a quasi-public entity that leases track usage, operates the intercity passenger rail service in the corridor. Existing service consists of three daily round trips between Chicago and St. Louis with stops in Summit, Joliet, Dwight, Pontiac, Bloomington/Normal, Lincoln, Springfield, Carlinville, and Alton. From St. Louis, Amtrak service continues to Kansas City, Dallas, and Los Angeles. From Chicago, Amtrak service extends to all three coasts and Canada. Scheduled one-way travel times on the 453-kilometer (281-mile) route between Chicago and St. Louis range from five hours and 30 minutes to five hours and 45 minutes.

The Union Pacific Railroad (formerly the Southern Pacific Chicago St. Louis Corporation - SPCSL) tracks that Amtrak uses between Joliet and East St. Louis have recently been rehabilitated (new ties and continuously welded rail - CWR) with the assistance of $40 million in loans and grants provided by IDOT, additional loans from the FRA, and significant railroad investment. Additionally, the FRA has provided funds for a new route that is under construction between Granite City and East St. Louis that is scheduled for completion in the year 2000. No additional major improvement projects are planned for the tracks used along the Amtrak route. Therefore, no new construction, no grade crossing treatment modifications, and no acquisition of additional right-of-way will be required with the No-Build alternative. The only improvements to be made will consist of regular maintenance and rehabilitation of the track. If additional rail capacity is needed in the future to accommodate projected overall travel growth in the Chicago - St. Louis corridor, it is assumed that this will be accomplished by adding cars to existing trains, rather than adding additional trains.

The majority of intercity automobile travel in the Chicago - St. Louis corridor is accommodated on Interstate 55, which primarily runs parallel to the Chicago - St. Louis Amtrak route. Additionally, Interstate 57 connects Chicago, Peotone, and Kankakee. A typical automobile trip between Chicago and St. Louis takes approximately 5.5 hours. The only major improvement currently committed to either of these highways is major rehabilitation of Interstate 55 between Interstate 90/94 (Dan Ryan Expressway) and Interstate 294 (Tri-State Tollway) in the Chicago area. This project, however, does not include capacity expansion of the facility. Normal maintenance and minor highway improvements will continue as part of the No-Build alternative, but no major improvements such as adding lanes will be undertaken.

Approximately 150 daily flights are operated in the corridor among O'Hare, Midway, and Meigs Field in Chicago, Lambert Field in St. Louis, and the airports in Bloomington and Springfield (Official Airline Guide, 1999). Currently, no passenger carriers operate out of MidAmerica Airport in St. Clair County. Scheduled one-way flight time between Chicago and St. Louis is typically around 1.25 hours. No long-range planning information is available that could be used to project the number of future flights in the corridor. For the purpose of evaluation in this project, it is assumed that the number of corridor flights will increase proportionately to the projected air travel demand growth in the corridor.

Greyhound Lines, Inc. and other smaller carriers operate bus service in the Chicago - St. Louis corridor. A total of 28 routes operate daily in the corridor, with eight trips from Chicago to St. Louis and 12 trips from St. Louis to Chicago (Greyhound, 1999). Scheduled travel times for end-to-end service range from five hours and five minutes to over 11 hours. In addition to Chicago and St. Louis, intercity bus service in the corridor is also available from Joliet, Kankakee, Dwight, Pontiac, Bloomington (including Illinois State University), and Springfield. As with air travel, no long-range planning data is available to estimate the future number of bus trips that will operate between Chicago and St. Louis. Therefore, it is assumed that the number of bus trips will increase proportionately to the projected bus travel demand growth in the corridor.

Detailed discussions of the existing and future intercity transportation characteristics are provided in Section 2.3, Transportation Facilities and Services, and Section 4, Transportation Impacts.

The No-Build alternative will not meet the purpose and need of this project. The purpose of this proposal, as described in Section 1, is to enhance the passenger transportation network in the Chicago - St. Louis corridor, resulting in a more balanced use of its components. To achieve this, there must be a new or improved transportation mode with shorter travel times and enhanced reliability and safety. As described above, the No-Build alternative will be a continuation of existing Amtrak service and will not provide any operational or service improvements. Committed rail improvements in the corridor only consist of normal maintenance and rehabilitation. Additionally, this alternative will not alleviate any of the current problems regarding conflicts with freight traffic, grade crossing accidents, outdated signals and communication systems, and operating costs. Amtrak scheduled travel times between Chicago and St. Louis are comparable to travel times achievable by automobile and bus travel and over four times greater than air travel. On-time percentage for Amtrak service in the corridor is lower than the national average on-time percentages for Amtrak service and air travel, which are 72 and 82 percent, respectively. Without reductions in travel time or improvements to reliability and safety, the viability of rail passenger service as an alternative to air and automobile travel will not increase, and subsequently, travelers will not divert from those two modes.

There are no direct environmental impacts associated with the No-Build alternative (i.e., the environmental impacts associated with the current array of transportation choices and service attributes in the corridor will continue). However, this alternative is not considered an adequate solution to meet the existing and anticipated transportation needs of the corridor.

3.1.2 Build Alternative (High-Speed Rail)

High-Speed Rail passenger service is evaluated as an alternative to current Amtrak service that will address the existing rail passenger service problems identified in the corridor and that will serve as a more viable alternative to automobile, air, and bus intercity travel between Chicago and St. Louis. Passenger rail service, as evaluated in this document as part of the HSR alternative, will employ diesel-powered trains, possibly equipped with tilt suspension technology, with top operating speeds of 110 to 125 mph (180 to 200 kph). Rail passenger cars with tilt suspension can "lean" while traversing curves and as such sustain higher speeds than cars with "non-tilt" suspension. Cars with tilt technology, while more expensive than those without this technology, are more energy efficient and allow for shorter trip times, a more comfortable ride through curves, and potential economies associated with linkages to other high-speed rail corridors on which tilt technology may be required for efficiency, such as Chicago - Detroit.

Existing Amtrak trainsets consist of three- or four-car Horizon or Amfleet equipment, pulled by a standard Amtrak locomotive (PF40s or newer P32s) with 3000 horsepower engines. These locomotives are not capable of achieving speeds of 125 mph (200 kph). For the proposed HSR system, three different trainsets were evaluated. The first HSR trainset consists of three or four Horizon or Amfleet cars (the same as the current Amtrak trains) modified to permit 125 mph (200 kph) speeds and pulled by an F70 locomotive. The F70 is designed by the ElectroMotive Division of General Motors Corporation and has a 4000 horsepower engine. The second trainset consists of Talgo tilting passenger cars that would also be pulled by the F70 passenger locomotive. The third trainset includes a non-tilting RTL-2 Turboliner trainset powered by Turbomeca gas turbines (1600 horsepower per engine) on both ends of the train.

Diesel locomotive technology is changing rapidly in the U.S.; a 6000 horsepower freight locomotive is currently produced. Passenger applications have lagged due to lack of commercial demand. For evaluation in this document, the F70, the most powerful passenger locomotive designed, is considered. It is assumed that

the actual locomotive used for HSR service will have similar characteristics. Technologies that are still in the conceptual design stage, such as advanced locomotive propulsion systems, which utilize flywheels to "bank" energy to dramatically improve the acceleration and deceleration of high-speed trains, were not evaluated in this project. Insufficient data is available to project their operating characteristics, as is also true for the hypothetical "lightweight" 125 mph (200 kph) diesel locomotives.

HSR service will consist of eight round trips per day between Chicago and St. Louis with stops in Bloomington/Normal, Springfield, and Alton. An additional stop will be made in Joliet, Kankakee, or Peotone depending on the selected alignment and whether or not the South Suburban Airport (SSA) is developed. Some trains could also stop in Dwight, Pontiac, Lincoln, and Carlinville. Computer simulation was conducted assuming that maximum speeds through most of the corridor will be 110 mph (180 kph). Based on this analysis, estimated end-to-end travel times for HSR service are approximately 3.5 hours. Under speeds currently proposed, 125 mph (200 kph) service will only be provided between Lincoln and Springfield. The Lincoln - Springfield segment is the most cost effective area for provision of 125 mph (200 kph) service. There are only 15 highway-railroad grade crossings, three of which are pedestrian, in this 29-kilometer (18-mile) segment. Throughout the corridor, the average number of crossings per kilometer ranges from 0.7 to 0.8 (1.1 to 1.2 per mile).

The existing plus committed improvements planned for the complementary highway and aviation facilities and services are also included as part of the HSR alternative.

Implementation of the 110 to 125 mph (180 to 200 kph) HSR alternative will meet the defined purpose of this project — to enhance the passenger transportation network in the Chicago - St. Louis corridor, resulting in a more balanced use of its components. HSR service is projected to attract approximately 1.3 million riders by the year 2010. Approximately two-thirds of this ridership will consist of travelers diverting from other modes of transportation. As a result, the rail passenger mode share in the corridor will increase from 0.8 percent to nearly 3.0 percent. (See Section 4, Transportation Impacts.)

This increase in rail passenger ridership will be a result of reduced rail travel times and improvements in the reliability and safety of rail service. Along with these enhancements, improvements in air quality and a reduction in energy consumption are also expected.

Reduced Travel Time and Improved Service Reliability:

Rail passenger travel time between Chicago and St. Louis will decrease from the currently scheduled 5.5 to 5.75 hours to approximately 3.5 hours with implementation of HSR. This is at least two hours shorter than travel times achievable by automobile and bus. With the passenger rail stations located in the downtowns of Chicago and St. Louis, downtown-to-downtown rail passenger travel time between these two cities will be comparable to air travel.

The number of passenger rail daily round trips between Chicago and St. Louis will increase from three to eight with HSR. Results of a sensitivity analysis conducted as part of the Financial and Implementation Plan indicated eight would be the optimal number of daily round trips when comparing projected HSR ridership to operating costs. Higher service levels would not yield concomitant higher ridership, while lower service levels would result in a significant reduction in projected patronage. Trains will operate on two-hour headways, beginning at approximately 6:00 AM in both Chicago and St. Louis with the last train departing each downtown station at 8:00 PM. Under these conditions, a total of four high-speed trains (two in each

direction) will operate in the corridor simultaneously between 8:00 AM and 9.30 PM, while two high-speed trains will operate simultaneously between 6:00 AM and 8:00 AM and 9:30 PM and 11:30 PM. The last trains operating each day will arrive in Chicago and St. Louis by approximately 11:30 PM.

Additionally, the rail communication and signal systems will be upgraded and changes in the operating policies regarding mixed train operations, including giving priority to HSR trains over freight traffic, will occur with the implementation of HSR. With these improvements, HSR will be more reliable, and as a result, on-time performance will be better than that of the current Amtrak service. HSR passenger service, with better on-time performance and that is less affected by adverse weather, will also be more competitive with air travel in terms of reliability. Passengers traveling on the improved rail service will also avoid the unpredictable automobile traffic congestion conditions in the Chicago and St. Louis areas. Therefore, there will be reliability improvements relative to automobile and bus travel as well.

Safety:

In general, fatality rate trends show that commercial air and rail continue to be the safest modes of travel in the U.S. (USDOT, 1996) and that automobile travel has injury and fatality rates approximately 10 times that of intercity rail systems. As travelers divert from automobile to rail, overall passenger safety in the corridor will increase. Station improvements that will accompany provision of HSR service, such as additional attendants and increased lighting, will also improve safety and security for rail passengers.

Other improvements will be made as part of the HSR alternative that will enhance the safety of those who live and travel near and across the proposed facility. Warning devices and other protection devices at many of the highway-railroad at-grade crossings in the corridor will be upgraded in accordance with FRA guidelines. According to the accident predictions developed for this project, the proposed improvements will result in fewer at-grade crossing accidents than with the No-Build alternative. The accident predictions developed for this project are discussed in greater detail in Section 4.6.4, Safety.

Fencing that will direct pedestrians to warned crossings is also proposed in urbanized areas as part of the HSR alternative. Negotiations between IDOT and the affected communities will take place if HSR is implemented to determine the location, style, and height of the proposed fencing as well as whether the fencing will be on one or both sides of the railroad tracks. Community cohesiveness and aesthetics will be balanced with increased safety in a cooperative fashion.

Human Environment:

The HSR alternative will result in lower volatile organic compound and carbon monoxide emissions from passenger transportation sources in the corridor than under No-Build conditions. Projections developed for this project indicate that emissions associated with the HSR alternative will be up to two percent lower than those associated with the No-Build alternative for these pollutants. (See Section 5.4, Air Quality.)

Energy consumption with the proposed HSR system will be approximately 700 British Thermal Units (BTUs) per person-kilometer (1130 per person-mile). At this consumption rate, HSR will be more energy efficient than Amtrak service under the No-Build alternative; will improve upon rail passenger service's energy efficiency over air and automobile travel; and will be more competitive with bus travel's energy consumption rate. With HSR, total annual energy consumption for all passenger travel in the corridor will also be lower than with the No-Build alternative. (See Section 5.13, Energy Consumption.)

3.1.2.1 Alignment Options

Three different alignments are evaluated for passenger rail service under the HSR alternative; each of which will meet the purpose and need defined for the project equally. Therefore, if HSR were to be implemented in the Chicago - St. Louis corridor, selection of a preferred alignment will be based on the evaluation of each alignment's environmental impacts, costs, and service, as well as their institutional viability. In this section, the three alternative alignments are described, along with the proposed locations for double track and freight sidings, grade crossing treatment recommendations, and stations. Figure 3.1-1 provides an overview of the alternative alignments analyzed for HSR.

To assist in identifying locations throughout the corridor along the alternative alignments, the existing railroad mileposts were used. The mileposts are in ascending order from north to south and east to west in the corridor and are shown on Figure 3.1-1.

The difference between the three alternative alignments lies between Chicago and Dwight at the northern end of the corridor. One of the alignments through this area would utilize the current Amtrak route. Another would operate through Kankakee on the Illinois Central mainline and the Norfolk Southern, and the third would utilize the Metropolitan Rail Corporation (Metra) Rock Island District line between Chicago and Joliet and follow the existing Amtrak route south of Joliet. The alternative alignments between Chicago and Dwight will utilize existing track and are shown on Figure 3.1-2.

South of Dwight, one alignment is evaluated for HSR service. Between Dwight and Granite City, this alignment will match the existing Amtrak route, operating on Union Pacific (UP) track. South of Granite City, an alignment different from the one used by existing Amtrak service is proposed (see Section 3.3.2 for rationale for not using the current Amtrak route between Granite City and St. Louis). This alignment, currently under construction, consists of Gateway Eastern/UP track between 19th Street in Granite City (MP 275.17) and MP 280.80 near Missouri Avenue in East St. Louis, and Terminal Railroad Association (TRRA)

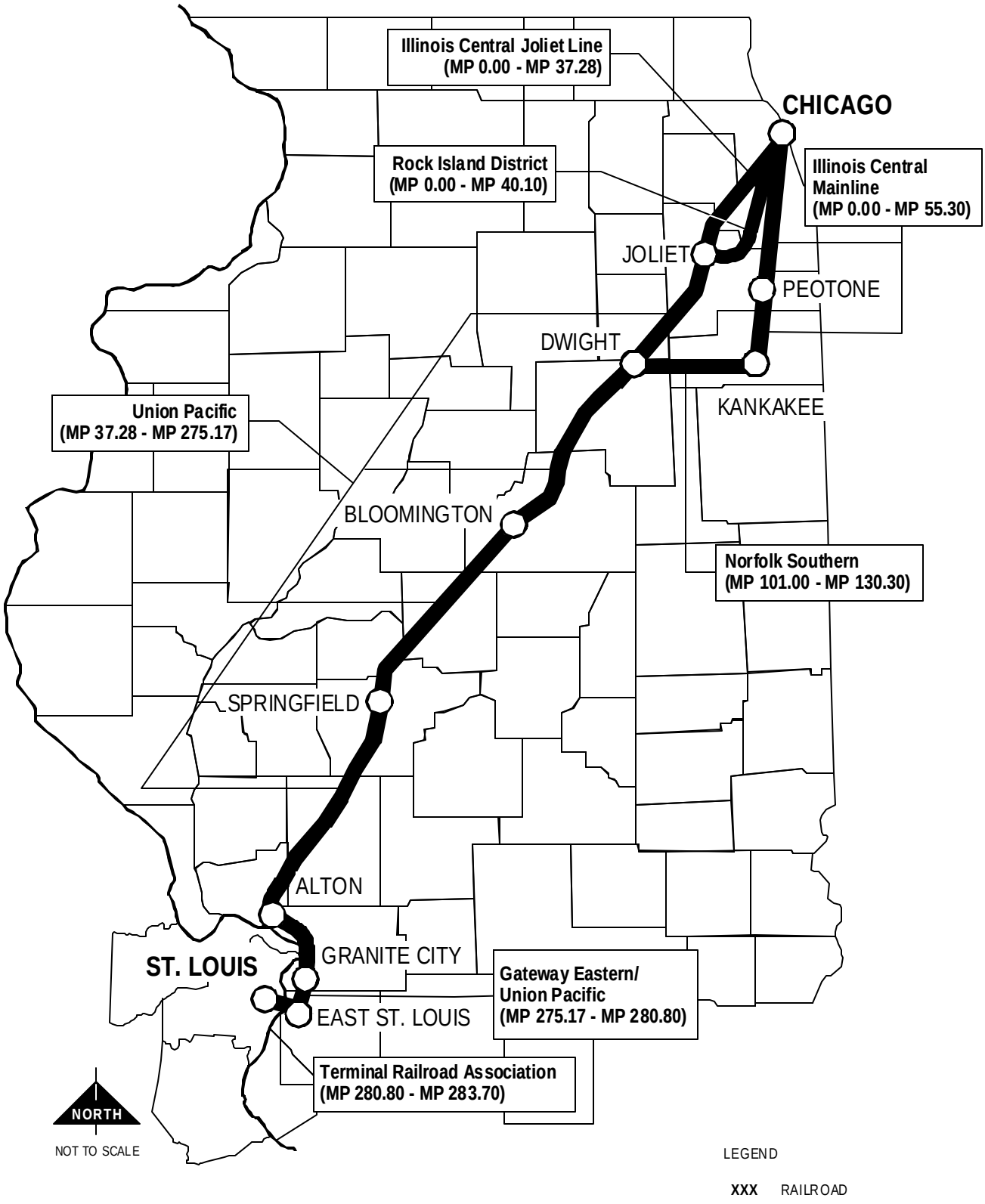


FIGURE 3.1-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ALTERNATIVE ALIGNMENTS

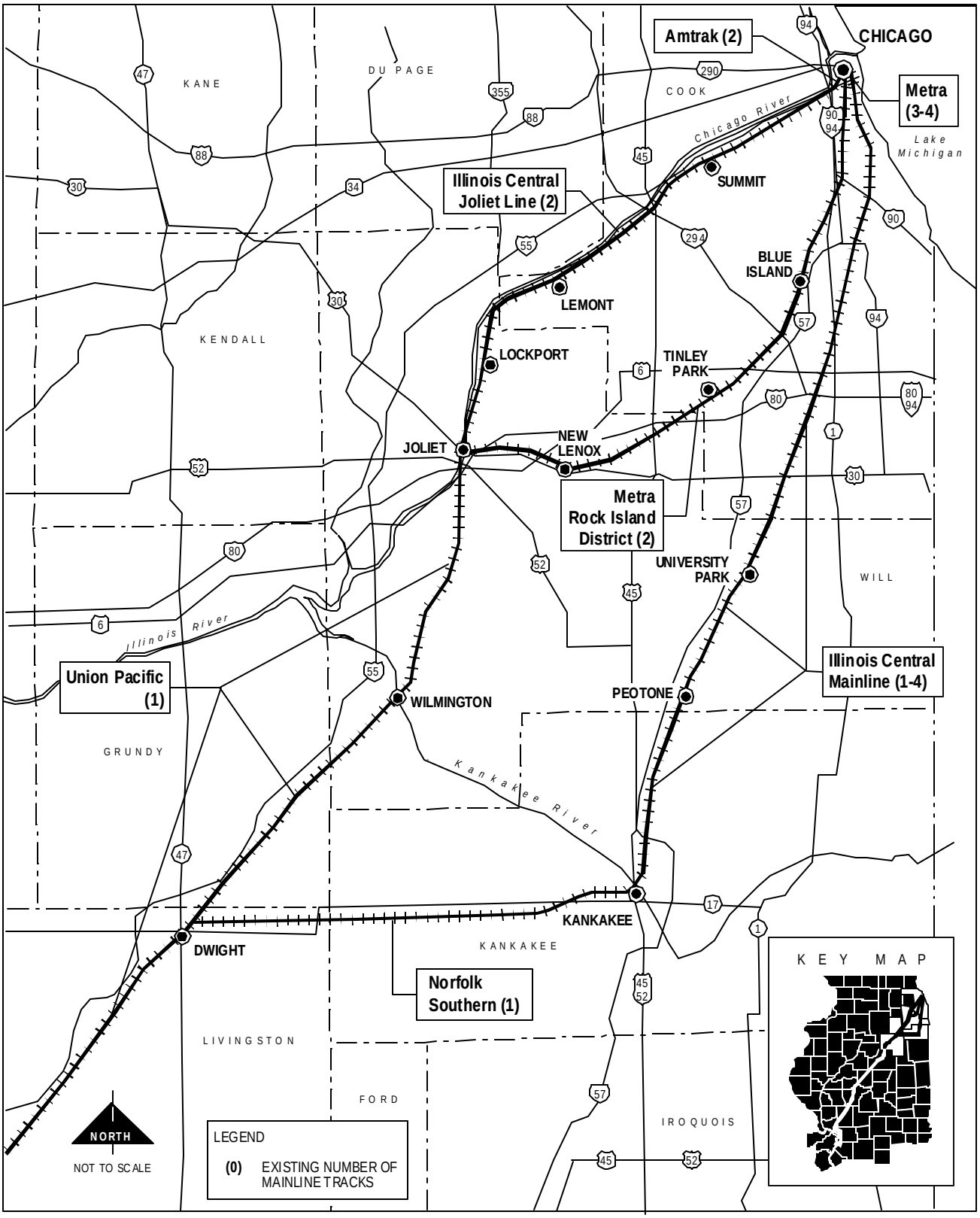


FIGURE 3.1-2
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
CHICAGO TO DWIGHT ALTERNATIVE ALIGNMENTS

track between MP 280.80 and the St. Louis passenger terminal. Use of this alignment will include crossing the Mississippi River via MacArthur Bridge which is located immediately south of the Interstate 55/64/70 river crossing. Figure 3.1-3 shows the current Amtrak route and the proposed HSR route in the St. Louis area.

Between Dwight and Alton, the UP alignment is primarily single track; south of Alton, the route is double track. The existing railroad right-of-way is generally 30 meters (100 feet) wide between Dwight and St. Louis. The line is comprised of the remnants of a former double track railroad that was scaled back to a single track by the former railroad owners. Since the alternative alignment south of Dwight is comprised of existing track, no new right-of-way will be required except where grade separations and frontage/service roads are proposed in the treatment of highway-railroad at-grade crossings. New track construction will occur within the existing right-of-way and only in those areas where double track and freight sidings will be added, upgraded, or extended. The proposed double track and freight sidings and the highway-railroad at-grade crossing improvements for the proposed alignment south of Dwight, as well as for the three alternative alignments between Chicago and Dwight, are described later in this section.

Between Dwight and the St. Louis passenger terminal, the distance on the HSR alternative alignment is approximately 335 kilometers (208 miles). Through this area, there are 11 locations where other railroads cross at grade. These are listed in Table 3.1-1.

Table 3.1-1
RAIL/RAIL CROSSINGS – BETWEEN DWIGHT AND ST. LOUIS

Location	Milepost	Crossing Railroads	Existing Level of Crossing Traffic*	Controlling Institution
Chenoa	102.30	TPW	Light	UP
Bloomington	126.54	Norfolk Southern	Light	UP
Lincoln	156.80	Illinois Central	Light	UP
Ridgley	182.80	IM	Light	UP
Iles	187.40	IC/NS/GWWR	Moderate	NS
Girard	210.50	BNSF	Moderate	UP
Godfrey	252.00	GWWR	Light	UP
Lenox	269.50	GWWR/UP	Moderate	UP
WR	275.40	Norfolk Southern	Heavy	TRRA
Jughandle	280.57	GWWR	Light	TRRA
Q Tower	280.80	TRRA	Moderate	TRRA

* Light Traffic: less than 10 trains per day; Moderate Traffic: 10 to 50 trains per day; Heavy Traffic: greater than 50 trains per day.

A more detailed description of the alternative alignments evaluated between Chicago and Dwight is provided below.

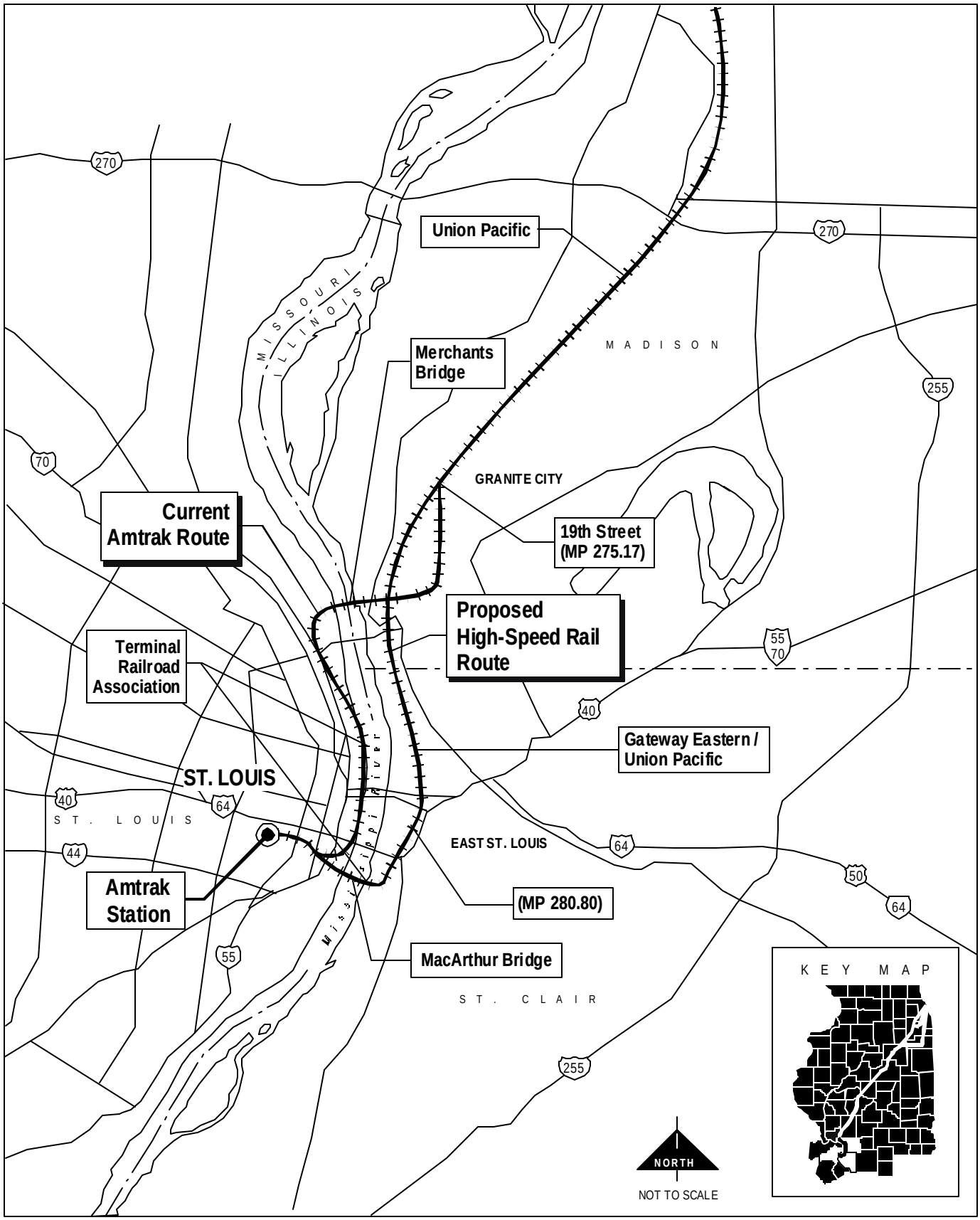


FIGURE 3.1-3
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
EXISTING (AMTRAK) AND HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS IN ST. LOUIS AREA

Amtrak Route (Illinois Central/Union Pacific Alignment). The first alignment will utilize the existing Amtrak route with a terminus at Chicago Union Station and operate on Amtrak and Illinois Central Joliet Line tracks between Chicago and Joliet and on UP tracks between Joliet and Dwight. This alignment is double track between Chicago and Joliet and single track between Joliet and Dwight. Between Chicago and Dwight, there are approximately 118 route kilometers (73 route miles) of track along this alignment.

Since this alignment is comprised of existing track, no new right-of-way will be required except where grade separations or frontage/service roads are proposed at existing highway-railroad at-grade crossings. The existing right-of-way on this alignment is generally 30 meters (100 feet) wide. New track construction will occur within the existing right-of-way and only in the area where a freight siding will be extended. Additionally, high-speed rail service on this alignment will not require the construction of any new track connections.

There are seven locations along this alignment where other railroads cross at grade. These are listed in Table 3.1-2.

Table 3.1-2
RAIL/RAIL CROSSINGS - ILLINOIS CENTRAL/UNION PACIFIC ALIGNMENT

Location	Milepost	Crossing Railroads	Existing Level of Crossing Traffic*	Controlling Institution
Bridgeport	3.50	IC west line	Moderate	Illinois Central
Panhandle Jct.	5.20	CSX	Heavy	CSX
Corwith	6.60	BNSF	Heavy	Illinois Central
LeMoyne	7.90	Belt Railway of Chicago	Heavy	Belt Railway of Chicago
Argo	13.00	Indiana Harbor Belt Railroad	Heavy	Indiana Harbor Belt
Joliet	37.50	Metra Rock Island District	Moderate	Metra
Dwight	72.85	Norfolk Southern	Light	UP

* Light Traffic: less than 10 trains per day; Moderate Traffic: 10 to 50 trains per day; Heavy Traffic: greater than 50 trains per day.

Illinois Central Mainline/Norfolk Southern (Norfolk Southern Alignment). The Norfolk Southern alignment will provide access to the proposed SSA site in Peotone. HSR service on this alignment will operate on Metra Electric line tracks between downtown Chicago and a point between 23rd Street and 31st Street in the City of Chicago; Illinois Central (IC) New Orleans mainline tracks between that junction with the Metra Electric line tracks and Kankakee; and Norfolk Southern (formerly Conrail or Consolidated Rail Corporation Streator Secondary Line) tracks between Kankakee and Dwight. At Dwight, this alignment will connect to the UP tracks. The distance between the Chicago Randolph Street Station (end of the Metra line) and the UP tracks in Dwight on this alignment is approximately 137 route kilometers (85 route miles) — five kilometers (three miles) on Metra Electric track, 84 kilometers (52 miles) on IC track, and 48 kilometers (30 miles) on Norfolk Southern track. The Metra Electric line consists of three to four tracks through the area where HSR

service will operate on it. The IC mainline between the Metra Electric line tracks and Kankakee consists of one to four main tracks at present. It originally had four main tracks to Monee and three main tracks from Monee to Kankakee. The Norfolk Southern line is single track between Kankakee and Dwight. Figure 3.1-2 shows the number of tracks along this alignment. The Metra Electric District tracks are located west of and adjacent to the IC tracks between 18th Street in Chicago and University Park, where the Metra Electric service terminates. North of 18th Street, the IC tracks turn to the west and no longer proceed into downtown Chicago. There is a separate plan under consideration that would end all IC operations on this corridor north of around 72nd Street. If this plan were implemented, the City of Chicago would own the current IC right-of-way north of the new dividing point.

New track construction will be required to provide a connection between the Metra Electric line and the IC mainline between 23rd and 31st Streets. This construction will occur within the existing rights-of-way of these two lines. In Kankakee, construction of a new connection will be required to provide access between the IC and Norfolk Southern tracks. Construction of this new connection will also require yard modification and improvements. The track in this area is currently in poor condition, and coordination with the railroads will be required for the necessary improvements to be made. Provision of a connection that will allow trains to travel at speeds up to 40 mph (65 kph) as well as the other yard improvements would be accommodated within the existing right-of-way. In Dwight, a new connection will also be required. A new 70 mph (110 kph) connection between the Norfolk Southern and UP tracks is proposed that will require additional right-of-way. This proposed connection is shown on Figure 3.1-4. A reduction in design speed on this connection will not substantially reduce the amount of additional right-of-way required.

With the exception of the new track connections, this alignment is comprised of existing track. In addition to the new right-of-way that will be required for the Norfolk Southern/UP track connection in Dwight, new right-of-way will be required for a new freight siding, a new station, and where grade separations or frontage/service roads are proposed at existing highway-railroad at-grade crossings. Existing railroad rights-of-way on this alignment are generally 30 meters (100 feet) wide outside of Chicago. In Chicago, the right-of-way is wider, but the corridor is shared with Metra trackage. New track construction will also be required in the area where new double track will be added.

Along the Illinois Central mainline on this alignment, there is one location where other railroads cross at grade. This location is at Kensington/115th Street in Chicago (MP 14.60), where moderate (10 to 50 trains per day) Chicago, South Shore, and South Bend Railroad traffic, including the Northern Indiana Commuter Transportation District electric service to South Bend, crosses. Metra controls this crossing.

Metra Rock Island District Line/Union Pacific (Rock Island District Alignment). The third alternative alignment will use the Metra Rock Island District line between the Chicago LaSalle Street Station and Joliet. At Joliet, this alignment will switch to the UP and operate on it between Joliet and Dwight. The distance between the Chicago LaSalle Street Station and Norfolk Southern/UP junction in Dwight is approximately 123 route kilometers (76 route miles) — 65 kilometers (40 miles) on Rock Island District track and 58 kilometers (36 miles) on UP track. The Rock Island District line is double track for its entire length between Chicago and Joliet.

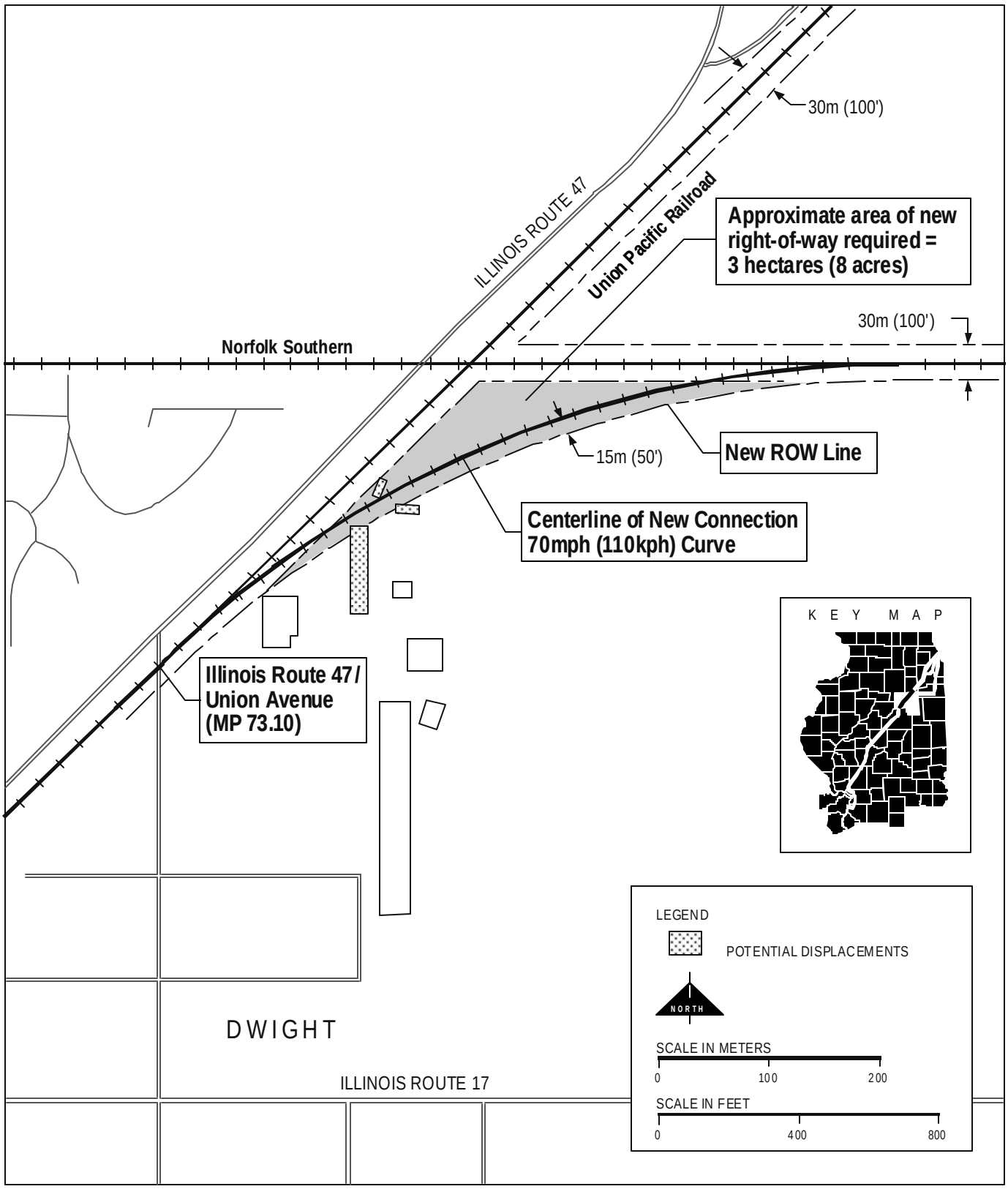


FIGURE 3.1-4
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
PROPOSED NORFOLK SOUTHERN / UNION PACIFIC CONNECTION IN DWIGHT

Since this alignment is comprised of existing track, no new right-of-way will be required except for a new station and where frontage/service roads are proposed at existing highway-railroad at-grade crossings. The existing right-of-way on this alignment is generally 30 meters (100 feet) wide. New track construction will occur within the existing right-of-way and only in the area where a freight siding will be upgraded and extended. Additionally, high-speed rail service on this alignment will not require the construction of any new track connections. There is an existing connection between the Rock Island District Line and the UP in Joliet.

There are four locations along this alignment where other railroads cross at grade. These are listed in Table 3.1-3.

Table 3.1-3
RAIL/RAIL CROSSINGS - ROCK ISLAND DISTRICT ALIGNMENT

Location	Milepost	Crossing Railroads	Existing Level of Crossing Traffic*	Controlling Institution
16th Street	1.10	Illinois Central	Heavy	Illinois Central
Englewood	6.70	Norfolk Southern	Heavy	Metra
Joliet	38.90	Elgin, Joliet & Eastern Railroad	Moderate	Metra
Dwight	72.85	Norfolk Southern	Light	UP

* Light Traffic: less than 10 trains per day; Moderate Traffic: 10 to 50 trains per day; Heavy Traffic: greater than 50 trains per day.

Alignment Identification:

Although south of Dwight only one alternative alignment is evaluated, frequently throughout this document when describing issues and impacts, the Chicago to Dwight alternative alignment names are used to represent an entire alignment between Chicago and St. Louis. When Chicago - St. Louis corridor alignments are referred to, the following names are used: Illinois Central/Union Pacific (IC/UP), Norfolk Southern (NS), and Rock Island District (RID). Figure 3.1-5 shows these three Chicago - St. Louis alignments and provides some of the characteristics of each.

Projected travel times through the corridor, based on computer simulation, for each of the alternative alignments under the HSR alternative, as well as for the No-Build alternative, are listed in Table 3.1-4. The maximum speeds simulated through each community in the corridor to achieve the projected travel times are provided in Table 3.1-5.

Double Track and Freight Sidings:

Much of the new construction that will occur with the implementation of HSR service will be that associated with the provision of double track and freight sidings through portions of the corridor. Additional double track and freight sidings will be required so that future high-speed trains will be able to meet and pass other high

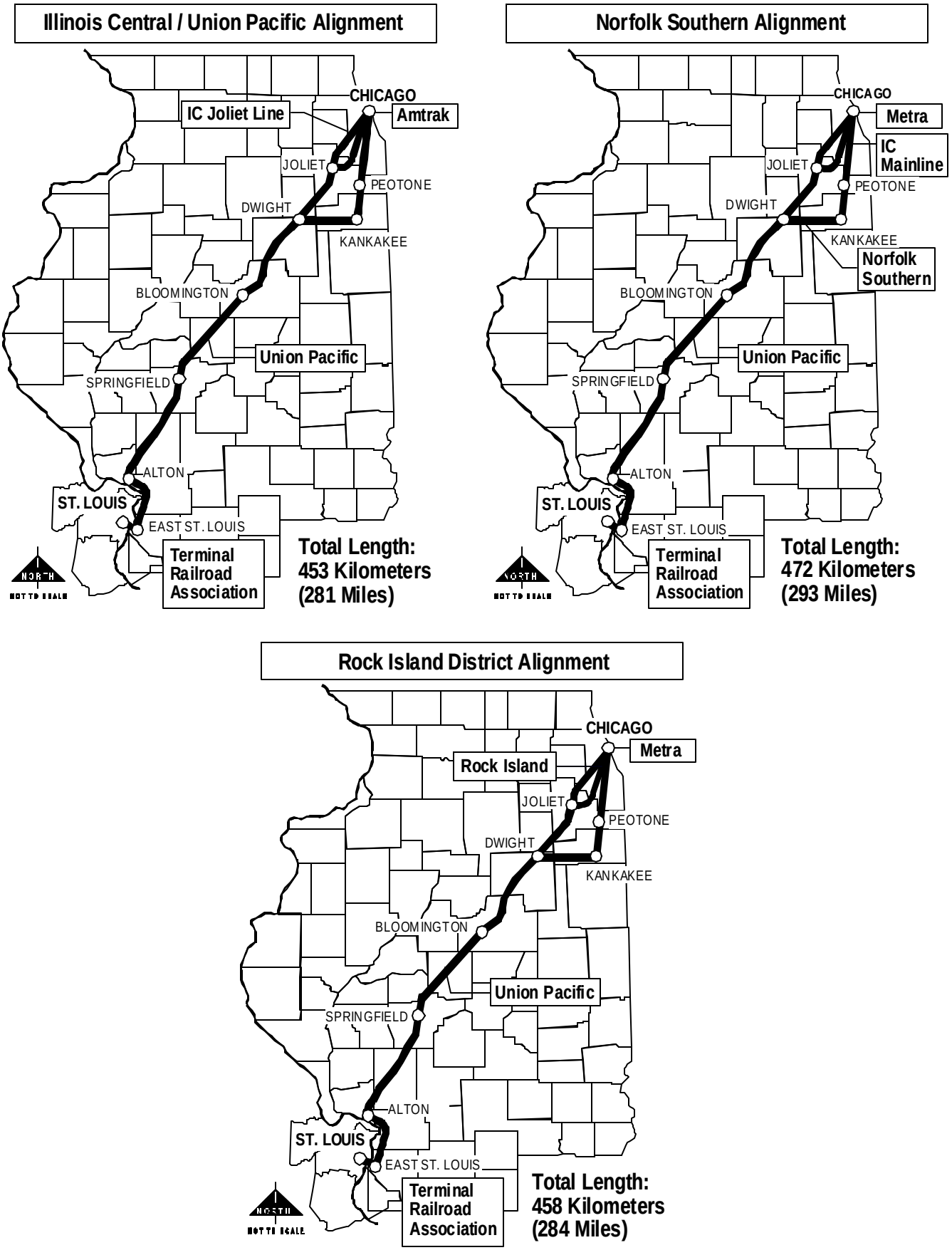


FIGURE 3.1-5
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ALIGNMENTS

Table 3.1-4

NO-BUILD AND HIGH-SPEED RAIL ALTERNATIVE TRAVEL TIMES

No-Build (Amtrak)	High-Speed Rail Alternative			Existing Scheduled Station Stops	No-Build (Amtrak)	High-Speed Rail Alternative		
	IC/UP	Norfolk Southern	Rock Island			IC/UP	Norfolk Southern	Rock Island
00:00	00:00	00:00	00:00	**Chicago**	05:30	03:27	03:29	03:26
00:22	00:20			**Summit**	04:53	03:07		
		00:29		**Peotone**			02:59	
00:50	00:37		00:37	**Joliet**	04:28	02:48		02:48
		00:42		**Kankakee**			02:46	
01:24	01:01	01:03	01:01	**Dwight**	03:53	02:26	02:26	02:26
01:41	01:11	01:14	01:11	**Pontiac**	03:36	02:15	02:15	02:15
02:10	01:30	01:33	01:30	**Bloomington**	03:08	01:55	01:55	01:55
02:43	01:53	01:56	01:53	**Lincoln**	02:35	01:33	01:33	01:33
03:20	02:12	02:15	02:12	**Springfield**	02:05	01:12	01:12	01:12
04:00	02:40	02:42	02:40	**Carlinville**	01:20	00:47	00:47	00:47
04:30	03:01	03:04	03:01	**Alton**	00:50	00:24	00:24	00:24
05:35	03:26	03:29	03:26	**St. Louis**	00:00	00:00	00:00	00:00

Source: Amtrak, October 1999.
Sverdrup Civil, Inc., June 1996.

1. No-Build alternative times are for existing Amtrak service trains 305 (Chicago to St. Louis) and 300 (St. Louis to Chicago). Scheduled Amtrak one-way travel times range from 5:30 and 5:45.
2. High-Speed Rail travel times were estimated assuming an F70 locomotive with Talgo trainset.

Table 3.1-5
TRAIN SPEEDS ALONG THE HIGH-SPEED RAIL CORRIDOR
in mph (kph)

	No-Build	IC/UP	NS	RID
Chicago	79 (127)	106 (171)	110 (177)	79 (127)
Summit	79 (127)	109 (176)		
Willow Springs	79 (127)	104 (168)		
Lemont	79 (127)	70 (113)		
University Park	79 (127)		110 (177)	
Blue Island	79 (127)			90 (145)
Robbins	79 (127)			90 (145)
Midlothian	79 (127)			90 (145)
Oak Forest	79 (127)			90 (145)
Tinley Park	79 (127)			90 (145)
Monee	79 (127)		110 (177)	
Peotone	79 (127)		110 (177)	
Mokena	79 (127)			90 (145)
New Lenox	79 (127)			90 (145)
Lockport	79 (127)	110 (177)		
Joliet	25 (40)	24 (39)		40 (65)
Elwood	79 (127)	93 (150)		93 (150)
Wilmington	60 (97)	85 (137)		85 (137)
Braidwood	79 (127)	110 (177)		110 (177)
Godley	79 (127)	110 (177)		110 (177)
Manteno	79 (127)		110 (177)	
Bourbonnais	79 (127)		110 (177)	
Bradley	79 (127)		110 (177)	
Kankakee	25 (40)		45 (73)	
Union Hill	40 (65)		110 (177)	
Braceville	79 (127)	110 (177)		110 (177)
Gardner	79 (127)	110 (177)		110 (177)
Dwight	79 (127)	90 (145)	70 (113)	90 (145)
South of Dwight, High-Speed Rail Service will operate on the same alignment.				
Odell	79 (127)	110 (177)		
Cayuga	79 (127)	110 (177)		
Pontiac	79 (127)	100 (161)		
Chenoa	79 (127)	94 (152)		
Lexington	79 (127)	110 (177)		
Towanda	79 (127)	110 (177)		
Normal	79 (127)	59 (95)		
Bloomington	50 (81)	42 (68)		
McLean	79 (127)	110 (177)		
Atlanta	60 (97)	100 (161)		
Lawndale (unincorporated)	70 (113)	109 (176)		
Lincoln	79 (127)	99 (160)		
Broadwell	79 (127)	122 (197)		
Elkhart	79 (127)	124 (200)		
Williamsville	79 (127)	124 (200)		
Sherman (unincorporated)	79 (127)	125 (202)		
Springfield	40 (65)	40 (65)		
Chatham	79 (127)	110 (177)		
Auburn	79 (127)	110 (177)		
Thayer	79 (127)	110 (177)		
Virden	79 (127)	110 (177)		
Girard	79 (127)	95 (153)		
Nilwood	79 (127)	110 (177)		
Carlinville	79 (127)	110 (177)		
Plainview (unincorporated)	60 (97)	80 (129)		
Shipman	79 (127)	105 (169)		
Brighton	79 (127)	110 (177)		
Unincorporated Jersey Cou	79 (127)	95 (153)		
Godfrey	79 (127)	107 (173)		
Alton	70 (113)	95 (153)		
East Alton (unincorporated	79 (127)	100 (161)		
Wood River	79 (127)	91 (147)		
Hartford	79 (127)	108 (174)		
Granite City	79 (127)	110 (177)		
Madison	40 (65)	83 (134)		
East St. Louis	25 (40)	20 (32)		

Source: IDOT, August 1999.

Note: No-Build speeds represent speed limits; HSR speeds are from computer simulation.

-speed trains and freight trains operating in the corridor without slowing down. This capability is essential if predicted travel times are to be met.

Between Chicago and Dwight, a section of double track is proposed for the Norfolk Southern alignment on the IC mainline between MP 41.00 in Peotone and MP 55.00 in Kankakee. Since the IC/UP and Rock Island District alignments are currently double track between Chicago and Joliet, no additional areas of double track will be required with these alignments north of Dwight. South of Dwight, regardless of which alignment is used to the north, double track will be required in two locations — between MP 126.35 and MP 126.50 in the Bloomington/Normal area and between MP 204.55 in Thayer and MP 218.65 near Carlinville. Construction of the proposed double track will occur within existing rights-of-way; no additional right-of-way will be required.

The extension of an existing freight siding will be required for the IC/UP and Rock Island District alternative alignments along UP track in Wilmington. The improved siding will extend from MP 54.00 to MP 57.00. On the Norfolk Southern alignment, a freight siding is proposed between MP 113.00 and 118.00 on Norfolk Southern track, primarily through unincorporated Kankakee County. It is assumed that an additional 15 meters (50 feet) of right-of-way on the south side of the track will be required to accommodate this proposed freight siding along the Norfolk Southern alignment. South of Dwight, regardless of which alignment is used to the north, three areas were identified for future freight sidings. The first is between MP 158.50 in Lincoln and MP 168.40 near Elkhart; the second is between MP 238.65 in Shipman and MP 249.30 in Godfrey; and the third is between MP 259.05 in East Alton and MP 262.90 in Wood River. With the exception of the proposed freight siding on the Norfolk Southern alignment in Kankakee County, the proposed freight sidings will be constructed within existing rights-of-way; no additional right-of-way will be required.

Figure 3.1-6 shows the locations of the proposed double track and freight sidings. Existing freight siding locations in the corridor are also shown on this figure.

Grade Crossing Treatment:

Regardless of which alternative alignment is analyzed between Chicago and Dwight, at least 310 existing highway-railroad at-grade crossings will be affected in the Chicago - St. Louis corridor with the implementation of HSR service. Between Chicago and Dwight, there are 76 at-grade crossings on the IC/UP alignment; 64 crossings on the Norfolk Southern alignment; and 104 crossings on the Rock Island District alignment. South of the UP/Norfolk Southern junction in Dwight, there are 246 existing at-grade crossings.

Increases in train speed associated with the HSR alternative warrant an increase in the level of grade crossing protection. Each of the highway-railroad at-grade crossings in the corridor was reevaluated for this project to determine what type of warning device or protection should be provided if HSR service were implemented. Crossing treatments for locations where train speed is less than 110 mph (180 kph) will generally conform to the rules and requirements of the ICC, the Manual on Uniform Traffic Control Devices for Streets and Highways, and Chapter 7 of IDOT's Bureau of Design and Environment Manual. FRA guidelines require "positive protection" (e.g., closure, an approved barrier, or grade separation) be provided at grade crossings where trains operate between 110 and 125 mph (180 and 200 kph). The vehicle arresting barrier under development by IDOT may meet these requirements. A summary of the methodology used to evaluate and

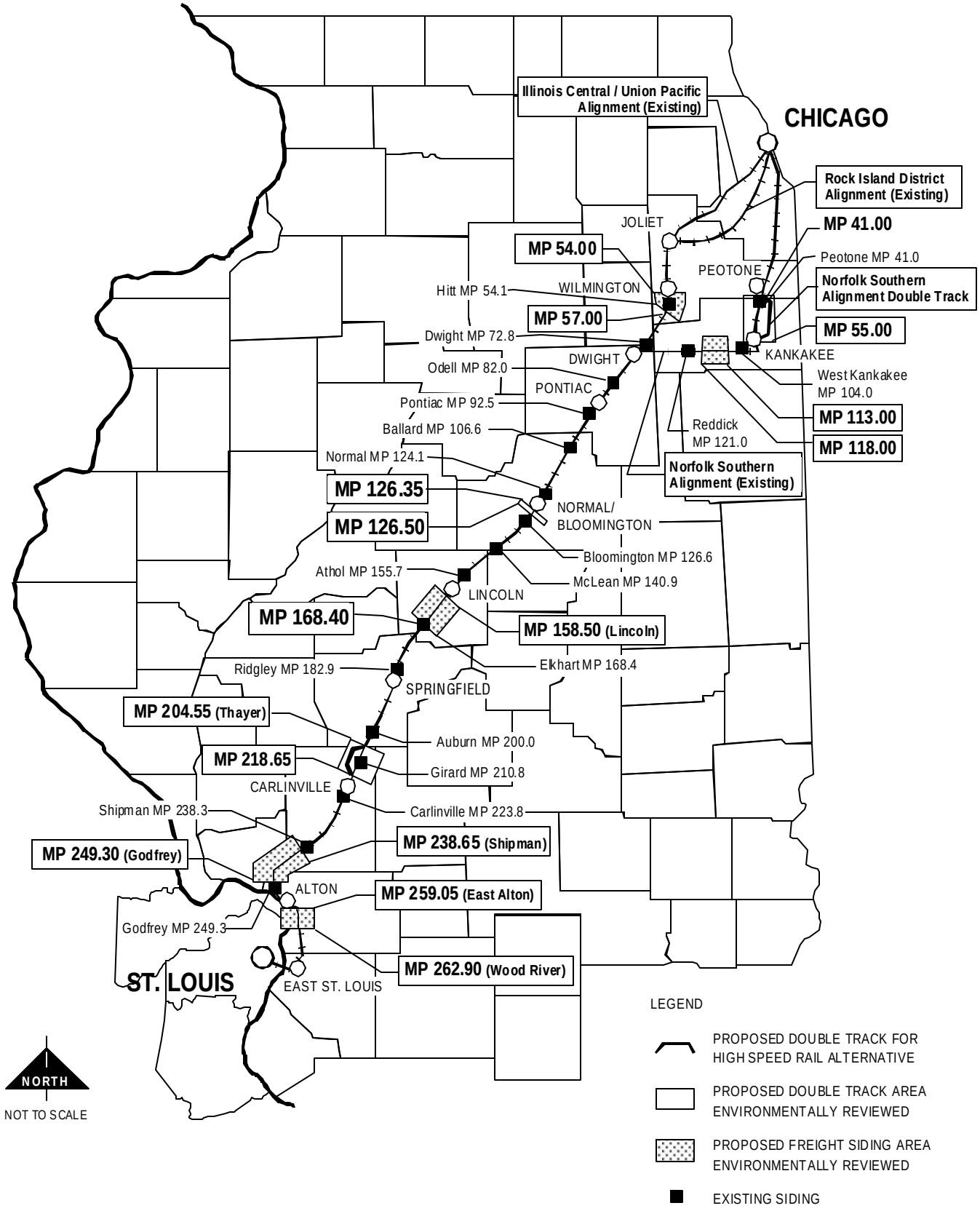


FIGURE 3.1-6
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
DOUBLE TRACK AND FREIGHT SIDING LOCATIONS

recommend a treatment for each at-grade crossing in the corridor is provided in Appendix B. The High-Speed Rail Corridor: Rail Crossing Analysis (December 1996 and amended in February 2000) describes in complete detail the analysis of the at-grade crossings in the corridor. This document is available to interested persons for review at the IDOT Central Office in Springfield and supersedes the Chicago - St. Louis HSR Study, Grade Crossing Safety Analysis, prepared for IDOT in 1993 and 1994.

The grade crossing treatments proposed for this project can generally be broken into two categories: close and open. Redundant or unnecessary crossings are proposed for closure. For crossings recommended for closure where adequate alternative access is not available, a frontage/service road is also proposed. Crossings that were determined to be necessary are suggested to remain open. Some of these crossings currently have adequate warning devices (those that actively warn but do not physically prohibit intrusion), and "no change" is suggested at these locations. At other locations, enhanced warning devices will be required. Enhanced warning device recommendations include pedestrian bell and flashers, conventional gates, and electric lock gates. Protection devices — vehicle arresting barriers — are also suggested for crossings that will remain open where train speeds exceed 110 mph (180 kph). All at-grade crossings proposed for retention, including those recommended for "no change", will be equipped with Constant Warning Time (CWT) circuits, which measure the speed of an approaching train and activate the warning devices so that they will operate (or the gates will be down) for the required 20 seconds before the train is at the crossing, regardless of the train speed. Additionally, at a few locations, grade separations are suggested where traffic volumes are considered high or where grades are conducive to a separation.

Depending on which alternative alignment is evaluated, two or three grade separations are proposed at existing highway-railroad at-grade crossings. Between Chicago and Dwight, a grade separation is proposed on the IC/UP alignment at 135th Street/Romeoville Road (MP 29.00) near Romeoville and on the Norfolk Southern alignment at Illinois Route 17 (MP 106.59), west of Kankakee.

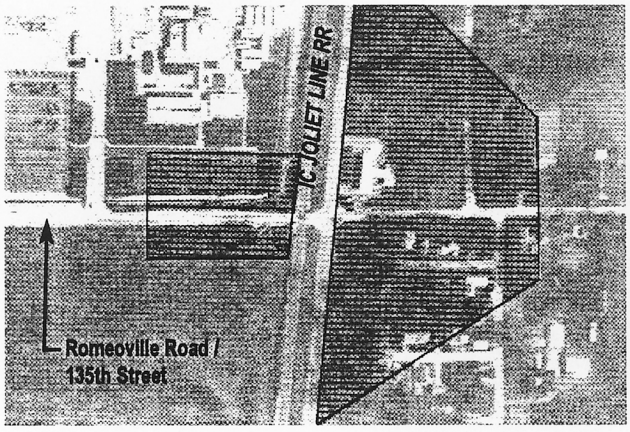
South of Dwight, grade separations are proposed at Lazy Row Road (MP 147.60) near Atlanta and at Pontoon Road (MP 272.70) in Granite City. Diagrams of the potentially impacted areas at the proposed grade separation locations are provided on Figure 3.1-7.

Additionally, at two locations in the corridor, grades are conducive for the provision of a corrugated metal pipe under the railroad tracks, resulting in a grade separation. The crossings where this type of improvement is proposed are at MP 33.45, a pedestrian crossing in Lockport along the IC/UP alignment, and at MP 179.60, a private crossing north of Springfield. No additional right-of-way will be required to accommodate these improvements.

A summary of the grade crossing treatment recommendations by county and alignment is provided in Table 3.1-6. Approximately 26 to 29 percent of the existing at-grade crossings are proposed for closure. However, 19 to 21 percent of these crossings are for pedestrian use only, and of the vehicular crossings proposed for closure, approximately 46 to 55 percent are private crossings; twenty-seven to 32 public roads are proposed for closure. Table 3.1-7 provides a listing of all the crossings recommended for "close w/frontage road" along with the length of the proposed frontage/service road.

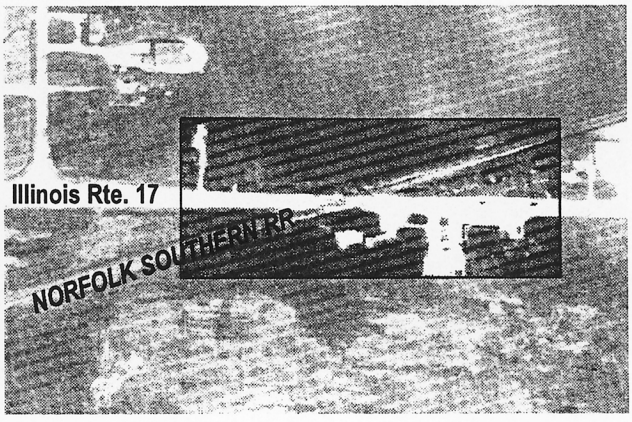
IC / UP ALIGNMENT
(Chicago - Joliet)

1. MP 29.00 Romeoville Road



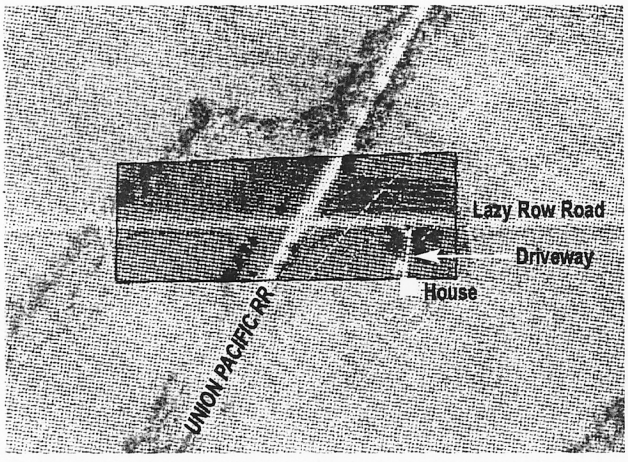
NORFOLK SOUTHERN ALIGNMENT
(Chicago - Dwight)

2. MP 106.59 Illlinois Route 17

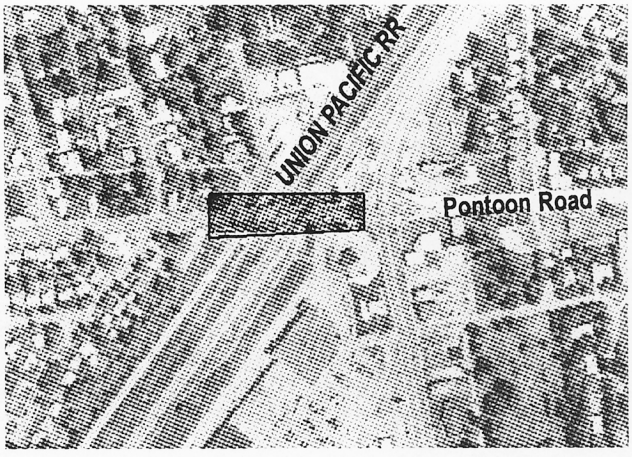


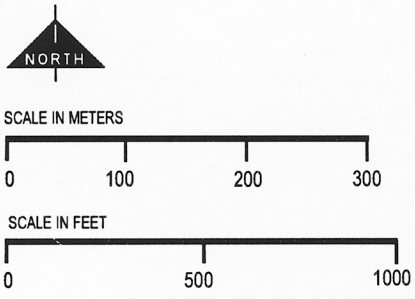
ALL ALIGNMENTS (Dwight - St. Louis)

3. MP 147.60 Lazy Row Road



4. MP 272.70 Pontoon Road





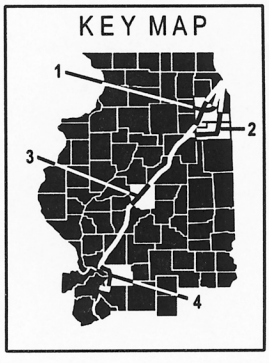


FIGURE 3.1-7
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
PROPOSED GRADE SEPARATION IMPACT AREAS

Table 3.1-6
SUMMARY OF PROPOSED ACTIONS
FOR HIGH-SPEED RAIL PROJECT AREA HIGHWAY-RAILROAD AT-GRADE CROSSINGS

			2000 SUGGESTED ACTION													
				Vehicular Crossings												
				Close		Close with Frontage Road										
County	Alignment	Railroad	Close - Pedestrian	Public	Private	Public	Private	No Change	Ped. Bell and Flashers	Warn. Sign and Lights	Conventional Gates (1)	Electric Lock Gates	Vehicle Arresting Barrier	Grade Separation	Total (2)
Cook	IC/UP	Illinois Central	0	0	1	0	2	8	3	0	4	0	0	0	18
Cook	Norfolk Southern	ICML	0	0	0	0	0	0	0	1	0	0	0	0	1
Cook	Rock Island District	Rock Island District	0	0	8	0	0	22	17	0	1	0	0	0	48
Will	IC/UP	IC/UP	0	6	2	0	1	18	1	0	10	1	0	2	41
Will	Norfolk Southern	ICML	1	3	0	0	1	5	0	0	1	0	1	0	12
Will	Rock Island District	RID/UP	0	6	4	0	0	14	4	0	11	0	0	0	39
Kankakee	Norfolk Southern	ICML/NS	1	10	0	1	5	9	0	0	12	3	0	1	42
Grundy	IC/UP, RID	Union Pacific	0	5	0	1	2	0	0	0	8	0	0	0	16
Livingston	IC/UP, RID	Union Pacific	2	3	1	0	4	13	1	1	15	1	0	0	41
Livingston	Norfolk Southern	NS/UP	2	6	1	0	4	13	1	1	18	3	0	0	49
McLean	All	Union Pacific	1	3	2	0	4	17	1	0	15	1	0	0	44
Logan	All	Union Pacific	3	1	0	1	1	11	0	0	2	1	5	1	26
Sangamon	All	Union Pacific	7	4	0	1	5	27	0	0	9	5	5	1	64
Macoupin	All	Union Pacific	4	2	1	2	6	12	0	0	15	2	0	0	44
Jersey	All	Union Pacific	0	0	0	1	0	0	0	0	2	0	0	0	3
Madison	All	Union Pacific	0	2	1	0	2	12	0	0	4	2	0	1	24
St. Clair	All	UP/TRRA	0	1	0	0	0	0	0	0	0	0	0	0	1
St. Louis	All	TRRA	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals for Alternative Alignments															
IC/UP Alignment			17	27	8	6	27	118	6	1	84	13	10	5	322
Norfolk Southern Alignment			19	32	5	6	28	106	2	2	78	17	11	4	310
Rock Island District Alignment			17	27	17	6	24	128	23	1	82	12	10	3	350

Source: De Leuw, Cather & Company, February 2000.

(1) Conventional gates are recommended as an initial safety device. At many locations, more sophisticated enhanced warning devices could be installed depending on local conditions.

(2) Total Crossings: Total number of crossings for which there are recommendations as of February 2000.

Table 3.1-7
LENGTH OF PROPOSED SERVICE ROADS FOR AT-GRADE CROSSING CLOSINGS
ALONG THE HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS
in kilometers (miles)

Milepost	Address	County	IC/UP	Norfolk Southern	Rock Island District
23.50	Boyer Street	Cook	0.2 (0.1)		
26.50	Castle Flagstone	Cook	1.1 (0.7)		
27.25	Unocal	Will	0.2 (0.1)		
65.50	Maher Road	Grundy	0.6 (0.4)		0.6 (0.4)
66.60	Farm	Grundy	0.5 (0.3)		0.5 (0.3)
67.95	Farm	Grundy	0.6 (0.4)		0.6 (0.4)
42.75	Private Road	Will		1.0 (0.6)	
51.35	McKnight Road	Kankakee		1.0 (0.6)	
104.90	Private Road	Kankakee		0.3 (0.2)	
106.20	Private Road	Kankakee		0.5 (0.3)	
108.20	Private Road	Kankakee		1.1 (0.7)	
110.00	Private Road	Kankakee		1.3 (0.8)	
119.70	Private Road	Kankakee		0.6 (0.4)	
		South of Dwight, High-Speed Rail Service will operate on the same alignment.			
95.00	Farm	Livingston		0.5 (0.3)	
96.40	Farm	Livingston		1.0 (0.6)	
96.60	Farm	Livingston		0.3 (0.2)	
100.30	Farm	Livingston		1.0 (0.6)	
104.30	Farm	McLean		1.0 (0.6)	
106.30	Farm	McLean		0.6 (0.4)	
114.80	Private	McLean		0.6 (0.4)	
134.90	Farm	McLean		1.9 (1.2)	
166.20	Farm	Logan		1.0 (0.6)	
169.80	TR 50A	Logan		1.6 (1.0)	
193.00	Farm	Sangamon		0.6 (0.4)	
193.80	Farm	Sangamon		0.6 (0.4)	
198.10	TR 371	Sangamon		0.8 (0.5)	
201.20	Farm	Sangamon		0.3 (0.2)	
201.70	Farm	Sangamon		0.6 (0.4)	
202.10	Farm	Sangamon		0.3 (0.2)	
227.50	Farm	Macoupin		0.3 (0.2)	
230.10	Farm	Macoupin		0.5 (0.3)	
234.60	TR 238	Macoupin		1.0 (0.6)	
235.60	Farm	Macoupin		1.6 (1.0)	
236.80	Farm	Macoupin		0.6 (0.4)	
237.40	Farm	Macoupin		0.3 (0.2)	
240.60	Farm	Macoupin		1.1 (0.7)	
244.30	TR 32	Macoupin		1.0 (0.6)	
248.00	Terpening Lane	Jersey		0.8 (0.5)	
266.25	Farm	Madison		1.0 (0.6)	
268.20	Farm	Madison		0.6 (0.4)	
TOTAL			**25.0 (15.5)**	**27.6 (17.1)**	**23.5 (14.6)**

Source: De Leuw, Cather & Company, August 1999.

A complete listing of the proposed treatments for each at-grade crossing in the corridor is provided in Appendix B.

Stations:

All HSR trains will stop at existing stations in Chicago, Bloomington/Normal, Springfield, Alton, and St. Louis. It is also possible that some trains will stop at existing stations in Dwight, Pontiac, Lincoln, and Carlinville. In Chicago, service on the IC/UP alignment will stop at Union Station; service on the Norfolk Southern alignment will stop at Randolph Street Station; and service on the Rock Island District alignment will stop at LaSalle Street Station. Existing available parking facilities associated with or in the vicinity of these stations will be sufficient to accommodate the projected parking demand. Since Amtrak operates out of Union Station in Chicago, passenger connections with other Amtrak routes will be less convenient with the Norfolk Southern and Rock Island District alignments.

Between Chicago and Dwight, there will be at least one additional stop on each of the alternative alignments. Under the IC/UP and the Rock Island District alignments, HSR service will stop at Joliet Union Station. Under the Norfolk Southern alignment, there will be a stop in the Peotone area if the SSA is constructed. HSR service will also stop at a new station in Kankakee along the Norfolk Southern alignment.

With the Rock Island District alignment at Joliet Union Station, provision of new platforms, access to the station, and approximately 60 parking spaces will be required, as no direct access to the tracks proposed for HSR service is currently available. Stops in either Peotone or Kankakee with the Norfolk Southern alignment will require construction of a new station. The Peotone station site will be on the east side of the IC mainline tracks, north of Peotone, and part of the airport development. The Kankakee station site is proposed for the northwest quadrant of the IC mainline/Norfolk Southern crossing and will require approximately 60 parking spaces. Potential impacts associated with the construction of new or improved station facilities in Joliet and Kankakee are addressed in this document. Figure 3.1-8 shows the areas that will potentially be impacted by station construction in Joliet and Kankakee.

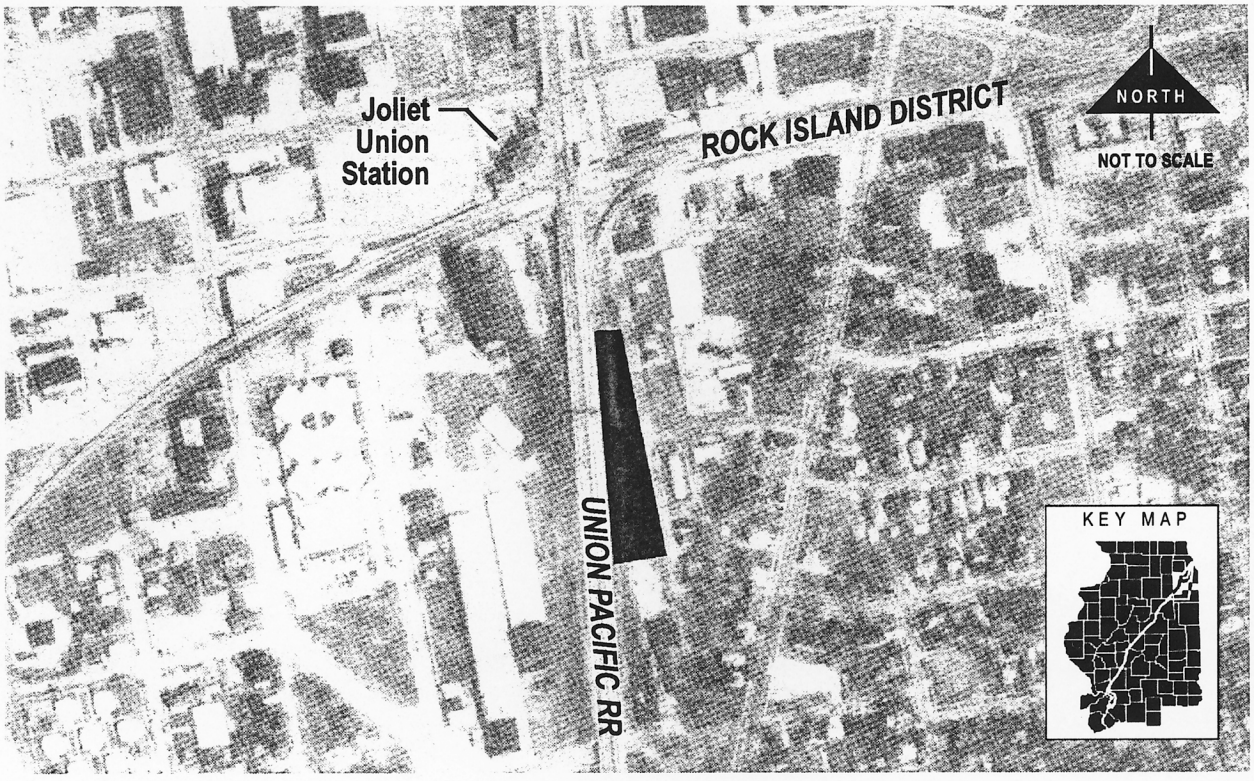
All of the current Amtrak stop locations are being considered for either complete service or partial service, except for Summit. Ridership demand at the Summit station, less than 11 boardings and alightings per day in 1996, was considered too low to warrant a stop.

Summary of Construction Requirements by Area:

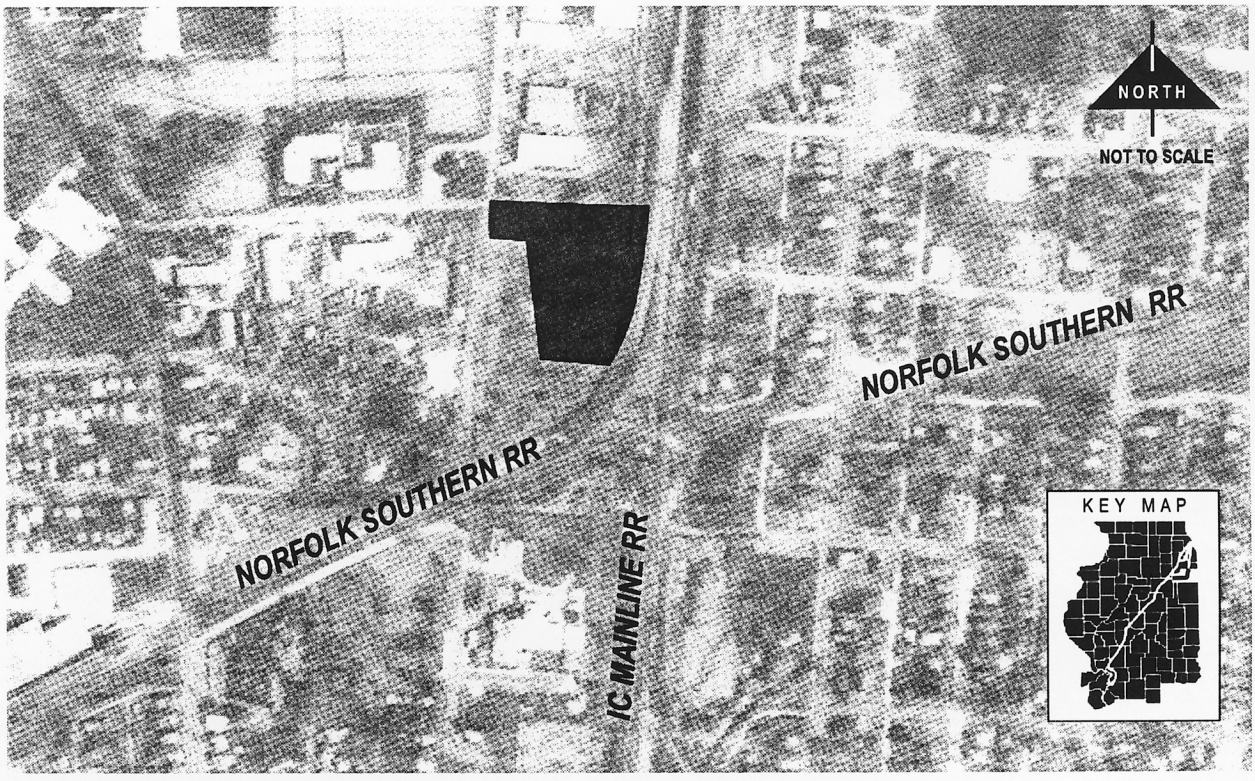
Table 3.1-8 summarizes the construction and additional right-of-way that will be required with the HSR alternative for each alignment.

3.1.2.2 Costs

Capital costs were developed for each HSR alternative alignment. Projected costs for construction, grade crossing treatment improvements, rolling stock, a maintenance facility, and right-of-way acquisition are presented in Table 3.1-9. These costs are in 1998 dollars and range from $289.4 million for the Rock Island District alignment to $369.9 million for the Norfolk Southern alignment.



Joliet Station



Kankakee Station

FIGURE 3.1-8

CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT

STATION IMPROVEMENT IMPACT AREAS

Table 3.1-8

SUMMARY OF CONSTRUCTION REQUIREMENTS BY AREA

Item	IC/UP	Norfolk Southern	Rock Island District
CHICAGO - DWIGHT			
Track Connections			
Location	None	31st St./Kankakee/Dwight	None
Additional Right-of-Way - Hectares (Acres)	0 (0)	0/0/3 (0/0/8)	0 (0)
Stations			
Location	None	Kankakee - New Station	Joliet - Platform/Parking
Additional Right-of-Way - Hectares (Acres)	0 (0)	1 (3)	1 (2)
Double Track			
Kilometers (Miles)	0 (0)	22.6 (14.0)	0 (0)
Additional Right-of-Way - Hectares (Acres)	0 (0)	0 (0)	0 (0)
Freight Sidings			
Kilometers (Miles)	4.8 (3.0)	8.1 (5.0)	4.8 (3.0)
Additional Right-of-Way - Hectares (Acres)	0 (0)	12 (30)	0 (0)
Grade Separations			
Number	2	1	0
Additional Right-of-Way - Hectares (Acres)	9 (21)	2 (5)	0 (0)
Service Roads			
Number	6	7	3
Kilometers (Miles)	3.2 (2.0)	5.8 (3.6)	1.7 (1.1)
Additional Right-of-Way - Hectares (Acres)	5 (12)	9 (21)	3 (7)
DWIGHT - ST. LOUIS			
Double Track			
Kilometers (Miles)	19.8 (12.3)	19.8 (12.3)	19.8 (12.3)
Additional Right-of-Way - Hectares (Acres)	0 (0)	0 (0)	0 (0)
Freight Sidings			
Kilometers (Miles)	35.3 (21.9)	35.3 (21.9)	35.3 (21.9)
Additional Right-of-Way - Hectares (Acres)	0 (0)	0 (0)	0 (0)
Grade Separations			
Number	3	3	3
Additional Right-of-Way - Hectares (Acres)	3 (8)	3 (8)	3 (8)
Service Roads			
Number	27	27	27
Kilometers (Miles)	21.8 (13.5)	21.8 (13.5)	21.8 (13.5)
Additional Right-of-Way - Hectares (Acres)	33 (81)	33 (81)	33 (81)
Total Additional R/W Required - Hectares (Acres	**49 (121)**	**63 (156)**	**39 (97)**

Source: De Leuw, Cather & Company, February 2000.

Table 3.1-9
ESTIMATED CAPITAL COSTS FOR HIGH-SPEED RAIL ALIGNMENTS
(1998 - $Millions)

	Alignment		
	IC/UP	**Norfolk Southern**	**Rock Island**
Civil (1)	148.3	207.7	132.3
Grade Crossing Treatment	37.2	37.4	33.0
Rolling Stock (2)	108.5	108.5	108.5
Maintenance Facility (2)	15.1	15.1	15.1
Right-of-Way	3.2	1.2	0.5
Total	**312.3**	**369.9**	**289.4**

Source: Illinois Department of Transportation, September 1998.
De Leuw, Cather & Company, February 2000.
Sverdrup Civil, Inc., January 1997.
Applied Real Estate Analysis, Inc., January 1997.

(1) Includes earthwork, structures, track, and signals.
(2) Chicago - St. Louis High Speed Rail Financial and Implementation Plan costs modified and adjusted to 1998 dollars.

3.2 ALTERNATIVES CONSIDERED AND DISMISSED

As introduced at the beginning of this section, 140 mph (225 kph) electric and 90 mph (145 kph) diesel alternatives for the Chicago - St. Louis corridor were analyzed in this study or previous studies and dismissed because they would result in greater adverse impact, would be too expensive to construct, or would not provide service as effective as the HSR alternative still under consideration. A discussion of these alternatives and the reasons for their dismissal is provided below.

3.2.1 140 MPH (225 KPH) Electric Service

A 140 mph (225 kph) electric high-speed rail system would require the installation of an overhead catenary system to provide power to electric locomotives. To provide power to the catenary system, substations would be required along the corridor. Together, these two items alone would add over $400 million to the capital costs. Additionally, all highway-railroad at-grade crossings in areas where train speeds exceed 125 mph (200 kph) would have to be closed or grade separated in accordance with FRA guidelines.

A 140 mph (225 kph) system would allow for shorter travel times than the 110 to 125 mph (180 to 200 kph) system still under consideration. Trip time estimates developed for the Financial and Implementation Plan indicate that a Chicago - St. Louis corridor one-way trip under the 140 mph (225 kph) system would take six minutes less than a one-way trip with 125 mph (200 kph) service. However, capital costs associated with the 140 mph (225 kph) system were projected to be twice as much as the 110 to 125 mph (180 to 200 kph) non-electric system, primarily because of the cost associated with electrifying the corridor. Closing or grade

separating approximately 50 percent of the at-grade crossings in the corridor would also disrupt traffic, as many of these crossings accommodate over 2,500 vehicles per day, and add substantially to the cost of this system, with a typical grade separation costing approximately $3 million.

Ridership and financial analyses prepared for the Financial and Implementation Plan indicate that the added revenues associated with the six minute time savings between Chicago and St. Louis would not be sufficient to support the additional costs of an electrified system. The 140 mph (225 kph) electric system was dropped from further consideration because of the substantially higher costs associated with electrification of the corridor and the grade crossing treatments. These additional costs were projected to result in only nominal HSR service improvements.

3.2.2 90 MPH (145 KPH) Diesel Service

A 90 mph (145 kph) high-speed rail service was also evaluated as an option for the corridor. However, this system would require many of the improvements associated with the 110 to 125 mph (180 to 200 kph) alternative, while providing a much smaller service improvement. Projected end-to-end travel time with a maximum speed of 90 mph (145 kph) is approximately 4.25 hours. Of the estimated capital costs listed in Table 3.1-9 for the 110 to 125 mph (180 to 200 kph) HSR alternative, only costs associated with grade crossing treatments would be reduced with the 90 mph (145 kph) alternative. With a top operating speed of 90 mph (145 kph), no vehicle arresting barriers would be required between Lincoln and Springfield, where 125 mph (200 kph) service is proposed with the 110 to 125 mph (180 to 200 kph) alternative. Provision of conventional gates, instead of VABs, in this area would reduce costs by approximately one percent ($4 million).

Based on this information, the 90 mph (145 kph) alternative was dropped from further consideration.

3.3 ALIGNMENTS CONSIDERED AND DISMISSED

In addition to the three alignments described in Section 3.1.2.1, Alignment Options, several other alignments were evaluated for this project and dismissed because they would result in greater environmental impacts or would not provide service as effective as the other alignments. A discussion of the dismissed alignments and the reasons for their dismissal is provided below.

3.3.1 Atchison Topeka & Santa Fe Alternative Alignment through Lockport

As a modification to the IC/UP alternative alignment, an alignment was considered to avoid impacting the downtown historic district and existing highway-railroad at-grade crossings in Lockport. Three connection alternatives between IC tracks and the Atchison Topeka & Santa Fe (ATSF, now merged with Burlington Northern and called BNSF) tracks were evaluated between Lemont and Lockport to essentially provide a bypass of Lockport. This alternative alignment would use the same tracks as proposed under the IC/UP alignment north of Lemont and south of Joliet as the BNSF rejoins the IC south of Lockport in Joliet. Implementation of any of these connections would require the addition of a single track on the BNSF mainline to avoid conflict with existing freight operations and a new crossing of the Illinois and Michigan (I&M) Canal. Figure 3.3-1 shows the location of these alternatives. The estimated cost for these options ranged from $15.1 million to $16.7 million (in 1996 dollars).

Portions of the I&M Canal were designated as a National Historic Landmark and placed on the National

Register of Historic Places (NRHP) in 1966. Since then, the original boundaries of the historically significant areas have not been amended, although it is generally acknowledged that other segments of the I&M Canal in Cook and Will Counties are eligible for listing as a National Historic Landmark on the NRHP. The first two BNSF connection alternatives just outside of Lemont would cross the I&M Canal in areas not listed, but eligible for listing, on the NRHP. (See coordination from the Deputy State Historic Preservation Officer in Appendix C-1.) The third connection alternative, south of 135th Street, would cross the I&M Canal and recreation trail/bike path in an area that has been designated as a National Historic Landmark and placed on the NRHP.

Impacts associated with a new crossing of the I&M Canal, with the potential impact areas either listed or eligible for listing on the NRHP, would result in impacts to 4(f) property and prohibit selection of this alternative if a reasonable and prudent alternative to the alignment exists. The IC/UP alternative alignment selected for evaluation under the HSR alternative in this DEIS is considered a reasonable and prudent alternative, and no 4(f) property will be impacted by this alignment between Lemont and Joliet.

The BNSF alternative alignment options were not considered further because of the potential impacts to the I&M Canal and the additional costs associated with crossing the Canal and adding a third track to the BNSF mainline. Use of the BNSF between Joliet and Chicago would eliminate the need for an I&M Canal crossing. However, a single track would still have to be added to the mainline throughout the entire alignment. The physical and financial constraints associated with the provision of an additional track were determined to be prohibitive.

3.3.2 Merchants Bridge/Amtrak Alternative Alignment into St. Louis

The current Amtrak route between Granite City and St. Louis was considered as a HSR alternative alignment. This route uses Merchants Bridge to cross the Mississippi River (See Figure 3.1-3). Operational analyses indicate that service on this alignment would be 20 minutes slower than the HSR alternative alignment using MacArthur Bridge currently considered. This is primarily because of the circuity of the alignment and the numerous (about 20) highway-railroad at-grade crossings in Missouri. Therefore, this alternative was dismissed from further consideration.

3.3.3 Toledo Peoria & Western Peotone Alternative Alignment

The Toledo Peoria & Western (TPW) alternative alignment is one of two additional alignments evaluated that could provide access to the SSA site in the Peotone area along the IC New Orleans mainline through Peotone. This alignment would consist of the Metra Electric tracks between downtown Chicago and a point between 23rd Street and 31st Street in the City of Chicago and the IC mainline between the junction with the Metra Electric line and Gilman, located approximately 32 kilometers (20 miles) south of Kankakee. At Gilman, this alignment would proceed west using a 65-kilometer (40-mile) segment of TPW track to connect with the UP in Chenoa. South of Chenoa, the same track as proposed for use under the three alternative alignments still under consideration would be used. Figure 3.3-2 shows the location of this alternative alignment between Chicago and Chenoa.

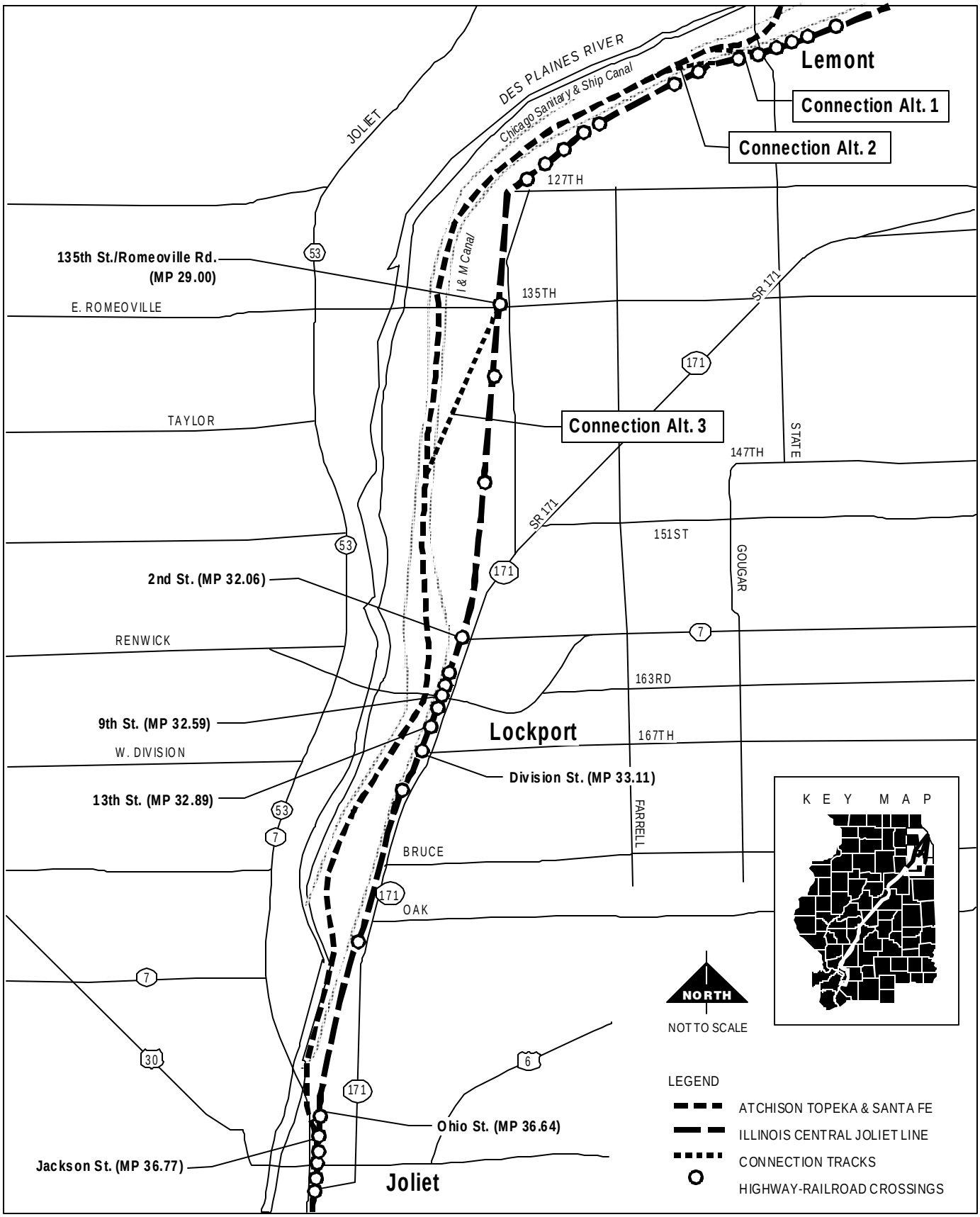


FIGURE 3.3-1
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
ATCHISON TOPEKA & SANTA FE ALTERNATIVE ALIGNMENTS

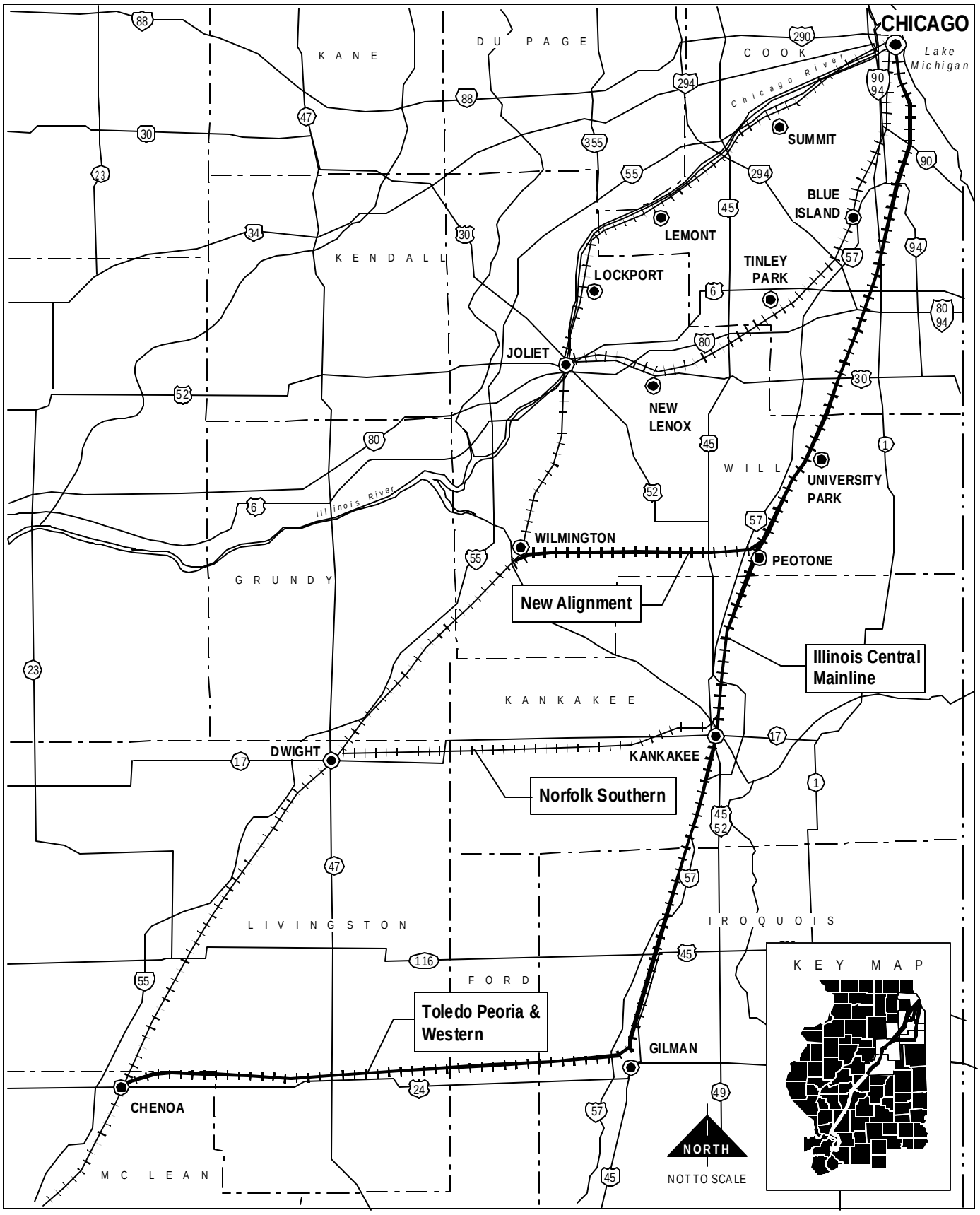


FIGURE 3.3-2
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
TOLEDO PEORIA & WESTERN AND NEW ALTERNATIVE ALIGNMENTS

The TPW route is approximately eight kilometers (five miles) longer than the Norfolk Southern alignment and would require substantially more upgrading to safely carry high-speed passenger trains. Trains using the current track are restricted by a 40-mph (65-kph) speed limit. Track upgrading costs associated with this alignment were estimated to be approximately $9 million more than for the Norfolk Southern alignment. The TPW tracks also pass through the center of an additional seven small communities, in Ford, Livingston, and McLean Counties, and approximately 10 to 15 more grade crossings would be impacted under this option than with the Norfolk Southern. Since projected end-to-end travel time and estimated capital cost are greater than those projected for the Norfolk Southern alignment, this alignment was dismissed from further consideration.

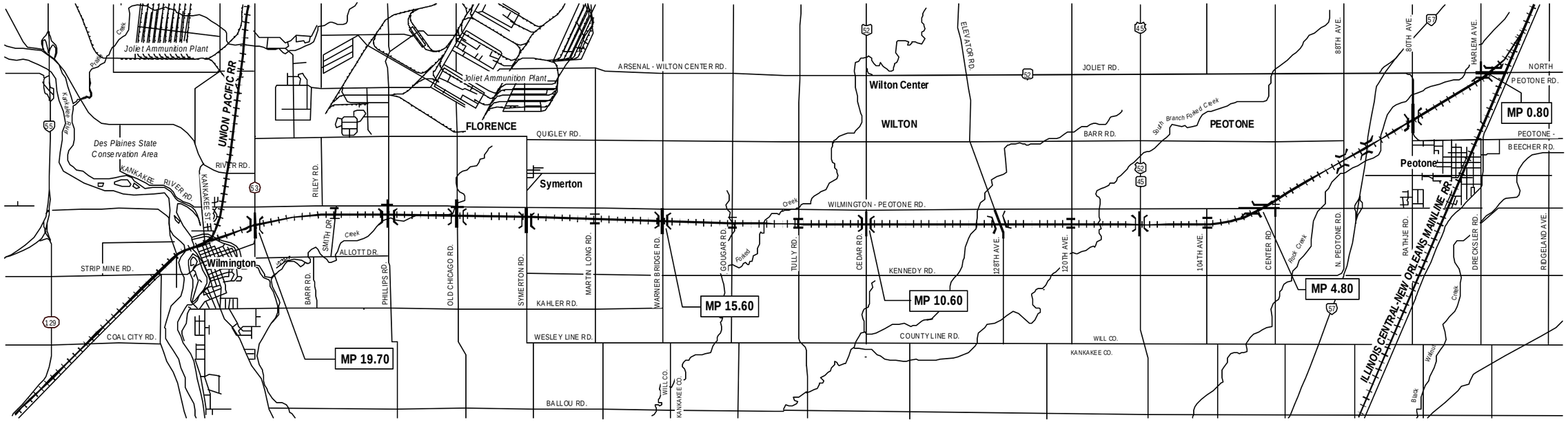
3.3.4 New Alternative Alignment between Peotone and Wilmington

This alignment is the second of the additional alternative alignments evaluated and dismissed that could provide access to the proposed SSA site in Peotone. This alignment would consist of the same track — Metra Electric and IC New Orleans mainline — as proposed for the Norfolk Southern alignment between the downtown Chicago Randolph Street Station and a point approximately 2.4 kilometers (1.5 miles) north of Peotone. Between this point north of Peotone and Wilmington, a new railroad alignment, approximately 32 kilometers (20 miles) in length, was evaluated. South of Wilmington, the same track as proposed for use with the IC/UP and Rock Island District alignments would be used. This new alignment between Chicago and Wilmington is shown on Figure 3.3-2; a more detailed depiction of the alignment between Peotone and Wilmington is provided on Figure 3.3-3.

For the proposed new alignment between Peotone and Wilmington, new track construction would be required, with a minimum right-of-way width of 30 meters (100 feet) identified. As part of this construction, connections to the IC mainline north of Peotone and to the UP in Wilmington would be required. Additionally, the new alignment would cross 21 existing roadways and two private driveways. Thirteen of these potential crossings were identified as locations for potential grade separations, and 10 were identified for closure.

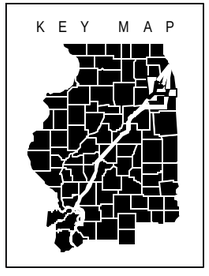
This alignment would be eight kilometers (five miles) shorter than the Norfolk Southern alignment between Chicago and St. Louis. With each crossing either grade separated or closed, trains could also operate at 125 mph (200 kph) between Peotone and Wilmington. As a result, end-to-end travel times on the new alignment would be approximately six to nine minutes less than along any of the three alignments still under consideration. However, in comparison to the Norfolk Southern alignment which would provide similar service with access to the SSA site, the new alignment was estimated to cost an additional $50 million while resulting in more environmental impacts, particularly relative to agriculture and land acquisition.

The associated environmental impacts and additional capital investment required with this alignment were determined to be greater than the benefits of reducing end-to-end travel time by six to nine minutes. Therefore, the new alignment was dismissed from further consideration.



LEGEND

- ADDITIONAL ROADWAY RIGHT-OF-WAY REQUIRED
- PROPOSED GRADE SEPARATION
- PROPOSED CLOSURE



NORTH

NOT TO SCALE

FIGURE 3.3-3
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
NEW ALIGNMENT
PEOTONE TO WILMINGTON

Section 4
TRANSPORTATION IMPACTS

This section summarizes the transportation impacts expected under the No-Build and High-Speed Rail (HSR) alternatives. Year 2010 ridership projections and operating revenues for passenger rail service are presented for each alternative. Projected annual person trips for air, bus, and automobile intercity travel are also presented. Information on operating costs per person-kilometer (person-mile) is presented and used to compare the different travel modes in the HSR corridor under each alternative. In addition to the intercity passenger information, 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 at-grade crossings in the corridor.

4.1 PROJECTED RIDERSHIP AND OPERATING REVENUE FOR RAIL PASSENGER SERVICE

4.1.1 Projected Ridership

Ridership projections for the High-Speed Rail alternative 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 this Draft Environmental Impact Statement (DEIS). The model used to develop the HSR projections predicted the total traffic generated along each alignment based on growth factors that reflected change in socio-economic factors such as population, employment, and income, as well as travel growth factors for different modes. For each HSR alternative alignment, trips were distributed among travel modes based on access/egress cost, access/egress time, terminal time, in-vehicle travel time, frequency of departure, and fares. Since the HSR forecasts were developed, additional computer simulation of HSR operations has been conducted. As a result of this additional analysis, simulated end-to-end running times have increased from six to 11 minutes on the alternative alignments. Ridership forecasts, however, were not adjusted to reflect this change in operating time.

No-Build alternative projections were not developed as part of these earlier efforts. For the evaluation presented in this document, 2010 No-Build forecasts were developed. Future person trips in the corridor under the No-Build alternative were assumed to be the same as the total person trips projected for the Illinois Central/Union Pacific (IC/UP) alignment under the HSR alternative minus the induced HSR travel. The existing mode share factors, as described in Section 2.3 Transportation Facilities and Services, were assumed to be similar for the 2010 No-Build alternative and were applied to the total person trips to determine person trips by mode.

Additionally, when the HSR alternative ridership forecasts were developed, the Rock Island District alignment was not considered. Therefore, no forecasts were developed for this alignment. For the purpose of evaluation in this document, projected ridership on the Rock Island District alternative alignment is assumed to be the same as that projected for the IC/UP alternative alignment. The difference in Chicago - St. Louis HSR

travel times between the IC/UP alignment and the Rock Island District alignment is approximately one minute, and service on either of these alignments would stop at the same stations. Therefore, ridership forecasts should be similar between the two alignments.

No-Build Alternative: Based on the developed forecasts, rail passenger ridership in the corridor will 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.

High-Speed Rail Alternative: Under each of the three HSR alternative alignments, projected rail passenger ridership is substantially higher than ridership projected under the No-Build alternative. Projected ridership is approximately 1.3 million annual passengers under each of the HSR alternative alignments.

The projected HSR ridership level is over three times 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. HSR implementation on any of the proposed alternative alignments will not substantially change the total number of person trips along the corridor. It is projected that approximately 65 percent of HSR passengers in the year 2010 will be travelers diverted from other modes. Thirty-two percent of the ridership will be generated from existing rail ridership and projected growth, while approximately three percent will be realized from induced demand. The three largest rail market pairs along the corridor are Chicago to St. Louis, Chicago to Bloomington, and Chicago to Springfield for all of the alignments under consideration.

Table 4.1-1 lists the 2010 ridership projections for the No-Build alternative and each of the HSR alternative alignments.

4.1.2 Operating Revenue

Projected year 2010 operating revenues were developed based on the ridership forecasts. Fare data and projected revenues are in 1991 dollars.

No-Build Alternative: Operating revenue under the No-Build alternative was estimated to be $7.8 million using fares ranging from $5.00 to $19.50 per passenger trip. One-way fares between Chicago and St. Louis and between Chicago and Springfield were both $19.50 per passenger trip (Wilbur Smith Associates, 1994). As with the current Amtrak fare structure, no differentiation in fare was assumed for business and non-business travel. This compares with 1999 one-way fares of $34.00 between Chicago and St. Louis and $30.00 between Chicago and Springfield.

Table 4.1-1
2010 ANNUAL RAIL RIDERSHIP PROJECTIONS

	Alternative			
		High-Speed Rail		
Type of Trips	**No-Build**	**IC/UP**	**Norfolk Southern**	**Rock Island District**
Business				
Base	69,300	69,300	70,300	69,300
Growth	42,700	42,700	43,300	42,700
Diverted		310,800	311,000	310,800
Induced		16,400	15,800	16,400
Sub-Total	**112,000**	**439,200**	**440,400**	**439,200**
Non-Business				
Base	201,700	201,700	204,500	201,700
Growth	92,300	92,300	93,600	92,300
Diverted		534,600	531,800	534,600
Induced		27,900	27,900	27,900
Sub-Total	**294,000**	**856,500**	**857,800**	**856,500**
Total Ridership	**406,000**	**1,295,700**	**1,298,200**	**1,295,700**

Source: Wilbur Smith Associates, Chicago - St. Louis High Speed Rail Corridor Study Ridership Forecast Technical Report, June 1994; updated by DCCO, August 1999.

Notes:

1. The No-Build alternative assumes the same growth rate as for the IC/UP alternative alignment.
2. High-Speed Rail ridership estimates assume travel times between Chicago and St. Louis of 3:21 on IC/UP and 3:18 on Norfolk Southern.
3. Rock Island District projections assumed to be the same as IC/UP.
4. Rail fares for the Chicago - St. Louis trip: $65 (Business) and $47 (Non-business).
5. Air fares for the Chicago - St. Louis trip: $150 (Business) and $115 (Non-Business).

High-Speed Rail Alternative: A two-tier fare structure was assumed for the HSR alternative with one-way business fares per passenger trip ranging from $15.00 to $65.00 dollars and one-way non-business fares ranging from $13.00 to $47.00. The business and non-business fares assumed for Chicago to Springfield service were $62.00 and $39.00 dollars, respectively, and were only slightly lower than the fares between Chicago and St. Louis. Revenue projections for the HSR alternative alignments were approximately eight times greater than the No-Build alternative and were approximately $62 million annually (Wilbur Smith Associates, 1994). Among the HSR alternative alignments, the revenue projections are proportional to the ridership projections.

4.2 PROJECTED OPERATING COSTS

Data on operating costs per person-kilometer (person-mile) were obtained for each of the four modes of travel evaluated in the HSR corridor. The operating costs for automobile, air, and bus are based on national averages. The rail operating costs assumed for the No-Build alternative are current Chicago - St. Louis Amtrak costs. For the HSR alternative, operating costs were calculated by dividing the $32 million (1994 dollars) operating cost estimate from the Financial and Implementation Plan by the approximately 460 million person-kilometers (285 million person-miles) of travel projected for the corridor, derived from ridership estimates. A three percent annual escalation rate could be used to convert these costs to current year dollars. The operating costs per person-kilometer (person-mile) in 1994 dollars are listed below. For automobile, the operating cost reflects the cost of gasoline only.

Rail:	
No-Build Alternative	$0.11 ($0.17)
High-Speed Rail Alternative	$0.07 ($0.11)
Air:	$0.07 - $0.11 ($0.11 - $0.18)
Bus:	$0.04 - $0.10 ($0.06 - $0.16)
Automobile:	$0.04 ($0.07)

These figures indicate that rail operating costs under the HSR alternative will be more competitive with the other three modes of travel than with the No-Build alternative.

4.3 IMPACTS TO INTERCITY PASSENGER SERVICE

Total person trips in the corridor are projected to increase to 45 to 47 million by the year 2010. This represents an approximately 27 percent increase over existing (1998) corridor person trips. Projected annual person trips in the corridor for the year 2010 are presented by mode in Table 4.3-1.

4.3.1 Passenger Rail Service

No-Build Alternative: Under the No-Build alternative, the Amtrak routes operating in the HSR corridor will remain unchanged. Although ridership is projected to increase on these routes, the increases will be proportional to travel demand growth in the corridor. Therefore, it is anticipated that

Table 4.3-1
EXISTING AND PROJECTED (2010) ANNUAL PERSON TRIPS

HIGH-SPEED RAIL PROJECTIONS FOR ALL TRAVEL MODES (1,000'S) WITH CHICAGO - JOLIET AND ST. LOUIS - ALTON MARKETS

	Alternative									
					High-Speed Rail					
	Existing (1998)		No-Build		IC/UP		Norfolk Southern		Rock Island District	
Mode	Trips	Percent	Trips	Percent	Trips	Percent	Trips	Percent	Trips	Percent
Rail	271	0.8	406	0.9	1,296	2.9	1,298	2.8	1,296	2.9
Air	1,109	3.2	1,391	3.1	875	2.0	871	1.9	875	2.0
Bus	98	0.3	211	0.5	178	0.4	171	0.4	178	0.4
Auto	33,675	95.8	42,750	95.5	42,454	94.8	44,640	95.0	42,454	94.8
TOTAL	**35,153**	**100.0**	**44,758**	**100.0**	**44,803**	**100.0**	**46,980**	**100.0**	**44,803**	**100.0**

HIGH-SPEED RAIL PROJECTIONS FOR ALL TRAVEL MODES (1,000'S) WITHOUT CHICAGO - JOLIET AND ST. LOUIS - ALTON MARKETS

	Alternative									
					High-Speed Rail					
	Existing (1998)		No-Build		IC/UP		Norfolk Southern		Rock Island District	
Mode	Trips	Percent	Trips	Percent	Trips	Percent	Trips	Percent	Trips	Percent
Rail	271	2.8	406	3.5	1,296	11.2	1,298	10.8	1,296	11.2
Air	1,109	11.3	1,391	12.0	875	7.5	871	7.3	875	7.5
Bus	98	1.0	211	1.8	178	1.5	171	1.4	178	1.5
Auto	8,350	85.0	9,552	82.6	9,265	79.8	9,662	80.5	9,265	79.8
TOTAL	**9,828**	**100.0**	**11,560**	**100.0**	**11,614**	**100.0**	**12,002**	**100.0**	**11,614**	**100.0**

Source: Wilbur Smith Associates, Chicago - St. Louis High Speed Rail Corridor Study Ridership Forecast Technical Report, June 1994; updated by DCCO, August 1999.

passenger rail service will continue to account for a similar share — approximately one percent — of the annual corridor person trips.

High-Speed Rail Alternative: With the implementation of high-speed rail service, the three Chicago - St. Louis Amtrak round trips will be replaced by eight HSR round trips between these two cities. HSR ridership is projected to be approximately three times greater than under the No-Build alternative. It is expected that this additional ridership will come primarily from travelers diverting from other modes of travel. As a result, 2010 intercity passenger rail service is projected to account for nearly three percent of the annual corridor person trips.

The Chicago to Joliet and St. Louis to Alton travel markets are comprised of short, largely commuter based trips taken almost exclusively by automobile. If these markets are not included in the annual person trip analysis, HSR trips will account for approximately 11 percent of corridor trips. This number provides a more accurate representation of the intercity travel market between Chicago and St. Louis.

It is not anticipated that implementation of high-speed rail service will result in a change in the number of trains operating daily on the Amtrak Chicago - Carbondale - New Orleans route. However, if the Norfolk Southern alignment were chosen, scheduling modifications may be necessary to eliminate conflicts between HSR and Amtrak Chicago - Carbondale - New Orleans service.

4.3.2 Passenger Air Service

No-Build Alternative: Under the No-Build alternative, air travel in the corridor is projected to increase 25 percent from existing (1998) conditions to approximately 1.4 million trips for the year 2010. Based on this projection, air travel will continue to account for approximately three percent of the annual corridor person trips.

High-Speed Rail Alternative: If HSR service were implemented, 2010 projections indicate that approximately 58 percent of the additional rail passengers will be those diverting from air travel. As a result, total air travel person trips in the corridor are projected to be approximately 870,000 to 875,000 and will account for approximately two percent of the annual corridor person trips.

These projections indicate that HSR passenger service will provide a viable alternative to air travel in the corridor from the intermediate airports at Springfield and Bloomington and, to a lesser extent, from St. Louis.

4.3.3 Passenger Bus Service

No-Build Alternative: Under the No-Build alternative, bus ridership is projected to increase 115 percent to 211,000 annual person trips in the year 2010. Even with this substantial increase, bus travel will only account for 0.5 percent of the total annual person trips in the Chicago - St. Louis corridor. This represents a slight increase from its current share of 0.3 percent of total person trips.

High-Speed Alternative: If HSR service were implemented, some of the projected bus travellers will divert to enhanced passenger rail service. Projected bus ridership under the HSR alternative range from 170,000 to 180,000 annual person trips. At these levels, bus travel will account for approximately 0.4 percent of the total annual person trips in the corridor.

4.4 IMPACTS TO AUTOMOBILE TRAVEL

No-Build Alternative: Intercity travel by automobile is projected to increase by approximately 27 percent by the year 2010. With this projected increase, automobile travel will continue to account for approximately 95 percent of travel in the Chicago - St. Louis corridor. Table 4.3-1 lists the projected 2010 automobile person trips in the HSR corridor for each alternative.

High-Speed Rail Alternative: High-speed rail projections indicate that approximately 33 percent of additional rail ridership will be from travellers diverting from automobile travel. While this is a substantial percentage of additional rail travellers, automobile travel will still account for approximately 95 percent of annual person trips in the HSR corridor.

4.5 ADDITIONAL IMPACTS TO RAIL OPERATIONS

4.5.1 Freight Traffic

No-Build Alternative: No changes to existing freight operations will be required with the No-Build alternative. Except on the IC/UP alignment, existing freight traffic was assumed for the year 2010. As part of the Union Pacific (UP)/Southern Pacific (SP) merger, freight traffic on the IC/UP alignment is planned to be decreased in the HSR corridor (Surface Transportation Board, 1996). These planned changes are reflected in Table 4.5-1 which shows the number of trains that will operate in the corridor in the year 2010 on tracks that could be used by HSR trains. Between Chicago and Joliet and Springfield and East St. Louis, six freight trains will operate each day. Between Joliet and Springfield, no more than three freight trains are planned each day.

High-Speed Rail Alternative: Implementation of HSR is not expected to result in a change in the number of freight trains operating in the Chicago - St. Louis corridor daily. The same number of daily freight trains assumed under the No-Build alternative is assumed for the HSR alternative. Some freight train scheduling modifications may be required to prevent conflicts with HSR service. Following standard railroad operating procedures, high-speed passenger trains will receive scheduling priority over freight trains. The increased frequency of passenger trains will further restrict rail time available for freight movements. Since high-speed operations will occur primarily during the daytime, some new or existing freight trains may have to be rescheduled for nighttime travel.

4.5.2 Commuter Rail Service

No-Build Alternative: Commuter rail service in the Chicago area currently operates on the Illinois Central (IC) Joliet Line, IC mainline, and the Rock Island District. No other commuter rail service operates in the corridor. Since Amtrak service will remain the same under the No-Build alternative, no impacts to commuter rail service are anticipated. Future commuter rail service is assumed to be the same as existing service for the purpose of this analysis.

Table 4.5-1
FUTURE NUMBER OF DAILY TRAINS OPERATING IN HIGH-SPEED RAIL CORRIDOR

	Alternative											
				High-Speed Rail								
	No-Build			IC/UP			Norfolk Southern			Rock Island District		
Railroad (Location)	Passenger	Freight	Metra	Passenger	Freight	Metra	Passenger	Freight	Metra	Passenger	Freight	Metra
IC-Joliet Line												
Chicago to Joliet	6	6	6	16	6	6						
Union Pacific (and TRRA)												
Joliet to Dwight	6	2		16	2					16	2	
Dwight to Bloomington	6	2		16	2		16	2		16	2	
Bloomington to Springfield	6	3		16	3		16	3		16	3	
Springfield to St. Louis	6	6		16	6		16	6		16	6	
Metra Electric Line												
Randolph St. to 31st Street			181				16		181			
Illinois Central Mainline												
31st Street to Kankakee	4	12					20	12				
Norfolk Southern												
Kankakee to Dwight		5					16	5				
Rock Island District Line												
LaSalle St. to Gresham			68							16		68
Gresham to Blue Island			24							16		24
Blue Island to New Lenox		3	46							16	3	46
New Lenox to Joilet		3	45							16	3	45

Compiled by De Leuw, Cather & Company, August 1999.

High-Speed Rail Alternative: Implementation of HSR service will not result in changes in the number of commuter trains operating daily. However, under the HSR alternative, additional intercity passenger trains will operate, potentially impacting commuter rail service. Commuter rail schedules were evaluated to determine how much of an impact HSR service will have on commuter service. HSR operation on the IC/UP alignment will operate on the same tracks as the Metropolitan Rail Corporation (Metra) Heritage Corridor Line between Chicago Union Station and Joliet. With the Norfolk Southern alignment, HSR service will operate on the tracks used by the Metra Electric Line and the South Shore Line between Chicago Randolph Street Station and 31st Street in Chicago. Additional conflicts could occur with the Norfolk Southern alignment where HSR trains will switch between IC mainline tracks and Metra tracks and where the South Shore service crosses the IC mainline at Kensington. HSR service on the Rock Island District alignment will operate with Metra Rock Island District service between Chicago LaSalle Street Station and Joliet.

Rail simulation conducted for this project indicates that one evening peak hour commuter train on the Metra Electric Line will have to be rescheduled to eliminate a potential conflict under the Norfolk Southern alignment. No rescheduling of Metra commuter trains will be required for HSR service on the IC/UP or Rock Island District alternative alignments.

4.5.3 Construction Related Impacts on Railroad Operations

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

High-Speed Rail 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 cost. The second impact will be the need to adjust the schedule of existing operations to create windows of opportunity for construction activities which require temporary shut down of rail operations on selected track sections for limited time.

Since the main UP track between Joliet and East St. Louis has been recently upgraded, the primary construction activity that will impact rail operations is the construction of double track passing sections, new freight sidings, new track connections, and grade separations and work related to improvement of the remaining at-grade crossings. Slow orders will be imposed in the areas where these improvements will be made.

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

The extent of delays and the frequency of disruptions to the existing rail operations will depend on the type of improvements recommended and the proposed schedule for the implementation of these improvements. If an aggressive schedule is adopted, there will be substantial impact for a relatively short time period of two to three years, before the new service is fully operational. On the other hand, if a slow, incremental approach is adopted, whereby the improvements are spread out over a 10 to 15 year period, the impact of each individual improvement may not be much greater than that of the normal maintenance activity under existing conditions.

The exact nature of these impacts will vary depending on which alignment is selected.

4.6 ADDITIONAL IMPACTS TO VEHICULAR OPERATIONS

4.6.1 At-Grade Crossings

No-Build Alternative: Under the No-Build Alternative, no major traffic impact is expected. No modifications to the existing at-grade crossings in the corridor are proposed.

High-Speed Rail Alternative: All of the at-grade crossings in the project area were reevaluated as part of the preparation of this DEIS. The recommendations developed and presented in this document supersede those included in the Chicago - St. Louis HSR Study, Grade Crossing Safety Analysis, prepared for the Illinois Department of Transportation (IDOT) in 1993 and 1994. The High Speed Rail Corridor: Rail Crossing Analysis (December 1996 and amended in February 2000) describes in complete detail the analysis of the at-grade crossings in the corridor. A summary of the current at-grade crossing recommendations is presented in Section 3.1.2.1 and Table 3.1-6. Table 3.1-7 provides a list of the crossings where closure is recommended with the provision of a frontage/service road. Specific recommendations for each crossing are provided in Appendix B.

Implementation of the grade crossing treatment recommendations as part of the HSR alternative will impact vehicular traffic throughout the corridor. However, impact will be limited mostly to low volume roads because almost all major, high volume roads that were built or substantially upgraded over the years have included grade separations with the existing railroads. Also, only grade crossings on lower volume roads have been selected for closure. While approximately 26 to 29 percent of the at-grade crossings are suggested for closure, these crossings only accommodate around two to three percent of the average daily traffic (ADT) crossing the alternative alignments throughout the HSR corridor. Average daily traffic on the existing at-grade crossings range from one to 41,000 vehicles (95th Street (MP 10.80) - Rock Island District alignment). Of the crossings proposed for closure, none have an ADT greater than 2,210 vehicles. Table 4.6-1 summarizes this information. In all instances where crossing closures are proposed, adequate reserve capacity exists on the adjacent crossings to handle the diverted traffic.

Most of the higher volume crossings are located within the urbanized areas of the corridor. Springfield has 14 grade crossings where ADT exceeds 5,000 vehicles, while Bloomington/Normal has six such crossings. A number of the smaller towns also have one or two crossings in the higher volume range, but none of these are proposed to be closed under the HSR alternative. Closure of these streets would have caused undue disruption to local traffic circulation and negatively impact land use access.

Because of the low volumes noted above, alternative access, rather than capacity, was the primary consideration in determining which crossings could be closed. In this regard, the Illinois Commerce Commission (ICC) regulation governing the maximum allowable adverse travel became one of the key criterion used for evaluation of potential closures. This criteria specifies 6.5 kilometers (4.0 miles) of adverse travel as maximum allowable in unincorporated areas and 1.21 kilometers (0.75 miles) as the

Table 4.6-1
IMPACT OF CROSSING CLOSURES ON AVERAGE DAILY TRAFFIC ALONG THE HIGH-SPEED RAIL CORRIDOR

	High-Speed Rail Alternative		
	IC/UP	**Norfolk Southern**	**Rock Island District**
ADT on Existing At-Grade Crossings	617,000	606,000	783,000
ADT on At-Grade Crossings Proposed for Closure	11,551	15,148	11,060
Percent of Total Traffic Using At-Grade Crossings Proposed for Closure	1.9	2.5	1.4
Highest Volume Crossing Proposed for Closure	22nd Street (MP 274.80) Granite City ADT=1,200	McKnight Road (MP 51.35) Bourbonnais ADT=2,210	22nd Street (MP 274.80) Granite City ADT=1,200

Source: De Leuw, Cather & Company, February 2000.

maximum in incorporated areas. The travel distance is measured as the shortest, usable path from one side of the closed crossing to the other. A summary of adverse travel that will result if the proposed crossing closures were implemented is presented in Table 4.6-2. As shown in this table, average adverse travel as a result of the proposed at-grade crossing closures on the alternative alignments ranges from 1.39 kilometers (0.86 miles) on the IC/UP alignment to 1.59 kilometers (0.99 miles) on the Norfolk Southern alignment. With adverse travel averaging less than 1.6 kilometers (1.0 mile) for each alignment, the impacts associated with changes in access are expected to be minor.

The use of grade separations will be limited to locations where grades are conducive to separation and where land use impacts will be minimal. These opportunities typically occur on the edge of urban areas where development is less dense than in the center of the town. No more than three existing public vehicular crossings are proposed for separation along any one alignment. Average daily traffic on the grade crossings proposed for separation ranges from 100 (MP 147.60 - Lazy Row Road) to 12,300 vehicles (MP 272.70 - Pontoon Road).

4.6.2 Station Access

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

High-Speed Rail Alternative: If HSR service were implemented, the existing Amtrak stations will be used. New stations may be constructed in Peotone and/or Kankakee if the Norfolk Southern alternative alignment is selected. It is anticipated that the station site(s) selected will have excellent access. All

Table 4.6-2
ADVERSE TRAVEL SUMMARY
FOR VEHICULAR CROSSINGS SUGGESTED FOR CLOSURE ON THE HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS

Alignment	Adverse Travel kilometers (miles)	Number of Vehicular Crossings Closed	Total Average Daily Traffic	Total Additional Vehicle Miles Traveled kilometers (miles)	Average Distance kilometers (miles)
IC/UP	0.0 - 0.8 (0.0 - 0.5)	16	5,467	3,444 (2,135)	0.63 (0.39)
	0.8 - 1.6 (0.5 - 1.0)	17	3,863	4,681 (2,902)	1.21 (0.75)
	1.6 - 3.2 (1.0 - 2.0)	19	1,115	2,376 (1,473)	2.13 (1.32)
	3.2 - 4.8 (2.0 - 3.0)	9	464	1,777 (1,102)	3.83 (2.38)
	4.8 - 6.5 (3.0 - 4.0)	7	642	3,785 (2,347)	5.90 (3.66)
	TOTAL	**68**	**11,551**	**16,063 (9,959)**	**1.39 (0.86)**
Norfolk Southern	0.0 - 0.8 (0.0 - 0.5)	15	5,371	3,684 (2,284)	0.69 (0.43)
	0.8 - 1.6 (0.5 - 1.0)	14	5,159	5,897 (3,656)	1.14 (0.71)
	1.6 - 3.2 (1.0 - 2.0)	18	2,719	5,834 (3,617)	2.15 (1.33)
	3.2 - 4.8 (2.0 - 3.0)	11	1,223	4,661 (2,890)	3.81 (2.36)
	4.8 - 6.5 (3.0 - 4.0)	13	676	4,076 (2,527)	6.03 (3.74)
	TOTAL	**71**	**15,148**	**24,152 (14,974)**	**1.59 (0.99)**
Rock Island District	0.0 - 0.8 (0.0 - 0.5)	22	5,081	3,319 (2,058)	0.65 (0.41)
	0.8 - 1.6 (0.5 - 1.0)	17	3,749	4,585 (2,843)	1.22 (0.76)
	1.6 - 3.2 (1.0 - 2.0)	18	1,115	2,376 (1,473)	2.13 (1.32)
	3.2 - 4.8 (2.0 - 3.0)	10	473	1,808 (1,121)	3.82 (2.37)
	4.8 - 6.5 (3.0 - 4.0)	7	642	3,785 (2,347)	5.90 (3.66)
	TOTAL	**74**	**11,060**	**15,874 (9,842)**	**1.44 (0.89)**

Source: De Leuw, Cather & Company, February 2000.

Notes:
1. Adverse travel is the ICC definition of rerouted travel from one side of a suggested closed crossing to the other.
2. Average daily traffic is the sum of the traffic using the suggested closed crossing in each adverse distance category.

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 for St. Louis with the associated circulation plan will substantially improve access to this station.

In Chicago, where public transportation is much more important for station access, the three potential HSR stations are well served by Metra commuter trains, Chicago Transit Authority (CTA) elevated rapid transit lines, and CTA buses. Taxi service is also readily available. The City of Chicago is planning a new downtown transportation center. If plans are adopted, the IC/UP and Rock Island District alignments could terminate at this new center.

The rail stations in other communities are all located in or near the heart of the town which 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, the availability of car rental and taxi pick-up/drop-off service will be more important in the future in smaller towns and cities.

4.6.3 Parking

In Chicago, Amtrak owns the 1700-space West Loop Parking structure and a surface lot with 100 spaces just south of Union Station. These facilities are used primarily by daily commuters who drive to work in downtown Chicago. No special facilities have been provided for rail passengers.

In St. Louis, there is a surface lot with approximately 100 spaces that are shared by Amtrak passengers and employees. The City of St. Louis has obtained a federal grant for the development of a multi-modal transportation center on the current site that may include a major parking structure. The conceptual design is complete for this project and provides for an additional 150 parking spaces. In both of these large urban centers, good public transportation is readily available for access to the HSR stations, and demand for parking by the rail passengers is minimal.

At the suburban stations in Joliet and Summit, Amtrak passengers may use the Metra parking facilities. In the seven other cities and towns serviced by Amtrak, parking designated for Amtrak patrons is available near the stations.

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

High-Speed Rail Alternative: Parking demand at each of the proposed HSR stations was estimated for each alternative alignment for the year 2010. The estimated demand by station ranges from 45 to 245 spaces as shown below. These figures represent the highest demand for each station. The estimated number of spaces for each station varied by fewer than five, regardless of which alignment was evaluated.

Station	2010 Estimated Parking Demand (spaces)
Chicago	60
Joliet or Kankakee	60
Bloomington	85
Springfield	120
Alton	45
St. Louis	245

Existing parking facilities are adequate to meet this projected demand. The multi-modal transportation center in St. Louis will include enough additional parking to meet demand when completed. If new stations are developed in Joliet, Peotone, or Kankakee, adequate parking will be provided.

4.6.4 Safety

Accident estimates were developed for highway-railroad at-grade crossings in the HSR corridor to evaluate the potential effect of the proposed warning and protection device improvements for at-grade crossings that are included as part of the HSR alternative. The U.S. Department of Transportation's procedures, as presented in the Railroad-Highway Grade Crossing Handbook, were used to develop these estimates. These procedures evaluate the vehicular and train traffic using the crossing, train speed at the crossing, warning device type, highway type, and other crossing characteristics to estimate the number of accidents that will occur at a single crossing. The accident estimates were developed for existing conditions, the No-Build alternative, and each of the HSR alternative alignments.

The results of this analysis indicate that implementation of HSR service with proposed grade crossing treatments will reduce the projected number of accidents occurring at highway-railroad at-grade crossings. As shown in Table 4.6-3, the estimated number of accidents at at-grade crossings per year under the HSR alternative is projected to decline between 13 and 18 percent, or approximately one accident per year. When conducting this analysis, future traffic growth was not considered when developing estimates for the No-Build and HSR alternatives. As a result, the estimated number of accidents is also lower under the No-Build alternative than under existing conditions because the number of freight trains operating in the corridor in the future will be reduced as a result of the UP/SP merger. If traffic growth were considered in this analysis, the estimated accidents for the No-Build and HSR alternatives would be higher. However, estimated accidents along the HSR alternative alignments would still be lower than under existing and No-Build conditions.

4.6.5 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.

High-Speed Rail Alternative: Under the HSR alternative, vehicular traffic will be temporarily impacted to varying degrees at locations where at-grade crossings will be improved or new grade separations will be built for the HSR project. The grade crossing improvements will, at a minimum, require traffic to slow

Table 4.6-3
GRADE CROSSING SAFETY ANALYSIS

County - Alignment	Estimated Accidents Per Year			Percent Change From Existing Conditions	
	Existing Conditions	No-Build Alternative	High-Speed Rail Alternative	No-Build Alternative	High-Speed Rail Alternative
Cook - IC/UP Alignment	0.5	0.5	0.4	-3.6%	-13.9%
Cook - Norfolk Southern Alignment (IC mainline track)	0.0	0.0	0.0	0.0%	-34.7%
Cook - Rock Island District Alignment	2.1	2.1	2.1	0.0%	3.2%
Will - IC/UP Alignment	1.5	1.3	1.1	-11.4%	-22.1%
Will - Norfolk Southern Alignment (IC mainline track)	0.4	0.4	0.4	0.0%	-5.3%
Will - Rock Island District Alignment	0.5	0.5	0.5	0.0%	-1.2%
Kankakee - Norfolk Southern Alignment (IC mainline track)	0.4	0.4	0.4	0.0%	-7.2%
Kankakee - Norfolk Southern Alignment (NS track)	0.5	0.5	0.4	0.0%	-11.4%
Grundy - IC/UP and Rock Island District Alignments	0.3	0.2	0.1	-22.1%	-53.9%
Livingston - IC/UP and Rock Island District Alignments	0.9	0.8	0.8	-18.6%	-18.2%
Livingston - Norfolk Southern Alignment (NS track)	0.1	0.1	0.1	0.0%	-3.6%
McLean - All Alignments	1.1	0.9	0.9	-17.6%	-19.2%
Logan - All Alignments	0.5	0.4	0.5	-15.0%	-7.2%
Sangamon - All Alignments	1.6	1.4	1.5	-11.9%	-5.8%
Macoupin - All Alignments	0.7	0.7	0.6	-6.9%	-22.2%
Jersey - All Alignments	0.0	0.0	0.0	-7.3%	-47.0%
Madison - All Alignments	0.8	0.8	0.7	-5.6%	-18.0%
St. Clair - All Alignments	0.0	0.0	0.0	-7.5%	-100.0%
St. Louis - All Alignments	0.0	0.0	0.0	0.0%	0.0%
ALIGNMENT TOTALS					
IC/UP Alignment	8.0	7.0	6.6	-12.3%	-17.5%
Norfolk Southern Alignment	7.2	6.4	6.2	-10.1%	-13.4%
Rock Island District Alignment	9.4	8.5	8.2	-10.0%	-13.3%

Source: De Leuw, Cather & Company, February 2000.

Notes:

1. For accident estimates, vehicle arresting barriers and electric lock gates were assumed to have the same effectiveness as standard crossing gates.
2. Private roads are classified as rural/urban local roads.

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.

In case of new grade separations, traffic may have to be diverted to adjacent roadways for up to four months for the construction of foundations, superstructure and approach roadways. Another option, where adequate right-of-way is available, will be to construct a temporary detour around the construction site. This will reduce the amount of adverse travel but add to the total project cost. For the Rock Island District alignment, two grade separations are proposed at public vehicular crossings; three grade separations are proposed with both the IC/UP and Norfolk Southern alignments.

These impacts to vehicular traffic could affect emergency services, schools, businesses, local festivals, and other activities requiring vehicular access.

4.7 IMPACTS TO OPERATIONS ON NAVIGABLE WATERS

There are two drawbridges along track in the HSR project area. They are both located in the City of Chicago along the IC/UP alignment and both cross Navigable Waters. The first crosses the South Branch Chicago River at approximately 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.

Section 5
ENVIRONMENTAL CONSEQUENCES

Environmental impacts considered relevant to this project have been assessed for the No-Build and High-Speed Rail (HSR) alternatives. Where appropriate, direct, indirect, secondary, and cumulative impacts are described in this section. Impacts associated with the HSR alternative are typically categorized by alternative alignment. For some issues, however, impacts associated with HSR in general are presented, while Clean Air Act conformity, air quality impacts, and energy are described by alternative alignment and equipment options.

The Federal Highway Administration (FHWA) and the Federal Railroad Administration (FRA) are directed by the National Environmental Policy Act of 1969 to address not only potential direct impacts from transportation projects, but also impacts which may be indeterminate and not easily recognized. Such impacts are grouped into general categories of indirect, secondary, and cumulative impacts. Indirect impacts are those which occur as a result of the project but are removed from the immediate right-of-way. Secondary impacts are those that are caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable. Generally, these impacts are induced by the initial action. They comprise a wide variety of secondary effects such as changes in land use, water quality, economic vitality and population density. Cumulative effects are impacts that result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions. The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even secondary impacts but, nonetheless, can add to other disturbances and eventually lead to a measurable environmental change (FHWA, 1992).

5.1 LAND USE AND DEVELOPMENT

Land use and development impacts are described in this section. Since the No-Build alternative is a continuation of existing Amtrak service, no land use and development impacts are expected. Therefore, only impacts associated with the HSR alternative are described.

5.1.1 Regional Implications

The proposed HSR service will utilize existing rail lines which serve established cities and villages. As a result, no direct major influences in land use are anticipated at the regional level. The direct impact on land use and development will be a function of: land available for development or redevelopment; regional and local markets; and the plans, zoning ordinances and economic development programs of local government. These potentials will occur in each of the cities where there will be a station stop for high-speed rail service.

The proposed high-speed service, regardless of the alignment, will provide an alternative to driving or flying for business or personal activities and reduce travel time for thousands of trips along the corridor. Over 1.5 million residents live within an eight-kilometer (five-mile) radius of six proposed stations: Chicago, Joliet (or Kankakee), Bloomington/Normal, Springfield, Alton, and St. Louis. Each of these communities offer unique economic, educational, medical and cultural opportunities. By facilitating access to these corridor communities, high-speed rail service could enhance the way people live, work, shop, go to school, interact

with other businesses and services, and choose to participate in cultural and recreational activities. Some examples of the opportunities and markets within the eight-kilometer (five-mile) radius are as follows:

- 59 institutions of higher education with over 107,000 full-time and 91,000 part-time students;
- 39 hospitals or medical centers;
- 100 cultural attractions or historic sites;
- 36 major recreational areas and public event locations;
- 669,000 person work force; and
- Over 600,000 households with a mean household income of $34,995 (1990) and a total income of $21 billion.

Quick and frequent rail service will increase the opportunities and convenience of attending universities or visiting medical centers. Decreased commuting time could provide part-time students with options for living at home to save money, and opportunities for people to obtain work in other communities along the corridor. Students and workers may also use high-speed rail service for weekend trips and for traveling to research and conference centers, such as in Springfield. Similarly, since Bloomington will be 1.5 hours and Springfield 2.25 hours from Chicago, the way some businesses view these areas as places to locate and to market will change. Access to major medical centers will be enhanced, especially for those traveling long distances for specialized and/or frequent medical care. High-speed rail service will also expand possibilities for one-day field trips for school and special interest groups. The presence of these opportunities will also create an environment favorable for new economic activity and investment. New businesses considering relocation in Illinois stress the importance of local transportation options, the work force within a reasonable commuting time, and access to nearby cities and markets.

Economic impacts from construction and operation will also occur under the HSR alternative. These are described in Section 5.3.3 Economic Impacts.

5.1.2 Rural Areas and Small Communities

The principal concerns of rural and small communities are the potential impacts of road closures. Examples of local concerns about closing highway-railroad crossings include: increased travel distance and time, particularly for emergency and school bus services; traffic and physical changes to crossings that remain open; changes in access to homes and businesses; barriers to community growth; and changes to existing traffic patterns. The approach to analyze grade crossing treatments and make recommendations was intended to be responsive to these concerns and to minimize impacts. The approach and recommendations are described in Section 5.3.1, Grade Crossing Impacts.

Freight trains currently pass through all of the communities where high-speed rail will pass. Freight trains are significantly longer and heavier than the proposed high-speed rail trains. Impacts from sixteen passenger trains (eight round trips) per day are comparatively nominal when evaluated against the No-Build alternative, where there will be two (between Chicago and Kankakee) or three (between Chicago and St. Louis) passenger round trips per day, considering freight train traffic will be the same with either the No-Build or HSR alternative.

The cost of maintaining frontage/service roads on public property that will be constructed to provide access for some at-grade crossings suggested for closure is an area of concern for this project. The responsibility for maintenance and the options for funding will be negotiated between the Illinois Department of

Transportation (IDOT) and the applicable local governmental units after selection of a preferred alternative. In general, roads built on the railroad right-of-way will be maintained by the railroad; new roadways on public property will be maintained by the local governmental unit; and roadways on private property will be maintained by the private property owners. The capital costs of improvements to grade crossings will be borne by the project and require no local funding.

Concern has been expressed about safety where there are established land uses on either side of the railroad tracks which attract pedestrian movement across or along the right-of-way. Of particular concern are children who are used to walking to school or recreational activities by trespassing on the railroad right-of-way. The same intrusion problems have been addressed with interstate highways and urban transit systems with various types of positive barriers. Fencing is proposed within the urbanized areas of the HSR project area along each of the alternative alignments. Where fencing is provided it will be designed to provide the best possible protection to discourage trespassing and to direct pedestrians to a nearby warned crossing, usually within one block of the existing crossing.

IDOT will work with local communities on the detailed design of fencing and crossing treatments once an alternative is selected. Communities with historic qualities and unique architecture may request more decorative fencing along the railroad.

5.1.3 Station Area Impacts

Since implementation of the high-speed rail system is an incremental program, the need for additional parking and/or local circulation improvements at or near HSR stations will evolve as the number of passengers increases. IDOT and the project operators will work with local communities to meet their needs for circulation improvements to support the expanded passenger ridership. As discussed in Section 4.6.3, available parking is sufficient to meet the projected demand.

All of the alternatives will utilize the new station facilities in Saint Louis. There is discussion of a new downtown transportation center in the City of Chicago, and if such plans are adopted, the Illinois Central/Union Pacific (IC/UP) and Rock Island District (RID) alignments could be linked with the new center. The key differences between the HSR alignments in terms of station locations are noted below. See Section 3 for a detailed description of each alternative.

IC/UP Alignment. This alignment will furnish service to station areas that already have Amtrak service.

Norfolk Southern Alignment. The Norfolk Southern (NS) alignment would serve the proposed South Suburban Airport (SSA), if constructed, from a new station in the vicinity of Peotone. The Peotone station site will be on the east side of the IC mainline tracks, north of Peotone, and part of the airport development. A new station is also proposed for Kankakee that will be developed in the IC yards in the northwest quadrant of the IC mainline/Norfolk Southern crossing. The stop in Kankakee would, in effect, replace the Joliet stop on the IC/UP alignment.

Rock Island District Alignment. In Joliet, service on this alignment would stop at Joliet Union Station. Currently, no direct access to the tracks proposed for HSR service is available. Therefore, provision of new platforms, access to the station, and additional parking would be required in the southeast quadrant of the Union Pacific/Rock Island District rail/rail crossing.

5.2 SOIL RESOURCES AND AGRICULTURAL IMPACTS

The No-Build alternative will neither require the acquisition of farmland nor affect farm operations, therefore, it is not discussed in this section. The effects of HSR alternatives on individual farm units are presented in Tables 5.2-1 through 5.2-4 for each alternative alignment. Impacts to farm operations, such as severed farms, adverse travel, displacement of farm residences and agricultural buildings, and loss of agricultural income were assessed, in addition to the taking of prime and important farmland via fee simple acquisition. Hectares (acres) that could be acquired for each of the proposed improvements were determined by measuring right-of-way from aerial mapping (scale: 1:6000). Soils information, including capability classifications, prime and important farmland, etc., was obtained from soil maps (scale: 1:15840) and correlated with soil mapping units identified by the United States Department of Agriculture (USDA) and Natural Resource Conservation Service (NRCS) as qualifying as prime farmland or farmland of statewide importance. The accuracy of these measurements is affected by normal distortion associated with aerial photographs. Consequently, totals presented in this section have been rounded to the nearest acre and converted to hectares. All three of the high-speed rail alternative alignments involve some direct conversion of agricultural land to non-agricultural uses.

5.2.1 Hectares (Acres) of Farmland Acquired for Proposed Improvements

The amount of agricultural land that will be converted for new railroad right-of-way, highway grade separations, or frontage/service roads designed to maintain access to individual farmsteads, has been summarized into three categories: row crops, pasture, and other (see Table 5.2-1). Row crops and pasture were selected because they produce income and are indicative of the use of active farmland in the project corridor. The "other" category that appears in Table 5.2-1 includes hedgerows, wetlands, abandoned fields, and land immediately surrounding farm residences that is not productive farmland, but which is part of an individual farm unit. This classification also includes farm ponds, equipment buildings, lawns, gardens, etc.

Table 5.2-1 shows that the Norfolk Southern alignment will require 47 hectares (115 acres) of agricultural land for high-speed rail improvements. Of these 47 hectares (115 acres), 45 hectares (112 acres) of land is in row crops, and one hectare (three acres) are pasture. This compares to the IC/UP and Rock Island District alignments, which will require 31 hectares (76 acres) of agricultural land, of which 30 hectares (74 acres) are active row crops and one hectare (two acres) are pasture. Although the Rock Island District and IC/UP alignments differ in the total amount of land that will be converted to railroad improvements, the direct conversion of agricultural land is the same. This is because land north of Joliet that would be affected by either of these alternatives is already developed with non-agricultural uses. The larger impacts associated with the Norfolk Southern alignment are due to the fact that this alignment includes right-of-way acquisition for eight kilometers (five miles) of freight siding in areas of rural Kankakee County that are actively farmed.

Table 5.2-1
COMPARISON OF HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS
AGRICULTURAL IMPACTS, PRIME AND IMPORTANT FARMLAND AND LAND USE

		FARM UNITS	HECTARES (ACRES) ACQUIRED BY IMPROVEMENT					HECTARES (ACRES) ACQUIRED PRIME AND IMPORTANT FARMLAND				HECTARES (ACRES) ACQUIRED BY LAND USE			
		Number Affected	RR R/W	Frontage Road	Highway Grade Sep.	Stations	Total	Prime	Important	Neither	Total	Row Crops	Pasture	Other	Total
IC/UP Alignment:															
Segment	**Milepost (Range)**														
IC/UP	0.00-283.70	45	0 (0)	37 (92)	12 (29)	0 (0)	49 (121)	32 (79)	5 (13)	12 (29)	49 (121)	30 (74)	1 (2)	18 (45)	49 (121)
Total, IC/UP Alignment:		**45**	**0 (0)**	**37 (92)**	**12 (29)**	**0 (0)**	**49 (121)**	**32 (79)**	**5 (13)**	**12 (29)**	**49 (121)**	**30 (74)**	**1 (2)**	**18 (45)**	**49 (121)**
Norfolk Southern Alignment:															
Segment	**Milepost (Range)**														
IC Mainline	0.00-55.30	4	0 (0)	3 (7)	0 (0)	0 (0)	3 (7)	3 (7)	0 (0)	0 (0)	3 (7)	2 (4)	0 (0)	1 (3)	3 (7)
NS	101.00-130.30	28	15 (38)	6 (14)	2 (5)	1 (3)	24 (60)	22 (54)	2 (4)	1 (2)	24 (60)	16 (40)	0 (1)	8 (19)	24 (60)
UP	72.85-283.70	41	0 (0)	33 (81)	3 (8)	0 (0)	36 (89)	30 (73)	5 (13)	1 (3)	36 (89)	28 (68)	1 (2)	8 (19)	36 (89)
Total, NS Alignment:		**73**	**15 (38)**	**41 (102)**	**5 (13)**	**1 (3)**	**63 (156)**	**54 (134)**	**7 (17)**	**2 (5)**	**63 (156)**	**45 (112)**	**1 (3)**	**17 (41)**	**63 (156)**
Rock Island Alignment:															
Segment	**Milepost (Range)**														
Rock Island	0.00-40.10	0	0 (0)	0 (0)	0 (0)	1 (2)	1 (2)	0 (0)	0 (0)	1 (2)	1 (2)	0 (0)	0 (0)	1 (2)	1 (2)
UP	37.50-283.70	45	0 (0)	35 (87)	3 (8)	0 (0)	38 (95)	32 (79)	5 (13)	1 (3)	38 (95)	30 (74)	1 (2)	8 (19)	38 (95)
Total, Rock Island Alignment:		**45**	**0 (0)**	**35 (87)**	**3 (8)**	**1 (2)**	**39 (97)**	**32 (79)**	**5 (13)**	**2 (5)**	**39 (97)**	**30 (74)**	**1 (2)**	**9 (21)**	**39 (97)**

Source: Planning Resources Inc., August 1999.

5.2.2 Prime and Important Farmlands

The USDA divides farmland into four principal categories: prime farmland; unique farmland, other than prime; additional farmland of statewide importance; and additional farmland of local importance. Unique farmland and additional farmland of local importance are not present within the project area (Natural Resource Conservation Service, 1996). Therefore, these soils are not discussed in this report.

The USDA defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. It may exist as cropland, pastureland, rangeland, forest land, or other land, but is not designated in urbanized areas or in bodies of water. Prime farmland produces the highest yields when treated and managed according to acceptable farming methods. Additional farmland of statewide importance is defined by the USDA as land, other than prime farmland, that is valuable for the production of food, feed, forage, fiber and oilseed crops.

The construction of the Norfolk Southern alignment will require the most prime farmland (54 hectares/134 acres), while the IC/UP and Rock Island District alignments will take the least, 32 hectares (79 acres) (see Table 5.2-1). The number of hectares (acres) of additional farmland of statewide importance is similar for all alternatives and is five hectares (13 acres) with the IC/UP and Rock Island District alignments and seven hectares (17 acres) with the Norfolk Southern alignment. Not all of the prime farmland or farmland of statewide importance is in agricultural use. (See row crops and pasture totals in Table 5.2-1).

5.2.3 Soils Capability Grouping

The soil capability grouping adopted by the USDA shows the suitability of soils for most kind of field crops. According to the USDA, soils are grouped according to their limitations when used for field crops, the risk of damage when they are used, and the way they respond to treatment. Eight capability classes are used to describe the general suitability of soils for most kinds of field crops. These capability classes are listed below:

- Class I soils have few limitations that restrict their use;
- Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices;
- Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both;
- Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both;
- Class V soils are subject to little or no erosion but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife habitat;
- Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat;

- Class VII soils have very severe limitations that make them unsuited to cultivation and restrict their use largely to pasture or range, woodland, or wildlife habitat; and

- Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife habitat, water supply, or aesthetic purposes.

Table 5.2-2 presents a summary of agricultural land required for the HSR alignments by soils capability classes.

Table 5.2-2
AGRICULTURAL LAND REQUIRED FOR HIGH-SPEED RAIL ALIGNMENTS
BY LAND CAPABILITY CLASSES
hectares (acres)

Soil Capability Classification	ALIGNMENT		
	IC/UP	Norfolk Southern	Rock Island
I	6.9 (17)	11.3 (28)	6.9 (17)
II	19.8 (49)	28.0 (69)	19.8 (49)
III	3.2 (8)	6.1 (15)	3.2 (8)
IV	0.4 (1)	0.8 (2)	0.4 (1)
V	0.0 (0)	0.0 (0)	0.0 (0)
VI	0.0 (0)	0.0 (0)	0.0 (0)
VII	0.4 (1)	0.4 (1)	0.4 (1)
VIII	0.0 (0)	0.0 (0)	0.0 (0)
Total	**30.7 (76)**	**46.6 (115)**	**30.7 (76)**

Source: United States Department of Agriculture, Soil Conservation Service. Champaign, Illinois. "Prime Farmlands Important Farmlands." September 1, 1991.

Soils within the project area vary from Class I to Class VIII. Normally, prime and statewide important soils are classified in one of the first three categories. All alignments will impact Class I, II and III soils predominantly. The Norfolk Southern alignment will affect 45 hectares (112 acres) of soils classified as I, II or III. This compares to the IC/UP and Rock Island District alignments, which will convert 30 hectares (74 acres) of Class I, II or III soils to non-farm uses.

5.2.4 Illinois Agricultural Land Evaluation and Site Assessment System

The Illinois Department of Agriculture uses the Land Evaluation and Site Assessment (LESA) system to assess overall impacts to agriculture caused by state and federal projects. The LESA system consists of two parts — land evaluation and site assessment:

- The land evaluation system is used to rate the agricultural productivity of farmland, as indicated by soils information. The Natural Resource Conservation Service determines and provides this information on U.S. Department of Agriculture Form AD-1006, which is derived from the Federal Farmland Protection Policy Act (7 USC 4201, *et seq*.); and

- The site assessment system considers all other factors relevant to agricultural concerns, such as compatibility of a proposed improvement with agricultural operations, benefits to agriculture, and compatibility with local comprehensive land use plans.

Coordination with the Natural Resource Conservation Service was initiated in February of 1997. The U.S. Department of Agriculture Form AD-1006 was completed by the State of Illinois Agricultural Department and the U.S. Department of Agriculture, Natural Resource Conservation Service. Individual scores for each alternative alignment are presented in Appendix A-3 of this Draft Environmental Impact Statement.

5.2.5 Severed Farm Units

A farm unit is defined as one or more parcels of land that are farmed as a single operation. It is farmed under one management, although it may be under multiple ownership. A severed farm operation is an operation in which the farmland is bisected either laterally or diagonally by proposed railroad right-of-way or highway grade separations, thereby dividing a parcel of land into two or more individual plots. The limits of farm properties were obtained from tract maps provided by the Will County Tax Assessor's Office and plat maps for each of the 12 counties located in the project corridor.

Severed farm parcels are summarized in Table 5.2-3. One farm parcel, along the Norfolk Southern alignment, will be severed in the project area, where additional right-of-way is required to connect the Norfolk Southern with the Union Pacific.

5.2.6 Severance Management Zones

Severance management zones are those areas of a farm, which, after being diagonally intersected by a proposed improvement (such as a frontage/service road, highway grade separations, or new railroad right-of-way), are adversely affected by the resulting triangular shape. These zones often cause problems for continued farming. The resulting triangular design makes it difficult to turn a tractor and farm implements without damaging or removing plants or causing the misapplication of farm chemicals. This often results in production loss. When the operational disruption caused by diagonal severance is substantial, or when the slope of the land allows planting in one direction only, a farmer may be forced to change from row crops to pasture. This may have an adverse economic impact.

For the purpose of this analysis, severance management zones have been defined as two or more hectares (five or more acres) in size. It is assumed that farming could be continued on parcels of two hectares or more. Fields less than two hectares (five acres) in area have been identified as uneconomic remnants (see Section 5.2.7, below). No severance management zones will result from any of the high-speed rail alternative alignments.

Table 5.2-3
COMPARISON OF HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS
AGRICULTURAL IMPACTS, EFFECT ON FARM UNITS

		FARM UNITS	HECTARES (ACRES) ACQUIRED BY IMPROVEMENT					OPERATIONAL EFFECTS ON FARM UNITS					
		Number Affected	RR R/W	Frontage Road	Highway Grade Sep.	Stations	Total	Displaced Ag. Res.	Displaced Ag. Bldgs.	Parcel Severance	Severance Mgt. Zones	Uneconomic Remnants	Adverse Travel
IC/UP Alignment:													
Segment	**Milepost (Range)**												
IC/UP	0.00-283.70	45	0 (0)	37 (92)	12 (29)	0 (0)	49 (121)	0	0	0	0	0	26 (16)
Total, IC/UP Alignment:		**45**	**0 (0)**	**37 (92)**	**12 (29)**	**0 (0)**	**49 (121)**	**0**	**0**	**0**	**0**	**0**	**26 (16)**
Norfolk Southern Alignment:													
Segment	**Milepost (Range)**												
IC Mainline	0.00-55.30	4	0 (0)	3 (7)	0 (0)	0 (0)	3 (7)	0	0	0	0	0	2 (1)
NS	101.00-130.30	28	15 (38)	6 (14)	2 (5)	1 (3)	24 (60)	0	0	1	0	1	16 (10)
UP	72.85-283.70	41	0 (0)	33 (81)	3 (8)	0 (0)	36 (89)	0	0	0	0	0	24 (15)
Total, NS Alignment:		**73**	**15 (38)**	**41 (102)**	**5 (13)**	**1 (3)**	**63 (156)**	**0**	**0**	**1**	**0**	**1**	**42 (26)**
Rock Island Alignment:													
Segment	**Milepost (Range)**												
Rock Island	0.00-40.10	0	0 (0)	0 (0)	0 (0)	1 (2)	1 (2)	0	0	0	0	0	0 (0)
UP	37.50-283.70	45	0 (0)	35 (87)	3 (8)	0 (0)	38 (95)	0	0	0	0	0	26 (16)
Total, Rock Island Alignment:		**45**	**0 (0)**	**35 (87)**	**3 (8)**	**1 (2)**	**39 (97)**	**0**	**0**	**0**	**0**	**0**	**26 (16)**

Source: Planning Resources Inc., August 1999.

5.2.7 Uneconomic Remnants

Uneconomic remnants have been defined as severed parcels that are less than two hectares (five acres) in size that will be created from the construction of new railroad right-of-way or grade separations. Uneconomic remnants also will include any parcel of real property in which the owner is left with an interest after the partial acquisition of the owner's property, and which the acquiring agency determines has little or no value or utility to the owner, and the acquiring agency will offer to acquire any such identified uneconomic remnants. These remnants will be considered a "taking", due to the economic constraints that will be placed on the land and the owner/operator for continued farming.

One uneconomic remnant will be created under the Norfolk Southern alignment. This remnant is the result of new right-of-way planned to connect the Norfolk Southern with the Union Pacific. No uneconomic remnants will be created from the IC/UP or Rock Island District alignments since neither of these alternatives includes frontage/service roads, new railroad right-of-way, or highway grade separations that sever farmland.

5.2.8 Landlocked Parcels

A landlocked parcels is a portion of land that has been isolated by the proposed construction of improvement associated with a project alternative, thereby rendering it inaccessible by public road, existing or proposed easements, proposed frontage/service roads, or relocated driveways. The Illinois Department of Transportation intends to maintain access to all farm properties affected by a project alternative. Therefore, no property will be landlocked by any of the project alternative alignments. This includes properties severed and parcels affected by proposed grade-separated crossings.

5.2.9 Adverse Travel

Adverse travel is the measurement of the additional kilometers (miles) traveled by a farmer to reach a severed or otherwise affected parcel of land created by the new railroad right-of-way or the construction of a highway grade separation. Grade crossing consolidations occur with all of the proposed alternative alignments. The closing of a private farm or public road crossing can prevent a farmer from accessing an operation by the customary route. The frontage/service roads proposed as part of this project are planned to maintain access to all affected properties.

The number of kilometers (miles) of adverse travel associated with each alternative is presented on Table 5.2-3. Adverse travel has been calculated by determining the shortest route necessary to travel from the edge of the field of one severed parcel via a public road, existing easement or frontage/service road, to the field of a second severed parcel under the same ownership. This distance was then doubled to account for one round trip. Existing kilometers (miles) traveled to currently access the same field is also calculated, by round trip, and subtracted from the larger figure. The resulting number is the measure of adverse kilometers (miles) traveled.

The maximum number of kilometers (miles) traveled will result from the construction of the Norfolk Southern alignment. If implemented, this alignment will add a total of 42 kilometers (26 miles) to normal daily traveled routes of affected farmers. This compares to the 26 kilometers (16 miles) of adverse travel that would be incurred if either the IC/UP or Rock Island District alignments were implemented. The estimated number of adverse kilometers (miles) traveled by the owner/operator may change with the final engineering of the railroad right-of-way, grade separations and freight sidings.

5.2.10 Agricultural Zoning

Five of the 12 counties in the corridor currently have some form of agricultural zoning. These counties include Will, McLean, Logan, Sangamon, and Madison Counties. Will County has adopted agricultural zoning that includes a four-hectare (10-acre) minimum lot size, designed to protect properties from converting to non-agricultural uses. McLean County requires all non-agricultural uses in an agricultural district to be processed as special uses, and Logan County has established a minimum two-hectare (five-acre) lot size in the agricultural district as a method of discouraging non-agricultural uses. Agriculture is an important economic component of all of these counties (Section 2.1.2, Agriculture and Prime Farmland).

The Norfolk Southern alignment has the greatest impact on properties zoned for agricultural use of the three alternative alignments under consideration. This is because this alternative will convert the most land for new railroad right-of-way (including freight sidings and the proposed connection with the Union Pacific railroad), frontage/service roads and grade separations. Also, it is the only alternative that severs a farm parcel (see Tables 5.2-1 and Table 5.2-3). A portion of this alignment extends between Dwight and Kankakee through Kankakee and Livingston Counties. It is not expected that either the Norfolk Southern alignment or any of the other HSR alternative alignments will induce development that will convert land planned and zoned for agricultural uses.

5.2.11 Designated Agricultural Protection Areas

The Agricultural Areas Conservation and Protection Act was enacted in 1980. This act allows for parcels of land greater than 142 hectares (350 acres) in size to be designated as agricultural protection areas. These agricultural protection areas were established to conserve, protect and encourage the development and improvement of agricultural lands for the production of food and other agriculture products.

Contact was made with each of the 12 counties in the high-speed rail corridor to request information related to the location of agricultural protection areas. No known designated agricultural protection areas will be affected by any of the proposed alignments.

5.2.12 Agricultural Income Loss

An estimate of the loss of agricultural income, by alternative, is presented in Table 5.2-4. Average agricultural income per acre values were derived by dividing the total number of farm acres in each county into the total agricultural receipts from each county presented in Section 2.1.2, Agriculture and Prime Farmland. The resulting figure gives an approximate annual income estimate for a hectare (acre) of land in each county. The income loss figures generated for each of the alignments were obtained by multiplying the number of acres that would be acquired within each county by the average per acre income value. Only that land currently used for row crops or pastureland were included in this analysis.

Table 5.2-4
ESTIMATED ANNUAL AGRICULTURAL INCOME LOSS

ALIGNMENT	HECTARES (ACRES) CONVERTED	ESTIMATED LOSS
IC/UP:	31 (76)	$25,683
Norfolk Southern:	47 (115)	$40,377
Rock Island District:	31 (76)	$25,683

Source: Planning Resources Inc., August 1999.

The Norfolk Southern alignment has the largest number of agricultural hectares (acres) converted for project improvements and, therefore, the greatest income loss from farmland conversion. Most of the hectares (acres) that will be taken out of production are associated with service/frontage roads and freight sidings. An estimated $40,377 will be lost annually due to implementation of this alignment under the HSR alternative, based on cash receipts reported for 1995. Both the IC/UP and Rock Island District alignments have less agricultural land that would be converted than the Norfolk Southern alignment. Therefore, their estimated annual agricultural income loss is lower, at $25,683.

5.2.13 Mitigation

Agriculture is a predominant land use within the project area, south of the urbanized Chicago metropolitan area. The majority of the hectares (acres) that will be acquired for the IC/UP, Norfolk Southern and Rock Island District alignments result from the planned construction of frontage/service roads, proposed to maintain access to a farm unit or parcel affected by a proposed crossing closure. Planned grade separations also result in the conversion of farmland to transportation uses (see Tables 5.2-1 and 5.2-3). The number of these separations has been kept to a minimum, to lessen impacts on surrounding properties. Also, a freight siding along the Norfolk Southern alignment and station area improvements proposed result in the direct conversion of agricultural land to non-farm land uses. The following management and design practices have been incorporated into this project to help minimize disruptions to agricultural activities, as well as minimizing adverse effects to prime and important farmlands:

- Project alignments primarily use existing railroad right-of-way. Agricultural land that would be acquired for project alternatives is primarily limited to grade separations, service/frontage roads, freight sidings, and station areas.

- Only the Norfolk Southern alignment would sever agricultural land. The one farm unit potentially severed by the Norfolk Southern alignment is the result of new right-of-way planned to connect the Norfolk Southern with the Union Pacific.

- Constructing frontage/service roads, as planned with each of the HSR alternatives, ensures that access to farm properties affected by crossing consolidation or closure is maintained.

- Frontage/service roads and grade-separated crossings have been proposed in areas where crossing consolidation will occur, to minimize the number of additional distance traveled for the movement of agricultural products to markets. The total additional vehicle kilometers (miles) that might result from the HSR alternative alignments was reviewed with more than 1,250 local officials at a series of 14 open houses held throughout the corridor. Proposals for crossing consolidation were subsequently refined, based on input received during these meetings, to ensure that impacts to the farming community were mitigated to the maximum extent possible.

- The amount of agricultural land affected by high-speed rail alignments has also been kept to a minimum by proposing frontage/service roads within 15-meter (50-foot) wide rights-of-way adjacent to the existing railroad right-of-way.

- No farm residences or agricultural buildings will be affected by any of the high-speed rail alignments. This is because alternatives are located on existing railroad right-of-way.

5.2.14 Irreversible and Irretrievable Commitment of Resources

Hectares (acres) converted to new railroad right-of-way or highway grade separations as part of this project will be irretrievably lost. Similarly, the one parcel that has been identified as an uneconomic remnant, due to the parcel severance associated with the Norfolk Southern alignment, will be lost because its resulting size and shape makes continued farming impractical.

New access across railroad right-of-way could be provided in the future to serve new development via a grade separation. If this occurs, frontage/service roads created to provide access between an individual farm unit and a previously closed grade crossing could be converted back to agricultural uses, and farmed.

5.3 SOCIO-ECONOMIC AND COMMUNITY IMPACTS

5.3.1 Grade Crossing Impacts

Increases in train speeds along high-speed rail corridors warrant an increase in the level of grade crossing warning or protection. Yet, increases in train speeds are not projected over the entire corridor due to the long deceleration and acceleration requirements at stations or due to alignment restrictions. Nonetheless, consistent with FRA guidelines and good engineering practice, a number of crossings should be eliminated; the remaining ones should be warned or protected as appropriate. Whether a crossing is eliminated or improved is generally based on the number and speed of trains, vehicular usage and nearby availability of alternate crossings that are adequate or can be improved to meet projected needs. The evaluations and recommendations recognize that the type of traffic as well as the volume and speed influence the ability of a crossing to safely handle the shift.

The treatment of highway-railroad at-grade crossings is a major impact to local socio-economic and community factors. The recommendations for crossing treatments are, therefore, a primary concern to the local communities within the Chicago - St. Louis corridor. All of the at-grade crossings in the project area were reevaluated as part of the preparation for this Environmental Impact Statement (EIS). The recommendations developed supersede those included in the Chicago - St. Louis HSR Study, Grade Crossing Safety Analysis, prepared for IDOT in 1993 and 1994. A summary of the current at-grade crossing recommendations is presented in Section 3.1.2.1.

Information on ambulance, police, fire and school district service areas and routes; hospitals; regional grain elevators; and major agri-businesses was considered when the grade crossing treatment recommendations were developed. Additionally, field reviews of the crossings, evaluating land use, recent developments, and wetlands, were conducted to provide additional background information about each crossing that was used to determine the appropriate treatment recommendation. Finally, operational adjustments, such as limiting the maximum speed to 110 mph (180 kph) through much of the corridor, were made to allow more crossings to remain open.

For each grade crossing, a summary sheet was prepared summarizing the factors and conditions that were the basis for the treatment recommendations. Each sheet contained information on: milepost (MP); county; township; incorporated versus unincorporated; the railroad that owns the trackway; the alignment alternative; vertical alignment; public or private ownership; land use; train speed, both existing and proposed; existing warning devices; highway speed limit; average daily traffic; changes projected in vehicular volume; adverse travel of closure if proposed; total additional vehicle miles of travel if a crossing is proposed for closure; crossing treatment recommendation from the 1994 study; and the current crossing treatment recommendation developed for this project as documented in this EIS. An explanation was given for each recommendation and where closure was proposed, the alternative crossing was identified.

Over 1,250 local officials were invited to review and comment on the draft grade crossing treatment recommendations at a series of 14 open houses held throughout the length of the corridor. The recommendations were refined as a result of input from these workshops, attended by 260 persons representing the majority of the communities and agencies which were invited. Later, additional modifications to the grade crossing treatment recommendations were made so that potential impacts to cultural resources, wetlands, and other natural areas were minimized. The recommendation for each of the crossings contained in Table 3.1-6 in Section 3 are a result of this process. Additional refinements may be made following the official public hearings. Copies of each crossing evaluation and details on the process and recommendations are contained in the High Speed Rail Corridor: Rail Crossing Analysis. Specific recommendations for each crossing are provided in Appendix B. A summary of the recommended treatments by alternative alignment is contained in Table 3.1-6; Table 3.1-7 provides a list of the crossings where closure is recommended with the provision of a frontage/service road.

Potential impacts to residents' access have been minimized through the methods described in this section and in Appendix B. Sixty-eight to 74 vehicular crossings are proposed for closure as part of the HSR alternative. Of these, 33 to 38 are public crossings. Access is maintained to all properties, and recommendations for closure primarily focused on redundant crossings. Crossings proposed for closure are either low volume roadways or private crossings. The Illinois Commerce Commission (ICC) regulation governing the maximum allowable adverse travel was adhered to and was one of the key criterion used for evaluation of potential closures. This criteria specifies 6.5 kilometers (four miles) of adverse travel as maximum allowable in unincorporated areas and 1.21 kilometers (0.75 miles) as the maximum in incorporated areas. The travel distance is measured as the shortest, usable path from one side of the closed crossing to the other. Average adverse travel as a result of the proposed at-grade crossing closures on the alternative alignments ranges from 1.39 kilometers (0.86 miles) on the IC/UP alignment to 1.59 kilometers (0.99 miles) on the Norfolk Southern alignment.

5.3.2 Displacement and Relocation

5.3.2.1 Displacements

No-Build Alternative: Under the No-Build alternative, no displacements will occur.

High-Speed Rail Alternative: For the HSR alternative, displacements will result from three proposed grade separations and the Norfolk Southern/Union Pacific track connection in Dwight. The displacements for each HSR alignment are listed in Table 5.3-1.

Table 5.3-1
STRUCTURE DISPLACEMENTS BY PROPOSED HIGH-SPEED RAIL ALTERNATIVE ALIGNMENT

Alignment Railroad (MP)	Residential	Commercial	Institutional	Other	Total Displacements
IC/UP					
IC Joliet Line (MP 29.00)	11	1	1	0	13
UP (MP 272.70)	0	0	0	1	1
Total	**11**	**1**	**1**	**1**	**14**
Norfolk Southern					
NS (MP 106.59)	3	1	0	2	6
NS (MP 130.10)	0	0	0	3	3
UP (MP 272.70)	0	0	0	1	1
Total	**3**	**1**	**0**	**6**	**10**
Rock Island District					
UP (MP 272.70)	0	0	0	1	1
Total	**0**	**0**	**0**	**1**	**1**

Note: For Special Waste Assessment Screening Process, both "other" structures at Norfolk Southern MP 106.59 are benign. Preliminary Environmental Site Assessments were conducted at MP 29.00, MP 130.10, and MP 272.70. (See Section 2.14, Special Waste.)

Agricultural. No displacements of farm residences and other agricultural buildings are anticipated from implementation of any of the HSR alignments.

Residential. Eleven single-family residences will be displaced with the IC/UP alignment. All 11 of the displacements are located within the potential impact area of the proposed grade separation at Romeoville Road/135th Street (MP 29.00). The homes appear to be owner-occupied, with two to four bedrooms and one to two bathrooms; estimated market value of these homes range from $100,000 to $150,000.

Along the Norfolk Southern alignment, three single-family residences will be displaced. These displacements are located within the potential impact area of the proposed grade separation at Illinois Route 17 (MP 106.59). These homes appear to be owner occupied, with two or three bedrooms and one bathroom and prices ranging from $75,000 to $125,000.

The Rock Island District alignment will not displace any residences.

Commercial. The IC/UP alignment will displace one business at the proposed grade separation at 135th

Street/Romeoville Road (MP 29.00). The business consists of a gas station with a “mini-mart” and employs approximately eight to 10 people.

One business — a small general store — will be displaced along the Norfolk Southern alignment at MP 106.59, where a grade separation is proposed at the Illinois Route 17 crossing. The store employs approximately six to eight people.

The Rock Island District alignment will not displace any businesses.

Institutional. The High Road Bible Church is located within the potential impact area of the proposed grade separation at 135th Street/Romeoville Road (MP 29.00) and will be displaced by the IC/UP alignment.

Neither the Norfolk Southern nor the Rock Island District alignments will displace any institutional structures.

Other Displacements. Several other outbuildings will be displaced in the project area under the HSR alternative. One of these structures will be displaced at the proposed grade separation at Pontoon Road (MP 272.70) under all three alignments. This structure is located on property that includes a gas station. Five other outbuildings will be displaced along the Norfolk Southern alignment at the proposed grade separation at Illinois Route 17 (MP 106.59) and at the proposed Norfolk Southern/Union Pacific connection in Dwight (MP 103.10). The two structures at MP 106.59 are concrete block storage buildings on residential property. The three structures at MP 103.10 are storage buildings affiliated with two businesses — Crop Production Services and Hydrochem Industrial Service.

5.3.2.2 Mitigation

The "Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended", applies to all federal or federally assisted activities that involve the acquisition of real property or the displacement of persons or businesses. Just compensation is provided for each property that will be acquired as a result of this project. Both the United States and Illinois Constitutions require this. The courts have defined "just compensation" as monetary payment that is equivalent to the "fair market" value of the property. Fair market value has been defined as the highest price estimated in terms of money that the property will bring, if exposed to sale on the open market, with a reasonable time allowed to find a buyer, buying with the knowledge of all of the uses to which it is adapted, and for which it is capable of being used. Mitigation of relocation impacts or displaced structures is usually in the form of financial remuneration or compensation for property loss and relocation expenses, as outlined in the "Uniform Relocation and Real Property Acquisition Act, as Amended." The Bureau of Land Acquisition of the Illinois Department of Transportation will determine the availability and cost of relocation sites and planned remuneration. Additional or unusual circumstances may warrant other mitigation measures on a case-by-case basis, although none are anticipated for this project.

Relocation of businesses, residences, and the High Road Bible Church should be possible in the same general vicinity where displacements will occur. There is no shortage of replacement housing in these areas. Property remaining after acquisition and construction of the proposed grade separation at MP 29.00 could be used to relocate the business and church displaced in this area. Additionally, there are vacant parcels in the area where relocation will occur. Relocation services will be available to all individuals affected by project displacements, without discrimination. No difficulties in successfully relocating any displaced families, businesses, or the church are anticipated.

5.3.3 Economic Impacts

The expenditure of funds for transportation infrastructure has both direct and indirect economic impacts. The direct impact can be measured by the number of jobs created, both in the production of materials and equipment used in the project and in the actual on-site construction activities. Development of high-speed rail between Chicago and St. Louis will require the employment of persons to upgrade the road bed, install signal and safety devices, build frontage/service roads, improve grade crossings, or build bridges to replace grade crossings. Additional jobs will be created in firms that produce the signal and safety devices, steel rails, and the rolling stock for the route. The wages that these individuals receive are then recycled throughout the economy as the new workers buy houses, furniture, groceries, and clothes. These expenditures, in turn, create new jobs, producing a multiplier effect on the economy. The geographic distribution of that impact will depend upon the location of firms supplying the labor and materials needed on the project. A similar, two-tiered set of impacts is generated by post-construction operating expenditures. This section on economic impacts discusses the broader employment impacts of the project and then addresses potential changes in local economic activity.

5.3.3.1 Employment Impacts of Construction and Operations

No-Build Alternative: The No-Build alternative will not result in any construction-related employment impacts. Also, no changes in operations-related employment is expected.

High-Speed Rail Alternative: The economic impacts of the HSR alternative will be dispersed throughout Illinois and, to some extent, throughout the Midwest. IDOT retained the Regional Economics Applications Laboratory (REAL) of the University of Illinois to develop estimates of the employment that will be generated by the construction and operation of the system. Using IDOT cost estimates as inputs into an Illinois-specific regional econometric model, REAL estimated that total direct and indirect employment will peak at about 2,900 in the third year of construction for the IC/UP alignment. The Norfolk Southern alignment is estimated to create an additional 3,240 jobs during the same year. If this alignment were to serve a new SSA, the peak-year construction employment is estimated to reach 4,230. Employment increases during the construction period are shown in Table 5.3-2. Employment projections were not developed for the Rock Island District because it was not being considered as an alternative alignment at the time that the REAL study was conducted. For the purposes of evaluation, it is assumed that the employment impacts associated with the Rock Island District alignment will be the same as for the IC/UP alignment.

Table 5.3-2
TOTAL EMPLOYMENT INCREASE DURING HIGH-SPEED RAIL CONSTRUCTION

Construction Year	Alignment		
	IC/UP or Rock Island	Norfolk Southern without SSA Airport	Norfolk Southern with SSA Airport
1	1,780	2,100	2,940
2	2,390	2,720	3,670
3	2,900	3,240	4,230

Source: Regional Economics Applications Laboratory, Economic Impacts of the Chicago-St. Louis High Speed Rail Line: Evaluation and Sensitivity, Report 1, 1996.

The multiplier effect in the peak employment year during construction is 1.90 for all routes. Thus each dollar spent during construction generates an additional $0.90 in system-wide economic activity. The multiplier impact is greater during years of operation because the costs are more labor intensive; a smaller portion of the costs are spent on materials and supplies. However, the absolute impact on employment is much smaller because operational costs are a fraction of construction costs. The REAL model is year specific and thus can accommodate a variety of fluctuations in economic activity. For seven years of operation (years 4 through 10 of the project), the multiplier varies between 2.23 and 2.28 but averages about 2.26. Thus, it is projected that each dollar spent on operations will generate another $1.26 in system-wide economic activity. As shown in Table 5.3-3, operation of the system over the IC/UP alignment will result in an increase of approximately 800 new jobs over current employment levels. The Norfolk Southern alignment will increase total employment by about 830, but the increase in employment will exceed 1,100 with trains operating on these alignments with service to a new airport. As with construction-related employment, projected operation-related employment increases for the Rock Island District alignment are assumed to be the same as for the IC/UP alignment.

The employment projections were originally run for years 1996 through 2005. The projections, if redone for another ten-year period, might vary slightly from year to year but will be reasonably similar overall. However, the projections probably represent an upper limit estimate because of the assumption used in the model that all initial expenditures will occur in Illinois. Given the small number of producers of signals, rails, and rolling stock, this is probably an unrealistic assumption. It is quite likely that some equipment will be supplied by firms outside of Illinois.

Table 5.3-3
TOTAL EMPLOYMENT INCREASE DURING HIGH-SPEED RAIL OPERATION

Operation Year	Alignment		
	IC/UP or Rock Island	Norfolk Southern without SSA Airport	Norfolk Southern with SSA Airport
1	810	840	840
2	800	830	830
3	800	830	830
4	790	820	1,120
5	790	830	1,130
6	790	820	1,120
7	780	820	1,110

Source: Regional Economics Applications Laboratory, Economic Impacts of the Chicago-St. Louis High Speed Rail Line: Evaluation and Sensitivity, Report 1, 1996.

The impacts were only run for seven years of operations but the operations will continue, and possibly be expanded, in the future. The impacts from operations will gradually increase as additional expenditures are required to maintain the tracks and rolling stock in top condition.

5.3.3.2 Changes in Regional and Local Economic Activity

No-Build Alternative: The No-Build alternative is not expected to result in any changes in regional and local economic activity.

High-Speed Rail Alternative: The employment and economic impacts discussed above will occur somewhere in Illinois. The precise location of those impacts, especially the construction-period impacts, will depend on which companies receive contracts to do the work. It is estimated that a high proportion of the new employment will occur in the six-county Chicago metropolitan area in the northeast section of the state. The concentration of major engineering, construction, and manufacturing firms in this section of the state makes it highly probable that this region will benefit substantially, both directly and indirectly, from construction period expenditures. During the actual construction period, some of the secondary impacts will be felt in communities along the route as construction crews spend money in local hotels, restaurants, and shops. Some firms outside of the Chicago area are also likely to receive contracts and/or subcontracts that will help spread the overall impacts throughout the state.

The impacts of expenditures from operations will probably be more concentrated, with the majority of new jobs created in communities that will primarily be served by the system: Chicago, Joliet or Peotone/Kankakee, Bloomington, Springfield, Alton, and St. Louis. Ticket agents and other railroad personnel will be located in

these communities, and the secondary impacts of their employment will be spread throughout the counties in which the communities are located. Again, however, the majority of the new employment is likely to be located in the Chicago area. Because Chicago is likely to be the focus for several high-speed rail lines radiating throughout the Midwest, it is likely that the administrative offices for the Chicago - St. Louis line will be in Chicago. Similarly, although the yards and repair facilities for the line could be located almost anywhere along the line, the fact that there are existing locations in the Chicago/Joliet area that could accommodate maintenance facilities for all lines entering the city makes it likely that the major maintenance facilities will be located in northeastern Illinois.

In addition to the impacts from direct expenditures on system construction and operation, the HSR alternative will increase the flow of travelers between cities along the route and thus enhance economic activity in those communities with stations on the line. The majority of the projected ridership will involve mode transfers and is thus travel that will have occurred whether or not the high-speed rail were in place. However, induced ridership could account for 5 percent to 15 percent of total riders, and a high proportion (possibly as much as 80 percent) of the induced ridership is likely to be pleasure oriented. For pleasure travelers, the train ride itself becomes part of the experience of a weekend shopping trip to Chicago or a short vacation that includes a tour of historic sites in Springfield associated with Abraham Lincoln. Assuming ridership of at least one million passengers and an induced ridership of 100,000 (10 percent of total), there is considerable potential for additional economic activity in communities along the route that is not directly related to expenditures from the railroad operations. In Chicago, the average visitor stays two days and spends about $200 per day. Applying these averages to the induced ridership numbers, there is a potential for up to $20 million in new economic activity in communities along the route. This assumes that each “trip” on the train is actually one-half of a round trip. Thus, 100,000 person days times $200 per day equals $20 million in new economic activity.

The impacts from induced travel will be heavily concentrated in the end-point cities, Chicago and St. Louis. Springfield, with its historic attractions and the State Fair, will also benefit. The other communities with stations will probably experience comparatively small increases in economic activity from induced-ridership expenditures.

There may also be some very localized negative impacts resulting from the implementation of high-speed rail service between Chicago and St. Louis. Several small communities that are currently served by Amtrak may lose passenger rail service. These communities are Summit, Dwight, Pontiac, Lincoln, and Carlinville. Traffic through these stations is very light and the impacts will likely be a reduction in convenience rather than true economic loss. Since there are no ticket agents on duty at these stations, no jobs will be lost as a result of loss of service.

Right-of-way will be required for each of the three HSR alternative alignments. The alignments will require 65 hectares (160 acres) or less of additional right-of-way, with the IC/UP alignment requiring 49 hectares (121 acres); the Norfolk Southern alignment requiring 63 hectares (156 acres); and the Rock Island District alignment requiring 39 hectares (97 acres). Loss of property tax revenue due to conversion of property to transportation use was estimated for the three alignments. Loss of approximately $58,000 (1997 dollars) annually is estimated for the IC/UP alignment. The estimated loss for the Norfolk Southern alignment is $17,000 per year. The Rock Island District alignment is estimated as having the least impact on tax revenue, resulting in a loss of $6,000 annually. Most of these losses will occur in Cook, Will, and Kankakee Counties.

Mitigation for partial loss of property of secondary impact related to access will be discussed with each affected property owner to arrive at adequate compensation.

5.3.4 Environmental Justice

Potential disproportionate impacts to low-income and minority populations were evaluated in accordance with Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations". In response to this Executive Order, the project corridor was evaluated to identify the presence of low income and minority residents and the potential impacts to them.

No-Build Alternative: No disproportionately high and adverse human health or environmental effects on minority or low-income populations were identified for the No-Build alternative.

High-Speed Rail Alternative: No disproportionately high and adverse human health or environmental effects on minority or low-income populations were identified for the HSR alternative, regardless of alignment.

Of the activities associated with the HSR alternative, proposed grade crossing closures have the greatest potential to impact minority or low-income populations. A field review was conducted in August of 1999 to evaluate all crossings proposed for closure in regards to community cohesion and environmental justice. In the project area, 85 to 91 crossings are proposed for closure. Of these, 19 to 21 percent (17 to 19 crossings) are pedestrian crossings, with other useable crossings in very close proximity. Of the 68 to 74 vehicular crossings proposed for closure, the majority are in rural areas at either a private farm crossing or a township or county road. Within the villages and towns in the project area, up to one vehicular crossing may be closed with useable crossings located within a block or two. Table 5.3-4 lists the number of crossings proposed for closures in communities where the percentage of the population classified as minority or low-income exceeds the statewide average. (See Table 2.2-7 in Section 2.) Based on the information provided in Table 5.3-4, it was determined that none of the HSR alternative alignments will have disproportionately adverse impacts on minority or low-income populations. One additional vehicular crossing is proposed for closure in a low-income area under the IC/UP and Rock Island District alignments. This crossing is Main Street (MP 61.06) in Braceville, where the low-income population is estimated at 13.3 percent, compared with the 11.6 percent statewide average.

The HSR alternative will not displace any minority or low-income populations.

No noise or vibration impacts were identified for this project. Therefore, no disproportionate noise or vibration impacts to minority or low-income populations will occur.

No disproportionate transportation impacts to the minority or low-income populations identified in the corridor are projected.

Table 5.3-4
PROPOSED CROSSING CLOSURES IN MINORITY OR LOW-INCOME AREAS

Type of Crossing	ALIGNMENT					
	IC/UP		Norfolk Southern		Rock Island District	
	Minority	Low-Income	Minority	Low-Income	Minority	Low-Income
Pedestrian	0	7	0	7	0	7
Vehicular	1	8	1	7	1	8

Source: De Leuw, Cather & Company, February 2000.

5.4 AIR QUALITY

This section describes the air quality analysis conducted for this project evaluating the No-Build and High-Speed Rail alternatives. Based on the analysis conducted, no adverse impacts will occur with either the No-Build or High-Speed Rail alternative.

5.4.1 Conformity

5.4.1.1 Air Quality Impacts from Passenger Rail Service in the Nonattainment/Maintenance Areas

Annual volatile organic compound (VOC) and nitrogen oxide (NO_x) emissions from intercity passenger rail service were estimated for the No-Build and HSR alternatives using the same methodology described in Section 2.4. However, only the fuel that would be consumed in each of the ozone nonattainment and maintenance areas and the resultant emissions was accounted for as part of the conformity analysis. For the No-Build alternative, although it is a continuation of existing Amtrak service, a NO_x emission rate different than the one used for existing conditions was used. Recently adopted U.S. Environmental Protection Agency (USEPA) emission standards for Tier 0 diesel-powered locomotives (manufactured between 1973 and 2001) were compared to those reported in the USEPA's Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources (the EPA manual) for the F40 locomotive. For all pollutants except NO_x, the emission rates for the F40 locomotive were lower than the USEPA standards. So for this and subsequent analyses, the emissions rates from the EPA manual were used for all pollutants other than NO_x. For NO_x, the USEPA emission rate standard was used because the F40 locomotive used for Amtrak service in the Chicago – St. Louis project area will have to comply with this standard. For the HSR alternative, annual emissions were developed for the ozone nonattainment and maintenance areas for the three alternative alignments and for the three different equipment options considered. It was assumed that the HSR locomotives will be subject to the USEPA Tier 1 (locomotives manufactured between 2002 and 2004) emission rate standards.

Tables 5.4-1 and 5.4-2 list the annual VOC and NO_x emissions calculated for the ozone nonattainment and maintenance areas in the project area to assist in determining the net impact of implementation of HSR service. Emission estimates for the HSR alternative are listed in one column (emissions from high-speed rail service). The emissions from Chicago - St. Louis Amtrak service under the No-Build alternative are listed in another column (reductions from other modes – Amtrak) and taken as a credit as part of the conformity analysis.

Table 5.4-1
GENERAL CONFORMITY ANALYSIS OF VOC EMISSIONS IN NONATTAINMENT AND MAINTENANCE AREAS
(tons)

Nonattainment/Maintenance Area Alternative Alignment and Equipment Option	Emissions from High-Speed Rail Service	Reductions from other modes			Additional Vehicle Kilometers (Miles) Traveled	Net Change in Emissions with High-Speed Rail	State General Conformity Threshold
		Amtrak	Bus	Auto			
Chicago Nonattainment Area							
High-Speed Rail Alternative - IC/UP							
F-70/Talgo	5.9	1.5	0.1	3.8	1.5	2.0	25
F-70/4-Car	7.3	1.5	0.1	3.8	1.5	3.4	25
Turbomeca	11.1	1.5	0.1	3.8	1.5	7.2	25
High-Speed Rail Alternative - Norfolk Southern							
F-70/Talgo	4.4	1.5	0.1	3.4	1.0	0.4	25
F-70/4-Car	5.3	1.5	0.1	3.4	1.0	1.3	25
Turbomeca	8.2	1.5	0.1	3.4	1.0	4.2	25
High-Speed Rail Alternative - Rock Island District							
F-70/Talgo	5.2	1.5	0.1	3.8	1.4	1.2	25
F-70/4-Car	6.4	1.5	0.1	3.8	1.4	2.4	25
Turbomeca	9.7	1.5	0.1	3.8	1.4	5.7	25
Jersey County Maintenance Area							
High-Speed Rail Alternative - All Alignments							
F-70/Talgo	0.2	0.1	N/A	N/A	0.2	0.3	100
F-70/4-Car	0.3	0.1	N/A	N/A	0.2	0.4	100
Turbomeca	0.4	0.1	N/A	N/A	0.2	0.5	100
St. Louis Nonattainment Area (Illinois)							
High-Speed Rail Alternative - All Alignments							
F-70/Talgo	3.3	1.1	0.0	2.6	1.3	0.9	100
F-70/4-Car	4.1	1.1	0.0	2.6	1.3	1.7	100
Turbomeca	6.3	1.1	0.0	2.6	1.3	3.9	100
St. Louis Nonattainment Area (Missouri)							
High-Speed Rail Alternative - All Alignments							
F-70/Talgo	0.2	0.1	0.0	0.1	0.0	0.0	100
F-70/4-Car	0.2	0.1	0.0	0.1	0.0	0.0	100
Turbomeca	0.3	0.1	0.0	0.1	0.0	0.1	100

Source: De Leuw, Cather & Company, February 2000.

N/A = Not Applicable

Table 5.4-2
GENERAL CONFORMITY ANALYSIS OF NO_x EMISSIONS IN NONATTAINMENT AND MAINTENANCE AREAS
(tons)

Nonattainment/Maintenance Area Alternative Alignment and Equipment Option	Emissions from High-Speed Rail Service	Reductions from other modes			Additional Vehicle Kilometers (Miles) Traveled	Net Change in Emissions with High-Speed Rail	State General Conformity Threshold
		Amtrak	Bus	Auto			
Chicago Nonattainment Area							
High-Speed Rail Alternative - IC/UP							
F-70/Talgo	83.0	36.7	0.4	9.8	2.2	38.3	N/A
F-70/4-Car	102.9	36.7	0.4	9.8	2.2	58.2	N/A
Turbomeca	156.5	36.7	0.4	9.8	2.2	111.8	N/A
High-Speed Rail Alternative - Norfolk Southern							
F-70/Talgo	62.2	36.7	0.4	8.7	1.5	17.9	N/A
F-70/4-Car	74.6	36.7	0.4	8.7	1.5	30.3	N/A
Turbomeca	115.8	36.7	0.4	8.7	1.5	71.5	N/A
High-Speed Rail Alternative - Rock Island District							
F-70/Talgo	72.8	36.7	0.4	9.8	2.1	28.0	N/A
F-70/4-Car	90.3	36.7	0.4	9.8	2.1	45.5	N/A
Turbomeca	137.2	36.7	0.4	9.8	2.1	92.4	N/A
Jersey County Maintenance Area							
High-Speed Rail Alternative - All Alignments							
F-70/Talgo	3.1	1.3	N/A	N/A	0.2	2.0	100
F-70/4-Car	3.9	1.3	N/A	N/A	0.2	2.8	100
Turbomeca	5.9	1.3	N/A	N/A	0.2	4.8	100
St. Louis Nonattainment Area (Illinois)							
High-Speed Rail Alternative - All Alignments							
F-70/Talgo	47.1	27.5	0.2	6.0	1.7	15.1	100
F-70/4-Car	58.3	27.5	0.2	6.0	1.7	26.3	100
Turbomeca	88.7	27.5	0.2	6.0	1.7	56.7	100
St. Louis Nonattainment Area (Missouri)							
High-Speed Rail Alternative - All Alignments							
F-70/Talgo	2.2	1.3	0.0	0.2	0.0	0.7	100
F-70/4-Car	2.8	1.3	0.0	0.2	0.0	1.3	100
Turbomeca	4.2	1.3	0.0	0.2	0.0	2.7	100

Source: De Leuw, Cather & Company, February 2000.

Note: The Chicago nonattainment area has a NO_x waiver, published in the January 22, 1996 *Federal Register*. Therefore, no threshold is listed.
N/A = Not Applicable

The figures listed in these tables indicate that the net increase (HSR emissions minus No-Build emissions) in VOC and NO_x emissions will not exceed the thresholds set forth in Illinois's and Missouri's general conformity regulations.

5.4.1.2 Air Quality Impacts from Diversion from other Modes of Travel

Ridership projections available for this project (from Wilbur Smith Associates - St. Louis High Speed Rail Corridor Study Ridership Forecast Technical Report) for the year 2010 indicate that over 60 percent of HSR passengers will be travelers diverted from other modes. As a result, pollutant emissions from buses and private automobiles under the HSR alternative will be lower than those projected for the No-Build alternative. To account for this reduction, emissions were calculated for these modes, using the same methodology described in Section 2.4 for both the No-Build and HSR alternatives. The differences in VOC and NO_x emissions in the ozone nonattainment and maintenance areas between the No-Build and HSR alternatives were taken as credits as part of the conformity analysis. (See Tables 5.4-1 and 5.4-2, reductions from other modes – bus and auto.) As part of these calculations, it was assumed that the pollutant emissions from buses will decrease proportionately with the reduction in trips between the No-Build alternative and the HSR alternative.

Since Interstate 55, the primary facility used for intercity automobile and bus travel in the Chicago - St. Louis corridor, is not located in Jersey County, it is assumed that the diversion of automobile and bus trips to HSR will not reduce VOC or NO_x emissions in the Jersey County maintenance area.

No reduction in pollutant emissions from commercial aircraft as a result of air passengers diverting to high-speed rail was assumed for this project. Although much of the projected HSR ridership is from travelers diverting from air travel, it is assumed that even if the number of flights in the corridor is reduced, additional flights to cities outside of the corridor will be added, particularly at the airports in Chicago and St. Louis.

5.4.1.3 Air Quality Impacts from Additional Vehicle Kilometers (Miles) Traveled from Crossing Closures

As part of the HSR alternative, some highway-railroad at-grade crossings will be closed. These closures will result in additional vehicle kilometers (miles) being traveled and, subsequently, an increase in vehicle emissions. An analysis of projected 2010 traffic (consistent with the methodology described in Section 2.4) was conducted to determine the impact of these additional vehicle kilometers (miles) traveled. In the three ozone nonattainment/maintenance areas, none of the projected VOC or NO_x emissions increases are greater than 2.2 tons per year. (See Tables 5.4-1 and 5.4-2, additional vehicle kilometers (miles) traveled).

5.4.1.4 Conformity Determination

Based on the emission analysis provided in this section, this project is categorized as "exempt" under the general conformity regulations because no net increases in VOC or NO_x emissions are projected in the ozone nonattainment or maintenance areas that exceed the rates set forth in Illinois's or Missouri's general conformity regulations.

Proposed construction in the nonattainment areas is limited and would occur over a minimum of a three-year period. Pollutant emissions associated with construction will not exceed the annual threshold rates set forth in Illinois's general conformity regulations. No construction is proposed for Missouri as part of this project.

5.4.2 Air Quality Impacts in the High-Speed Rail Corridor

An analysis of future mobile source emissions (VOC, CO, and NO_x) was conducted for this project to evaluate intercity passenger travel in the corridor based on the 2010 ridership forecasts. Calculations were based on the methodology described in Section 2.4. Results of the analysis found that future annual emissions in the corridor will decrease under either the No-Build or HSR alternative compared to existing conditions. Additionally, no increases (compared to the No-Build alternative) in the annual mobile source emissions of VOCs and carbon monoxide (CO) are projected for the HSR alternative, regardless of alignment or equipment option. The lower annual emissions with HSR can be attributed to diversions from buses and automobiles to HSR. NO_x emissions are projected to increase under the HSR alternative for all alignments and equipment options. Actual data on pollutant emissions from the high-speed rail engines is not available. Emissions were calculated using the USEPA Tier 1 standards. It is possible that emissions from the high-speed rail engines will be lower than the standards, but since no data is available, the more conservative approach was used to calculate emissions. As with the conformity analysis, reductions in pollutant emissions from commercial aircraft were not assumed for this project.

Table 5.4-3 lists the estimated existing (2000) and future (2010) annual mobile source emissions in the HSR corridor. Since the 2010 forecasts for the Norfolk Southern alignment include automobile travel to and from the Peotone/Kankakee market (as opposed to the Joliet market under the IC/UP alignment), a separate set of No-Build forecasts were developed for this alignment to account for the difference.

For each alignment, annual corridor VOC emissions will be up to one percent lower, CO emissions will be two percent lower, and NO_x emissions will be between one and seven percent higher (depending on equipment) than those under the No-Build alternative.

Annual VOC, CO, and NO_x emissions from the operation of HSR trains will be higher than from Amtrak trains under the No-Build alternative because more HSR trains will be operating in the project area. Additional VOC and CO emissions from the operation of HSR trains will be offset by reductions from other sources as a result of passengers diverting to HSR.

5.4.3 Local Air Quality

5.4.3.1 Short-Term Effects

Construction-related activities can result in short-term impacts to ambient air quality in the vicinity of the construction site. These potential impacts include fugitive dust emissions, direct emissions from construction equipment and truck exhausts, increased emissions and dust from construction vehicles on the streets, and emissions from re-routed vehicular traffic.

No-Build Alternative: Since the No-Build alternative will not require any construction, there are no short-term air quality impacts associated with this alternative.

Table 5.4-3
SUMMARY OF ESTIMATED 2010 AIR EMISSIONS (TONS)
FROM INTERCITY PASSENGER TRAVEL IN THE HIGH-SPEED RAIL CORRIDOR

	VOC				CO				NO_x			
Alternative	**Rail**	**Bus**	**Auto**	**Total**	**Rail**	**Bus**	**Auto**	**Total**	**Rail**	**Bus**	**Auto**	**Total**
Existing (2000)	8	1	1,919	**1,928**	22	3	18,668	**18,692**	246	7	5,443	**5,696**
No-Build - IC/UP and RID	8	2	1,725	**1,734**	22	6	14,688	**14,715**	183	12	4,797	**4,992**
No-Build - Norfolk Southern	8	2	1,881	**1,890**	22	6	16,106	**16,133**	183	12	5,261	**5,456**
IC/UP - F70 w/ Talgo	24	2	1,689	**1,715**	66	5	14,361	**14,432**	346	10	4,693	**5,050**
IC/UP - F70	30	2	1,689	**1,721**	82	5	14,361	**14,448**	429	10	4,693	**5,133**
IC/UP - Turbomeca	46	2	1,689	**1,737**	125	5	14,361	**14,491**	653	10	4,693	**5,356**
Norfolk Southern - F70 w/ Talgo	26	2	1,844	**1,871**	69	5	15,762	**15,836**	363	10	5,153	**5,525**
Norfolk Southern - F70	31	2	1,844	**1,876**	83	5	15,762	**15,850**	435	10	5,153	**5,598**
Norfolk Southern - Turbomeca	48	2	1,844	**1,893**	129	5	15,762	**15,896**	676	10	5,153	**5,838**
Rock Island District - F70 w/ Talgo	24	2	1,689	**1,715**	66	5	14,361	**14,432**	344	10	4,693	**5,047**
Rock Island District - F70	30	2	1,689	**1,721**	82	5	14,361	**14,447**	427	10	4,693	**5,130**
Rock Island District - Turbomeca	46	2	1,689	**1,737**	124	5	14,361	**14,490**	648	10	4,693	**5,352**

Source: De Leuw, Cather & Company, February 2000.
Sverdrup Civil, Inc., September 1998.
Corporate Strategies, Inc., April 1996.

High-Speed Rail Alternative: Under this alternative, regardless of which alignment is evaluated, there will be some local air quality impacts. Fugitive dust emissions vary with the nature of the operations, the type of equipment, soil characteristics, the speed at which construction vehicles are operated, and the fugitive dust control methods employed. Much of the fugitive dust generated by construction consists of particulates of relatively large size that fall to the ground within a short distance of where they are generated. Some windborne particulates may settle on nearby buildings and vehicles. People outdoors near a construction site will be exposed to higher than average amounts of inhalable particulates. However, the impacts associated with construction activities are normally negligible, local, and temporary. Substantial concentrations of pollutants require sustained vehicular traffic volumes in the thousands, which is not characteristic of the type of construction that will be associated with this alternative.

Construction associated with the HSR alternative will occur in areas where new railroad and station construction is planned; double track and freight sidings will be upgraded, extended, and added; new track connections will be added; grade crossing improvements, including grade separations, will be made; frontage/service roads will be constructed; and track improvements will be made.

5.4.3.2 Long-Term Effects

Microscale carbon monoxide analyses were performed for the years 2000 (existing), 2003 (estimated time of completion), and 2013 (estimated time of completion plus 10 years) at four highway-railroad at-grade crossings in the HSR corridor. These locations were chosen because they are the highest volume at-grade crossings that will have more than 100 vehicles per day diverted to them from an adjacent rail crossing proposed for closure. Microscale CO analyses were also conducted at the Bloomington/Normal and Springfield rail passenger stations, where vehicular delay will increase under the HSR alternative as a result of additional trains stopping to load and unload passengers.

Microscale dispersion modeling was used to estimate both one- and eight-hour CO concentrations to determine if any violations of the National Ambient Air Quality Standards (NAAQS) would occur as a result of this project. The carbon monoxide microscale analysis was prepared in accordance with procedures contained in the IDOT Air Quality Manual, dated May 1982. These procedures were adopted as standard after coordination with the Illinois Environmental Protection Agency (IEPA), Division of Air Pollution Control, and the Federal Highway Administration, Illinois Division Office. The analysis is consistent with the latest mobile source emissions factors issued by the USEPA known as MOBILE5A and conformity regulations dated November 11, 1993, (40 CFR Part 93). The calculations of CO concentrations for each receptor were performed using the CAL3QHC (Version 2.0) model (USEPA, 1992). Data inputs include composite vehicle emissions factors, traffic volumes, detailed roadway geometry, background CO concentrations, and meteorological information.

The results of the air quality analysis indicate that neither alternative will produce CO concentrations in excess of the one-hour or eight-hour NAAQS of 35.0 ppm and 9.0 ppm, respectively. The CO concentrations calculated for this project are listed in Table 5.4-4. Under the HSR alternative, one-hour CO concentrations at the locations analyzed are projected to increase from between 0.0 and 1.5 ppm when compared to the No-Build alternative. Eight-hour CO concentrations under the HSR alternative are projected to be between 0.0 and 1.0 ppm higher at these locations. The highest future one-hour and eight-hour CO concentrations are projected at the Bloomington/Normal Station under the HSR alternative in the year 2013.

Table 5.4-4
MAXIMUM ONE-HOUR AND EIGHT-HOUR CO CONCENTRATIONS AT SELECTED RECEPTORS (in ppm)

Location	Existing (2000)	No-Build (2003)	No-Build (2013)	High-Speed Rail (2003)	High-Speed Rail (2013)
			One-Hour		
Laraway Road (MP 40.36)	4.8	4.7	4.7	4.7	4.7
Bloom./Normal Station (MP 124.10)	7.3	7.0	7.4	8.5	8.6
Carpenter Street (MP 184.68)	4.7	4.6	4.8	4.8	4.8
Springfield Station (MP 185.14)	6.7	6.4	6.6	7.5	7.6
Walnut Street (MP 194.40)	4.4	4.2	4.4	4.4	4.4
20th Street (MP 275.00)	5.5	5.4	5.4	5.6	5.5
			Eight-Hour		
Laraway Road (MP 40.36)	3.1	3.0	3.0	3.0	3.0
Bloom./Normal Station (MP 124.10)	4.6	4.4	4.6	5.4	5.5
Carpenter Street (MP 184.68)	2.8	2.7	2.8	2.8	2.8
Springfield Station (MP 185.14)	4.2	3.9	4.1	4.7	4.8
Walnut Street (MP 194.40)	2.5	2.4	2.5	2.5	2.5
20th Street (MP 275.00)	3.2	3.1	3.1	3.3	3.2

Source: De Leuw, Cather & Company, February 2000.

Results of the microscale CO analyses indicate that under the HSR alternative, there will be a slight degradation of air quality when traffic is diverted to another crossing. However, the projected concentrations are well below the NAAQS.

5.4.4 Mitigation

Results of the air quality analysis conducted for this project indicate that the project is considered exempt under the general conformity regulations of Illinois and Missouri. Additionally, according to results of the microscale CO analysis, no new violations of the NAAQS will occur. Therefore, each of the improvements is consistent with both the Federal Clean Air Act and its amendments and the provisions of the current State Implementation Plans (SIP).

No long-term air quality impacts are expected at either the local or regional level. Air quality mitigation measures are only discussed for construction-related impacts associated with the HSR alternative. During construction, adequate dust-control measures will be maintained so as not to cause detriment to the safety,

health, welfare, or comfort of any person, or cause damage to any property or business. Fugitive dust will be generated during periods of intense construction activity and will be accentuated by windy and/or dry conditions. Good housekeeping practices, such as wetting and chemically treating exposed earth areas, covering dust-producing materials during transport, and limiting construction activities during high wind conditions, will minimize the dust impacts. Direct emissions from construction equipment and trucks are generally not expected to require mitigation. However, exhaust emissions from diesel-powered trucks are a distinct source of odor and a potential source of fugitive dust emissions. Keeping the trucks clean and routing them away from residential and other sensitive receptor locations will alleviate these impacts. Trucks can be kept cleaner by installing a grating at the entrance and exit ways to the construction site to "shake" loose dust that adheres to the truck surfaces. Watering down the trucks on an as-needed basis will also be effective. Covering trucks and rail cars carrying excavated material will further reduce fugitive dust emissions.

Additionally, there is one related local air quality issue associated with the Norfolk Southern alignment at the proposed northern terminus in Chicago. The Chicago 1919 Lake Front Development Ordinance precludes operation of fossil-fueled locomotives north of Roosevelt Road extended. If HSR service is to be provided over the most northerly 1.9 kilometers (1.2 miles) of the Norfolk Southern alignment, this issue must be addressed. In the past, dispensations have been given to allow non-electric powered railroad operations into the Randolph Street station. However, these dispensations have only been temporary. Dual-powered locomotives could also be considered as a mitigation action for operation into Randolph Street Station. If permanent access to the Randolph Street Station is not available for HSR service, trains will be routed to Union Station as the Chicago - Carbondale Amtrak route currently is. This issue can not be resolved at this time. Therefore, it remains as an unresolved issue and is included as such in the Summary Section of this document. (See Section S.6.)

5.5 NOISE AND VIBRATION

This section contains a summary of results of the noise and vibration analysis performed for this project.

5.5.1 Evaluation Criteria

5.5.1.1 Train Noise Criteria

Train noise impacts were evaluated based on projected noise increases relative to existing conditions at noise sensitive receptors. Depending upon the land use, this increase was measured in terms of either the one-hour equivalent sound level $L_{eq}(h)$, which accounts for the moment-to-moment fluctuations in A-weighted sound levels during one hour, or the day-night sound level L_{dn}, which represents the total dose of noise energy at a given outdoor location over a 24-hour period. Both descriptors are measured in terms of the A-weighted sound level in decibels (dBA). $L_{eq}(h)$ is applied for noise sensitive land uses where sensitivity does not depend on the time of occurrence, such as schools, places of worship, and recreational areas. L_{dn} includes an added 10-decibel weighting imposed on sound levels occurring during the nighttime and is applied for residences, hospitals and other buildings where people sleep. Section 2.5.2.1 provides more information on these descriptors.

Evaluation criteria for train noise impacts are based on those described in the Federal Rail Administration manual, High Speed Ground Transportation Noise and Vibration Impact Assessment. These criteria, presented in Table 5.5-1, are based on Federal noise standards and well-documented criteria and research into human response to noise.

5.5.1.2 Vibration Criteria

Vibration impacts from train operations in the project area were evaluated based on the projected root mean square (rms) ground vibration velocity level (VdB), expressed in decibels relative to a reference velocity of one micro-inch per second. The criteria are given in terms of velocity because the sensitivity of humans, buildings, and equipment to vibration has typically been found to correspond to a constant level of vibration velocity amplitude within the low-frequency range of most concern for environmental vibration (approximately 5 to 100 Hz). Criteria for ground-borne vibration impact are based on those outlined in the FRA manual and are presented in Table 5.5-2.

Table 5.5-2
GROUND-BORNE VIBRATION IMPACT CRITERIA

	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)	
Land Use Category	**Frequent[1] Events**	**Infrequent[2] Events**
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[3]	65 VdB[3]
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB

Source: FRA High Speed Ground Transportation Noise and Vibration Impact Assessment Manual, December 1998.

Notes:
1. "Frequent Events" is defined as more than 70 vibration events per day.
2. "Infrequent Events " is defined as fewer than 70 vibration events per day.
3. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

5.5.2 Methodology for Assessing Noise and Vibration During Operation

A total of 3,529 residential receptors and 71 non-residential receptors were identified in the HSR project area. Table 5.5-3 lists the number of sites analyzed by land use category and alignment. No noise receptors where quiet is an essential element of their intended purpose or vibration receptors where low ambient vibration is essential for interior operations were identified for this project.

Table 5.5-1
NOISE LEVELS DEFINING IMPACT FOR HIGH-SPEED RAIL PROJECTS

Existing Noise Exposure Leq(h) or Ldn (dBA)	Project Noise Impact Exposure, Leq or Ldn (dBA)					
	Residential and Other Sensitive Receptors			Non-Residential Receptors		
	No Impact	Impact	Severe Impact	No Impact	Impact	Severe Impact
<43	< Ambient + 10	Ambient+10 to 15	>Ambient+15	< Ambient+15	Ambient+15 to 20	>Ambient+20
43	<52	52-58	>58	<57	57-63	>63
44	<52	52-59	>59	<57	57-64	>64
45	<52	52-59	>59	<57	57-64	>64
46	<52	52-59	>59	<57	57-64	>64
47	<52	52-59	>59	<57	57-64	>64
48	<53	53-59	>59	<58	58-64	>64
49	<53	53-59	>59	<58	58-64	>64
50	<53	53-60	>60	<58	58-65	>65
51	<54	54-60	>60	<59	59-65	>65
52	<54	54-60	>60	<59	59-65	>65
53	<54	54-60	>60	<59	59-65	>65
54	<55	55-61	>61	<60	60-66	>66
55	<55	55-61	>61	<60	60-66	>66
56	<56	56-62	>62	<61	61-67	>67
57	<56	56-62	>62	<61	61-67	>67
58	<57	57-62	>62	<62	62-67	>67
59	<57	57-63	>63	<62	62-68	>68
60	<58	58-63	>63	<63	63-68	>68
61	<58	58-64	>64	<63	63-69	>69
62	<59	59-64	>64	<64	64-69	>69
63	<60	60-65	>65	<65	65-70	>70
64	<60	60-66	>66	<65	65-71	>71
65	<61	61-66	>66	<66	66-71	>71
66	<61	61-67	>67	<66	66-72	>72
67	<62	62-67	>67	<67	67-72	>72
68	<63	63-68	>68	<68	68-73	>73
69	<64	64-69	>69	<69	69-74	>74
70	<64	64-69	>69	<69	69-74	>74
71	<65	65-70	>70	<70	70-75	>75
72	<65	65-71	>71	<70	70-76	>76
73	<65	65-72	>72	<70	70-77	>77
74	<65	65-72	>72	<70	70-77	>77
75	<65	65-73	>73	<70	70-78	>78
76	<65	65-74	>74	<70	70-79	>79
77	<65	65-75	>75	<70	70-80	>80
>77	<65	65-75	>75	<70	70-80	>80

Source: FRA High Speed Ground Transportation Noise and Vibration Impact Assessment Manual, December 1998.

Notes:
1. Ldn is used for land uses where nighttime sensitivity is a factor; Leq during the hour of maximum rail noise exposure is used for land uses involving only daytime activities.

Table 5.5-3
SUMMARY OF PROJECTED NOISE AND VIBRATION ESTIMATES
ALONG THE HIGH-SPEED RAIL CORRIDOR

				No-Build Alternative								High-Speed Rail Alternative							
				Noise Range				Vibration Range				Noise Range				Vibration Range			
County	Alignment	Type of Receptor	No. of Receptors	Low (dBA)	Approx. Milepost	High (dBA)	Approx. Milepost	Low (VdB)	Approx. Milepost	High (VdB)	Approx. Milepost	Low (dBA)	Approx. Milepost	High (dBA)	Approx. Milepost	Low (VdB)	Approx. Milepost	High (VdB)	Approx. Milepost
Cook	IC/UP	Residential	338	56	3	67	22	53	3	75	12	57	3	69	22	53	3	78	12
		Non-Residential	5	56	22	62	22	67	22	75	22	55	22	62	22	70	22	78	22
	Norfolk Southern	Residential	338	63	28	68	15	61	28	70	15	63	28	69	15	64	7	73	15
		Non-Residential	0																
	Rock Island District	Residential	775	52	12	65	9	59	4	76	12	53	10	65	9	59	12	78	12
		Non-Residential	3	51	13	58	18	65	13	68	18	53	13	59	18	67	13	72	18
Will	IC/UP	Residential	110	55	44	67	37	61	30	75	37	56	44	69	37	64	30	78	37
		Non-Residential	10	53	30	60	30	61	30	72	30	53	30	59	30	64	30	75	30
	Norfolk Southern	Residential	35	62	33	66	33	63	40	70	33	63	33	67	33	66	33	73	33
		Non-Residential	0																
	Rock Island District	Residential	234	56	39	64	31	59	39	73	27	56	39	65	31	63	39	76	27
		Non-Residential	0																
Kankakee	Norfolk Southern	Residential	103	56	105	66	47	59	105	70	47	59	105	67	47	64	105	75	105
		Non-Residential	0																
Grundy	IC/UP, RID	Residential	28	55	64	64	64	61	64	75	64	56	64	64	64	64	64	78	64
		Non-Residential	0																
Livingston	IC/UP, RID	Residential	109	55	73	64	73	61	73	75	73	56	73	64	73	64	73	78	73
		Non-Residential	2	51	73	51	73	67	73	67	73	52	73	52	73	70	73	70	73
	Norfolk Southern	Residential	124	55	73	64	73	59	119	75	73	56	73	64	73	64	119	78	73
		Non-Residential	3	51	73	54	109	63	119	67	73	52	73	54	109	68	119	70	73
McLean	All	Residential	261	55	110	64	140	61	110	75	123	55	123	64	140	64	110	78	123
		Non-Residential	3	53	117	55	123	70	117	72	123	55	117	56	123	73	117	75	123
Logan	All	Residential	94	56	146	64	146	61	146	75	146	56	146	64	146	64	146	78	146
		Non-Residential	0																
Sangamon	All	Residential	496	56	171	73	194	56	185	81	194	56	181	75	194	56	185	84	194
		Non-Residential	46	51	185	60	185	56	185	69	185	50	185	58	185	56	185	72	176
Macoupin	All	Residential	161	59	210	67	222	61	210	75	223	60	210	69	222	64	210	78	223
		Non-Residential	0																
Jersey	All	Residential	33	59	247	65	247	61	247	72	247	60	247	67	247	64	247	75	247
		Non-Residential	1	62	247	62	247	75	247	75	247	61	247	61	247	78	247	78	247
Madison	All	Residential	402	59	256	65	256	60	256	71	256	60	256	66	256	63	256	74	256
		Non-Residential	0																
St. Clair	All	Residential	0																
		Non-Residential	0																
St. Louis	All	Residential	0																
		Non-Residential	0																

Source: De Leuw, Cather & Company, February 2000.

5.5.2.1 Analysis of Train Noise

The general assessment methods described in the FRA and Federal Transit Administration (FTA) manuals were used to project future train noise for the No-Build and HSR alternatives. As with the existing noise estimates, future noise estimates were calculated throughout the project area for receptors located within 75 meters (250 feet) from the track centerline. The noise estimates account for the projected change in train volume (including freight), operating speed, and time of operation throughout the project area.

5.5.2.2 Analysis of Train Vibration

Train vibration was projected based on the general assessment methods outlined in the FRA and FTA manuals. The same receptors analyzed for potential noise impacts were analyzed for potential vibration impacts. Vibration levels are estimated based on a single passby of a train.

5.5.3 Noise and Vibration Impacts

This section describes noise and vibration impacts of the No-Build and HSR alternatives that could exceed the evaluation criteria thresholds.

5.5.3.1 Train Noise

Table 5.5-1 lists the noise impact and severe noise impact thresholds for high-speed rail projects. For this project, no impacts or severe impacts were identified. Projected noise levels by county for the No-Build and HSR alternatives for the year 2010 are listed in Table 5.5-3.

No-Build Alternative: Projected noise levels under the No-Build alternative are either the same or lower than those estimated for existing conditions because freight traffic is expected to decline through much of the project area as a result of the Union Pacific/Southern Pacific merger (Surface Transportation Board, 1996). No noise impacts are projected for the No-Build alternative.

High-Speed Rail Alternative: Noise levels associated with the HSR alternative for any of the alternative alignments will be slightly higher than those projected for the No-Build alternative throughout most of the project area. Implementation of HSR service will result in higher operating speeds than currently experienced along most of the project area, and at greater than 80 mph (130 kph), the major source of train noise is the rolling interaction of the train wheels on the track rail. The noise resulting from this interaction increases with greater speeds. This factor, combined with the increased frequency of the intercity service (from the No-Build's three round trips to the HSR's eight round trips daily), will result in a greater total dose of noise energy at a given location over a 24-hour period. At some receptor locations, noise levels could also be affected by the more frequent sounding of locomotive horns at grade crossings. However, as with the projected No-Build noise levels, projected noise levels for the HSR alternative are generally lower than the estimated existing levels on the IC/UP alignment and on the other alignments south of Dwight because fewer freight trains will be operating on Union Pacific tracks in the project area. The noise analysis for the HSR alternative assumes some freight activity will shift to nighttime hours.

Noise increases of less than three dBA are generally considered “not significant.” No projected noise levels under this HSR alternative exceed their corresponding estimated existing or No-Build noise level by more than 2.6 dBA.

Project noise exposure from HSR trains alone is projected to range between 44 and 62 dBA. At these levels, no impacts were identified in the HSR project area based on the criteria presented in Table 5.5-1.

5.5.3.2 Train Vibration

The major source of train vibration is the rolling interaction of the train wheels on the track rail. The vibration resulting from this interaction increases with greater speeds. This factor, combined with the increased frequency of service, would result in a greater total dose of vibration energy at a given location over a 24-hour period. However, improved technology associated with HSR equipment reduces vibration effects, offsetting some of the increases resulting from higher speeds. Projected vibration levels in the project area for the No-Build and HSR alternatives are listed in Table 5.5-3.

No-Build Alternative: Projected vibration levels under this alternative are the same as those estimated for existing conditions. The projected vibration levels under the No-Build alternative at the receptors analyzed range from 53 to 81 VdB. Based on these projections, no non-residential receptors will be impacted. Sixteen residential receptors will exceed the vibration impact criterion of 80 VdB. These receptors are located in Chatham (MP 194.00).

High-Speed Rail Alternative: In areas where projected HSR operating speed is greater than No-Build speed, projected vibration levels for the HSR alternative are slightly higher than for the No-Build alternative. Under the HSR alternative, regardless of alignment, the vibration impact criteria will be exceeded at one location — the residential receptors in Chatham identified above. The projected vibration level at these receptors is 84 VdB. In Sherman (MP 178.00), the vibration level approaches the impact criterion for residential receptors at one location. For the HSR alternative, projected vibration levels at the receptors analyzed range from 53 VdB to 84 VdB.

5.5.4 Mitigation

5.5.4.1 Mitigation During Construction

As with any construction project, areas around the construction site will likely experience varied periods and degrees of noise impact if the HSR alternative were selected. Under normal circumstances, construction activity will be confined to the hours between 7:00 AM and 6:00 PM, on weekdays. Therefore, critical time periods in which sleep or outdoor recreation occur will not be subject to noise intrusion from construction activities should the HSR alternative be selected.

Construction noise impacts can be reduced 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 impacts during construction are generally limited to annoyance effects and not to building damage effects. As mentioned above, construction will normally be limited to the daytime. Construction 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 will be taken to prevent vibration damage to adjacent structures. In areas where construction-related vibration is anticipated, basement surveys could be conducted before construction begins to document any damage caused by construction.

5.5.4.2 Mitigation During Operation

No specific noise or vibration mitigation measures are required for the HSR alternative.

Noise Mitigation:

No noise impacts were identified for this project. Therefore, no specific mitigation is proposed.

Vibration Mitigation:

Vibration impacts will continue to occur at sixteen residential receptors in Chatham if HSR service were implemented. Estimates of existing conditions indicate that current vibration levels at these receptors currently exceed the residential impact criterion.

Since the primary source of ground-borne vibration from trains is wheel/rail contact, an enhanced track and vehicle maintenance program could minimize vibration from wheel/rail interaction. Vibration levels could be further reduced by any of these four measures: 1) installation of ballast mats; 2) installation of floating concrete slabs; 3) switching from concrete to wood ties; or 4) construction of deep trenches parallel to the tracks between the tracks and sensitive receptors. The ballast mats could be installed under the existing ballast at the locations where the greatest vibration impact is expected. These mats have been shown to be effective in Europe and along rapid transit lines in Boston.

5.6 WATER RESOURCES

5.6.1 Impact Assessment Methodology

The evaluation of impacts to water resources considered the proximity of the water feature to the construction area, anticipated construction methodology, existing quality and condition of project area streams as well as the specific types of impact.

The following assumptions were made regarding project construction. No new bridge construction will occur on areas of proposed double track, but existing bridges may be widened. Where there is an existing facility, all work for bridge widenings will be conducted from the existing track, limiting the impact to a zone extending eight meters (25 feet) back from the top of stream bank. No channel relocation will occur with the proposed project. No new bridge or existing bridge modifications will occur at any of the crossings of Navigable Waters of the U.S., including the Kankakee River. At new stream crossings for service roads, either culverts will be installed within the stream or the streams will be bridged. There will be no anticipated changes in stream bed elevation due to culvert installation. Culverts will be three- or four-meter (10- or 12-

foot) long cast-in-place. Riprap will be placed along a 12-meter (40-foot) strip on streambanks in all areas of new and widened bridges to assist with bank stabilization.

5.6.2 Direct and Indirect Impacts

The construction and maintenance of the HSR alternative can potentially affect water resources in a variety of ways. Short-term construction impacts can result most directly from clearing, excavation and fill activities that expose soils to erosion and elevate turbidity levels and siltation in receiving waters. Increases in suspended solids also can result in elevated levels of coliform bacteria, total phosphorus, heavy metals and organic chemicals, such as pesticides and herbicides. Construction areas will be graded, seeded and stabilized as soon as possible after construction is completed. These activities will be governed by IDOT Standard Specifications for Erosion and Sediment Control, thus minimizing this impact.

Long-term maintenance activities include the management of right-of way vegetation, the cleaning of ballast, periodic repair and replacement of ties and tracks and the maintenance of bridge facilities. These actions can result in the temporary and localized discharge of pollutants. Some direct contact to streams from chemicals may occur due to wind drift. However, the majority of sprayed and/or applied chemicals will be filtered out or adsorbed as surface runoff flows through vegetated swales and wetlands within the right-of-way. Runoff from newly constructed access and frontage/service roads will also contain deicing chemicals, particulates and traffic related heavy metals. The slight increase in runoff and pollutants associated with these facilities will be negligible relative to existing conditions.

Stream and river encroachments can modify flow hydraulics in turn causing minor morphological changes to the stream channel. Morphological changes can cause bank instability, increase water velocity, decrease natural settling of particulate matter, impact pool/riffle habitat, and ultimately increase sedimentation downstream of the impacted area reducing aquatic habitat. Where rail alignments exist, direct morphological changes are not expected to occur at the stream channel crossings since only minor fills will be necessary to extend pilings for bridge widenings. These encroachments to perennial or intermittent streams identified as waters of the U.S. will require coordination with the U.S. Army Corps of Engineers (COE) in regard to an Individual Permit under Section 404.

The HSR alternative alignments also have the potential to inhibit or redirect shallow groundwater movement due to the compaction nature of the construction activities of bridge installation, and road and railroad construction. Impacts will be most apparent where construction activities will be on a new location, since it is assumed that groundwater flows and volumes have reached an equilibrium with the existing railroad alignment. Flow patterns for major drainage will not be affected.

During the project construction activities, there is a relatively low risk of chemical and petroleum product spills; however, if this did occur, water quality of the streams would be adversely affected.

Fish and Aquatic Resources:

Site construction could physically alter waters of the U.S. by increasing sediment, turbidity, and toxin levels, or by removing riparian habitat. Increased sediment and turbidity levels could result from surface erosion of cuts and fills. Wash out areas, and increased scour regions at culvert outlets could also increase sediment and turbidity levels.

Sediments in water reduce the chances of successful spawns and overwintering of fish. Sediments suffocate eggs of native fish and decrease food levels for vertebrates and invertebrates alike by covering habitat substrates. Decreases in macroinvertebrate populations will directly affect food availability to fish and other species. Toxin pollution could occur if petroleum products or other chemicals are released into the water during construction or maintenance of the railway. Toxins entering water bodies can affect fish and macroinvertebrate populations directly and indirectly. A direct impact could result in fish kill while an indirect impact could result in a species' inability to reproduce or properly function.

Disturbance to the riparian vegetation can also be harmful to fish and invertebrate populations. Vegetation stabilizes soils and provides a buffer against sediments and chemical transport to water bodies. It also provides a food source and substrate for invertebrates which are in-turn used as food by fish. Riparian vegetation shades the water, modulating water temperatures during summer months.

5.6.2.1 Surface Water Impacts

No-Build Alternative: Under the No-Build alternative there will be no additional siltation and sedimentation to the stream environments due to project construction activities. Thus, there will be no direct impact degrading water quality and aquatic habitat. Changes to channel morphology and the indirect impacts associated with this modification will not occur. Those areas presently exhibiting poor bank stabilization and erosion in conjunction with the railroad right-of-way, will not benefit from placement of riprap to provide bank stabilization, since bridge widenings will not take place under this alternative.

High-Speed Rail Alternative:

IC/UP Alignment. A total of 56 streams, small tributaries and drainageways will be potentially affected by the IC/UP alignment. Of these, 42 streams or tributaries will be crossed by double track or siding construction requiring bridge or culvert widening to accommodate the additional track. Also, a total of 14 new crossings will be constructed in conjunction with frontage/service road development. From Chicago to Joliet, 10 crossings are anticipated to be required under the IC/UP alignment. From Joliet to Dwight, this alignment will affect one stream crossing. From Dwight to St. Louis, 33 crossings are expected to require widening, and 12 new bridges will need to be built for frontage/service road development.

The construction activities, whether bridge widening or new bridge construction, all have the potential to temporarily degrade the stream water quality due to erosion/siltation. This impact will increase turbidity and lower dissolved oxygen to levels that may temporarily violate state water quality standards. For those streams within the IC/UP alignment construction areas characterized by IEPA for their designated uses (see Table 2.6-3), five are listed as full support and one as full support but threatened. The most sensitive stream to erosion/siltation impact will be the Mackinaw River, due to its classification as a Unique Aquatic Resource, and Prairie and Forked Creeks due to their confluence with the Kankakee River immediately downstream from where construction activities will take place. Anticipated impacts from operation and maintenance will be similar to existing conditions, except for minor road runoff impact from the new frontage/service road development. Given the extensive length of the project area, pollutant loading associated with additional runoff from 14 new frontage/service roads will be negligible.

Fish and Aquatic Resources. Potential for impact to fish and aquatic resources along the IC/UP alignment is greatest at and immediately downstream from stream crossings. The primary impact to fish and aquatic invertebrates will likely be habitat displacement and direct mortality associated with siltation and erosion.

These impacts will be directly related to sedimentation and physical and chemical change to water quality. Given the mitigation measures proposed, these will be short-term impacts, not measurably affecting aquatic resources.

Norfolk Southern Alignment. A total of 61 streams, tributaries or drainageways will be potentially affected by the Norfolk Southern alignment. Of these, 47 stream crossings will have bridge widenings and 14 crossings will have new bridges constructed. From Chicago to Dwight there will be 16 crossings. From Dwight to St. Louis, this alignment will require 33 crossings be widened and 12 new bridges be constructed, the same as the IC/UP alignment.

Construction related impacts for the Norfolk Southern alignment will be similar to those presented for the IC/UP alignment. In proposed construction areas along this alignment, there are six streams characterized as full support for their designated uses. The Mackinaw River and four tributaries to the Kankakee River will be the most sensitive streams to water quality impacts. As with the IC/UP alignment, anticipated impacts from operation and maintenance will be similar to existing conditions. Impacts from additional runoff from constructed frontage/service roads will also be negligible.

Fish and Aquatic Resources. Potential impacts to fish and aquatic resources along the Norfolk Southern alignment will be similar to those along the IC/UP alignment although more wet prairie exists along this alignment than the other alignments. Additionally, one aquatic bed wetland occurs within the construction limits. Wetland habitat loss will occur along the full length of this alignment, generally in increments of 0.04 to 0.12 hectares (0.1 to 0.3 acres). In most cases this will remove habitats from the edge of existing wetlands, thus reducing the overall size of the systems. Although not directly measurable, these changes will constitute a permanent incremental loss. Siltation and erosion will be the primary impacts to invertebrate and fish populations.

Rock Island District Alignment. This alignment will have slightly less impact to the IC/UP alignment, with respect to impacts to water resources. A total of 46 streams and small tributaries will be potentially affected. Of these, 33 waterways will be crossed by double track or siding construction requiring bridge or culvert widening. As with the IC/UP alignment, the most sensitive streams to erosion/siltation impacts will be the Mackinaw River, and Prairie and Forked Creeks.

Fish and Aquatic Resources. Impacts to fish and other aquatic resources will be similar to those associated with the IC/UP alignment since all stream crossings south of Joliet are common to both. No improvement projects are proposed along the Rock Island District alignment north of Joliet.

Comparison of Alternatives. The build alignment with the lowest potential impact to water resources is the Norfolk Southern. Although this alignment could potentially affect four tributaries to the Kankakee River, two of the four streams have intermittent flow and the distance of the impact area to all the streams' convergence with the Kankakee River will likely limit the amount of sedimentation and siltation reaching the Kankakee River.

5.6.2.2 Groundwater Impacts

None of the build alignments will measurably alter groundwater flow patterns since all improvements will lie adjacent to and parallel with existing railroad facilities. During construction, potential, but limited risk may be present for the release of motor fuel, oils, or other contaminants onto ground surfaces adjoining the HSR

alternative alignments. Although minimal, the potential for impact will be the greatest where the alignments pass within a well-head protection area for a public water supply. All alignments pass through the United Water Illinois recharge area. During operation, none of the high-speed passenger trains will carry cargo or freight that will be toxic or hazardous to groundwater supplies, except the 94 to 98 tons of on-board diesel fuel in the engine which has been easily contained in previous spills.

5.6.3 Mitigation Summary

The greatest potential for degrading water quality will likely occur as a result of soil disturbance, and associated erosion and siltation. Transport of eroded material to the stream environment will result in increased turbidity, suspended solids, and sedimentation and reduced available dissolved oxygen. In order to minimize this type of impact, an erosion and sediment control plan will be incorporated into the final plans and implemented as part of the construction process. This plan will require erosion control inspections weekly, as well as after each 1.3-centimeter (0.5-inch) rainfall event. Best management practices (BMP) will be utilized to protect aquatic resources. Visual inspections will identify critical erosion control and maintenance needs, assure that turbidity is minimized and that the project complies with Section 404 and National Pollutant Discharge Elimination System (NPDES) permits. Mitigation measures will include the stabilization of stream banks immediately following construction activities, the diversion of surface water runoff from directly entering stream environment during construction activities, and avoidance of working within stream channels during periods of high flow.

A 12-meter (40-foot) long strip of riprap will be placed along streambanks to provide bank stabilization for those areas where construction activities such as bridge widenings and construction of new bridges will take place. Application of a generally accepted fugitive dust control method will be implemented. Encroachment on stream environments will be designed and implemented to minimize disturbance of the streams' characteristics (i.e., channel morphology, flow hydraulics, stream bed elevation, etc.). BMP will be implemented for work in association with the Mackinaw River, due to its high rating as a Unique Aquatic Resource, and to the tributaries to the Kankakee River, where the construction zones occur in close proximity to their confluence with the Kankakee River.

During the design phase of this project, the construction limits will be defined and minimized in those areas of stream crossings. Erosion, sedimentation and bank stabilization measures will be employed, consistent with IDOT's Bureaus of Construction and Design and Environment Policy and Procedure Memorandum dated September 15, 1998. Mitigation measures outlined for vegetation and wetlands in Section 5.8.4 will contribute to stream protection.

Water withdrawal for construction activities will be controlled so as to prevent dewatering of any streams. Coordination with the Illinois Department of Natural Resources (IDNR), Office of Water Resources, will be conducted for any water withdrawal during the construction phase.

Fish and Aquatic Resources:

Mitigation measures to minimize effects on fish and aquatic resources include the use of appropriate runoff, erosion, sedimentation, and pollution control measures as described above. The effectiveness of these measures will be monitored during project construction and until disturbances have become stabilized. Visual assessments of turbidity will be made to identify a potential sedimentation problem relating to project construction. Mitigation measures identified for water resources will also apply to fish and aquatic resources.

5.6.4 Unavoidable Adverse Impacts

It is unlikely that erosion or sedimentation impacts can be completely avoided during the construction phase of the project. Given the magnitude of the stream kilometers (miles) within the project area, for most streams, the project construction activities occur in small isolated portions of the streams. The temporary impact will not appear to be comparable to the already existing conditions of many of the streams within the project area. Many have already had their stream characteristics and water quality compromised through channelization, and utilization for discharge, whether it be for point source or nonpoint source. The implementation of erosion and sediment control measures and stormwater pollution prevention measures at stream crossings will be part of the overall project as required by the NPDES and Section 404 permits.

5.6.5 Cumulative Impacts

Cumulative impacts are defined as those impacts contributing to the degradation of water resources in the project area from past, present, and conceivable future activities. Historically, streams and rivers with substantial flow have been used as flushing systems to dispose of aqueous wastes — municipal and industrial. The larger rivers had been dammed and many small streams and tributaries had been channelized for agriculture and drainage. These utilizations of the water resources, in turn, degraded the quality of the resource. Today, all of the streams within the project area have been impaired to some degree by point and nonpoint source pollution. However, the overall water quality of streams in Illinois has steadily been improving for the past 24 years (IEPA, 1994a). There has been an observable reduction in heavy metal concentrations and other typical pollutants along with increases in dissolved oxygen; this coincides with a reduction of point source impacts. Conversely, nonpoint source pollutant loads associated with agriculture have shown an upward trend.

If land usage remains similar to present day conditions, soil erosion of the cropland will continue to occur within portions of the stream environments via storm runoff. Localized changes in land use may convert cropland and increase impervious areas due to development. This situation, will increase sheet flow runoff to stream environments. Also, with increased development, further utilization of streams for discharge effluents from both municipal and industrial sources will be expected.

5.6.6 Irreversible and Irretrievable Commitment of Resources

It is not anticipated that long-term irretrievable and irreversible commitments of water resources will occur under the HSR Alternative.

5.6.7 Water Related Permits

Section 404 - Construction of any of the HSR alternative alignments will require the acquisition of water related permits under various state and federal laws. Section 404 of the Federal Clean Water Act regulates the discharge of dredged or fill materials into waters of the U.S., including wetlands. The introduction of fill or other materials (other than pre-cast structures) below the ordinary high water line of surface waters such as rivers, streams, ponds or wetlands will require a permit from the U.S. Army Corps of Engineers. The unavoidable filling of wetlands, as well as the construction of new stream crossings by the proposed project, will require the acquisition of a Section 404 permit.

The NEPA/404 merger process is a cooperative effort among review and regulatory agencies to expedite decision making by affecting a single and unified public interest decision as it relates to waters of the U.S. Coordination with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service (FWS), U.S. Environmental Protection Agency, and the Illinois Department of Natural Resources has been on-going as part of the project development. Coordination will continue to involve these agencies in the development of measures to mitigate adverse effects in order to assure that the project meets current regulations including Section 404(b)1 guidelines.

Section 10 of the Rivers and Harbors Act of 1899 regulates any construction, obstruction, excavation or filling affecting navigable waterways. No construction activity is planned at any of the crossings of navigable waterways in the project area. Therefore, neither U.S. Coast Guard Bridge Permits nor Permit Amendments will be required for this project.

Section 401 - Water quality certification will be required for all activities requiring a Section 404 permit. This certification issued by the Illinois Environmental Protection Agency will attest that the proposed action will not significantly degrade surface water quality.

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

5.7 GEOLOGY

Project construction will require the use of industrial minerals such as rock, gravel, clay, and soil. Therefore, some impacts to geological natural resources will occur as a result of the project since construction materials will be needed and grading will occur. Construction materials will be obtained from approved and licensed sources. Grading will occur within a defined construction zone, modifying surface geology and affecting local ecology. (See impact discussion in Section 5.6, Water Resources.) Since the proposed project will be constructed on existing rail alignment, the project will not restrict future geological natural resource extraction or the transmission of natural gas and petroleum products.

Railroad rails, embankments, and structures will be constructed in accordance with IDOT Specifications (or AASHTO and AREMA standards as appropriate) to avoid seismic-induced failure. Portions of the corridor including embankments and structures will be above grade. To reduce potential seismicity/soils impacts, elevated structures will be supported on deep foundations. Elevated areas on fill material will be constructed with light-weight fill and drains and surcharges (loading) to hasten the settlement process and reduce the long-term, post construction settlement. Cement or chemical grouting will be used to increase the cohesive strength of the underlying soils and thus reduce the liquefaction potential. Geotechnical and materials studies

will be performed in the design phase to ascertain the best available technology to apply to reduce the risk to an acceptable level.

5.8 WETLANDS

5.8.1 Impact Assessment Methodology

Quantitative evaluations of wetland communities potentially affected by the proposed alternative alignments were derived through preparation of 1:2400 resources mapping. Wetland communities were identified on these maps during field surveys and by using aerial photograph interpretation when the wetland extended beyond the project area. Wetland impacts were determined following an environmentally conservative approach wherein a worst case area of impact was used. Direct impacts to wetlands will come from three types of activities: construction, operation, and maintenance.

Impacts caused by construction activity will depend on the type of proposed construction and existing track conditions at the specific location. Where double track or sidings will be placed on an existing double-wide base with only a single track present, the impact evaluation used the assumption of a six-meter (20-foot) wide disturbance zone extending from the edge of track. Where new track will be placed on an existing single-wide base, the assumption of a 20-meter (65-foot) wide disturbance area was used. Actual impacts within this disturbance zone are unlikely to affect the entire area as construction of new track will be done from the existing track to the maximum degree possible. Where construction of new service roads are proposed, an impact zone 15 meters (50 feet) wide was assumed extending beyond the edge of the right-of-way. Impacts to grade separation and station areas were based on the area of construction, assuming a 100 percent impact within that zone. The dimensions of the area of construction varied with each grade separation and station area.

5.8.2 Direct and Indirect Impacts

Impacts to wetland communities include removal of vegetation, filling wetlands, and altering hydrology. The duration and severity of impacts will depend on the success of mitigation measures and the time required for natural succession to return disturbed areas to pre-disturbance conditions of diversity and productivity. The proposed project will cause direct impacts through construction and associated activities and indirect impacts through altering the hydrology of wetlands and through future impacts associated with the operation of high-speed rail service. The primary effect on wetland resources will be due to project construction; minimal effect will occur due to project operation and maintenance (e.g., changes in the number of trains operating, train velocity, cleaning of tracks, herbicide management of vegetation, etc.). Table 5.8-1 summarizes direct wetland impacts by alignment.

Direct impacts will include short-term and long-term losses of wetlands (modification of structure, species composition, and areal extent of cover types) through clearing, excavating, filling, and re-grading of the improved railroad base, grade separations, and frontage/service roads. Disposal of trees, shrubs, and other vegetative material cleared from the project work areas will be in accordance with the state regulations governing solid waste disposal. BMPs to reduce impacts from vegetation clearing will include minimizing the zones of construction and re-vegetating/mulching areas disturbed.

Impacts from the daily operation of trains will come from the increase in the number of trains using the tracks.

Currently, maintenance activities along the existing tracks consist of applying herbicides and the cutting of vegetation within the right-of-way (approximately 15 meters/50 feet from the center line of the track). It is anticipated that no change will occur in the type and frequency of maintenance activities as a result of implementing high-speed rail service. Currently, high quality wetland communities exist and survive successfully along the existing railroad tracks. Hence, it is likely that these existing wetland communities, if not impacted by construction, will not be further impacted by future maintenance.

A qualitative evaluation of indirect impacts was based on anticipated construction and operation procedures and current environmental literature. Indirect adverse impacts will include the short-term and long-term increased potential for weed invasion, establishment, and expansion; reduction in plant photosynthetic capacity due to coverage by fugitive dust; exposure of soils to accelerated erosion; shifts in species composition and/or changes in vegetative density away from a more desirable condition (e.g., native communities); loss of natural biodiversity; and reduction of wildlife habitat. Construction activities and increased disturbance could introduce and provide conditions conducive to the spread of non-conservative or weedy plants in the railroad corridor. During revegetation weeds often out- compete the more desirable species, rendering a site less productive as a source of forage and/or habitat for wildlife.

No-Build Alternative: With the No-Build alternative, no wetland habitat will be lost. Track maintenance will continue within existing rights-of-way, including mowing, clearing and herbicide treatment. However no filling or grading will take place.

Table 5.8-1
WETLAND IMPACTS

Milepost	Wetland	COE District	Watershed	Size hectares (acres)	Wetland Loss - hectares (acres) PEM	PUB	PSS	PFO	Type of Alteration[1]	Ratio on Site[2]	Required Compensation hectares (acres)
IC/UP Alignment North (IC-Joliet Line - Chicago to Joliet)											
23.50	A	Chicago	Des Plaines River	0.02 (0.06)	0.01 (0.03)				SA	2:1	0.02 (0.06)
26.50	A	Chicago	Des Plaines River	0.28 (0.70)	0.09 (0.23)				SA	2:1	0.19 (0.46)
	B	Chicago	Des Plaines River	0.28 (0.69)	0.28 (0.69)				D	2:1	0.56 (1.38)
27.25	A	Chicago	Des Plaines River	0.05 (0.13)	0.00 (0.00)				--	--	0.00 (0.00)
29.00	A	Chicago	Des Plaines River	0.48 (1.18)	0.48 (1.18)				D	5.5:1	2.63 (6.49)
	B	Chicago	Des Plaines River	0.04 (0.09)	0.04 (0.09)				SA	2:1	0.07 (0.18)
	C	Chicago	Des Plaines River	0.02 (0.04)	0.02 (0.04)				SA	2:1	0.03 (0.08)
	D	Chicago	Des Plaines River	0.02 (0.06)	0.02 (0.06)				SA	2:1	0.05 (0.12)
33.45	A	Chicago	Des Plaines River	0.02 (0.04)	0.02 (0.04)				SA	2:1	0.03 (0.08)
			Total Size:	1.21 (2.99)	0.96 (2.36)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)			3.58 (8.85)
IC/UP Alignment Central (Union Pacific - Joliet to Dwight)											
54.00-57.00	D	Chicago	Kankakee & Iroquois Rivers	0.13 (0.31)	0.13 (0.31)				SA	5.5:1	0.69 (1.71)
	F	Chicago	Kankakee & Iroquois Rivers	0.49 (1.22)	0.49 (1.22)				D	1:1	0.49 (1.22)
	J	Chicago	Kankakee & Iroquois Rivers	3.03 (7.48)	3.03 (7.48)				D	5.5:1	16.66 (41.14)
	K	Chicago	Kankakee & Iroquois Rivers	0.39 (0.96)	0.39 (0.96)				D	5.5:1	2.14 (5.28)
	L	Chicago	Kankakee & Iroquois Rivers	0.45 (1.12)	0.35 (0.86)				D	1:1	0.35 (0.86)
	M	Chicago	Kankakee & Iroquois Rivers	0.01 (0.03)	0.01 (0.03)				SA	5.5:1	0.07 (0.17)
65.50	A	Rock Island	Upper Illinois River	0.02 (0.04)	0.00 (0.00)				--	--	0.00 (0.00)
			Total Size:	4.52 (11.16)	4.40 (10.86)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)			20.39 (50.37)
Norfolk Southern Alignment (IC Mainline - Chicago to Kankakee)											
41.00-55.00	A	Chicago	Kankakee & Iroquois Rivers	0.12 (0.29)	0.00 (0.01)				SA	1:1	0.00 (0.01)

Milepost Wetland	COE District	Watershed	Size hectares (acres)	Wetland Loss - hectares (acres) PEM	PUB	PSS	PFO	Type of Alteration[1]	Ratio on Site[2]	Required Compensation hectares (acres)
B	Chicago	Kankakee & Iroquois Rivers	0.14 (0.34)	0.00 (0.01)		0.00 (0.00)		SA	5.5:1	0.02 (0.06)
C	Chicago	Kankakee & Iroquois Rivers	0.18 (0.44)	0.01 (0.03)				SA	1:1	0.01 (0.03)
D	Chicago	Kankakee & Iroquois Rivers	0.09 (0.23)	0.00 (0.01)				SA	1:1	0.00 (0.01)
E	Chicago	Kankakee & Iroquois Rivers	0.05 (0.13)	0.00 (0.00)				--	--	0.00 (0.00)
F	Chicago	Kankakee & Iroquois Rivers	0.06 (0.16)	0.00 (0.00)				--	--	0.00 (0.00)
G	Chicago	Kankakee & Iroquois Rivers	0.24 (0.59)	0.24 (0.59)				D	1:1	0.24 (0.59)
H	Chicago	Kankakee & Iroquois Rivers	0.06 (0.14)	0.00 (0.00)				--	--	0.00 (0.00)
I	Chicago	Kankakee & Iroquois Rivers	0.04 (0.09)	0.00 (0.00)				--	--	0.00 (0.00)
J	Chicago	Kankakee & Iroquois Rivers	0.57 (1.40)	0.06 (0.15)				SA	5.5:1	0.33 (0.83)
K	Chicago	Kankakee & Iroquois Rivers	0.07 (0.17)	0.00 (0.00)				--	--	0.00 (0.00)
L	Chicago	Kankakee & Iroquois Rivers	0.47 (1.16)	0.00 (0.00)				--	--	0.00 (0.00)
M	Chicago	Kankakee & Iroquois Rivers	0.21 (0.51)	0.04 (0.10)				SA	1:1	0.04 (0.10)
N	Chicago	Kankakee & Iroquois Rivers	0.41 (1.02)	0.04 (0.10)				SA	5.5:1	0.22 (0.55)
O	Chicago	Kankakee & Iroquois Rivers	0.64 (1.57)	0.00 (0.00)		0.00 (0.00)		--	--	0.00 (0.00)
P	Rock Island	Kankakee & Iroquois Rivers	0.37 (0.91)	0.00 (0.00)				--	--	0.00 (0.00)
Q	Rock Island	Kankakee & Iroquois Rivers	0.27 (0.67)	0.00 (0.00)			0.00 (0.00)	--	--	0.00 (0.00)
R	Rock Island	Kankakee & Iroquois Rivers	0.24 (0.59)	0.04 (0.10)		0.00 (0.00)		SA	1:1	0.04 (0.10)
S	Rock Island	Kankakee & Iroquois Rivers	0.07 (0.17)	0.00 (0.00)		0.00 (0.00)		--	--	0.00 (0.00)
T	Rock Island	Kankakee & Iroquois Rivers	0.17 (0.43)	0.00 (0.00)		0.00 (0.00)		--	--	0.00 (0.00)
U	Rock Island	Kankakee & Iroquois Rivers	0.58 (1.44)	0.00 (0.00)				--	--	0.00 (0.00)
W	Rock Island	Kankakee & Iroquois Rivers	0.06 (0.14)	0.00 (0.01)				SA	1:1	0.00 (0.01)
X	Rock Island	Kankakee & Iroquois Rivers	0.01 (0.02)	0.00 (0.00)				--	--	0.00 (0.00)

Milepost	Wetland	COE District	Watershed	Size hectares (acres)	Wetland Loss - hectares (acres) PEM	PUB	PSS	PFO	Type of Alteration[1]	Ratio on Site[2]	Required Compensation hectares (acres)
	Y	Rock Island	Kankakee & Iroquois Rivers	0.87 (2.16)	0.00 (0.01)				SA	1:1	0.00 (0.01)
	Z	Rock Island	Kankakee & Iroquois Rivers	0.20 (0.49)	0.02 (0.06)		0.00 (0.00)		SA	1:1	0.02 (0.06)
	AA	Rock Island	Kankakee & Iroquois Rivers	0.10 (0.24)	0.02 (0.05)				SA	1:1	0.02 (0.05)
	BB	Rock Island	Kankakee & Iroquois Rivers	0.03 (0.07)	0.03 (0.07)				SA	1:1	0.03 (0.07)
	CC	Rock Island	Kankakee & Iroquois Rivers	0.12 (0.30)	0.02 (0.04)		0.00 (0.00)		SA	1:1	0.02 (0.04)
	DD	Rock Island	Kankakee & Iroquois Rivers	0.63 (1.56)	0.00 (0.00)		0.00 (0.00)		--	--	0.00 (0.00)
	EE	Rock Island	Kankakee & Iroquois Rivers	0.02 (0.04)	0.00 (0.00)				--	--	0.00 (0.00)
	FF	Rock Island	Kankakee & Iroquois Rivers	0.75 (1.86)	0.04 (0.09)				SA	5.5:1	0.20 (0.50)
	GG	Rock Island	Kankakee & Iroquois Rivers	2.33 (5.75)	0.00 (0.00)				--	--	0.00 (0.00)
	HH	Rock Island	Kankakee & Iroquois Rivers	0.16 (0.39)	0.00 (0.00)				--	--	0.00 (0.00)
	Unlabeled East Side Wetlands	Rock Island	Kankakee & Iroquois Rivers	5.37 (13.27)	0.00 (0.00)				--	--	0.00 (0.00)
55.00	A	Rock Island	Kankakee & Iroquois Rivers	0.02 (0.04)	0.02 (0.04)				SA	1:1	0.02 (0.04)
Norfolk Southern Alignment (Norfolk Southern - Kankakee to Dwight)											
106.59	A	Rock Island	Kankakee & Iroquois Rivers	15.54 (38.38)	0.00 (0.00)			0.46 (1.14)	D	1.5:1	0.69 (1.71)
	B	Rock Island	Kankakee & Iroquois Rivers	0.09 (0.21)	0.09 (0.21)				D	1:1	0.09 (0.21)
113.00-118.00	B	Rock Island	Kankakee & Iroquois Rivers	1.13 (2.80)	0.46 (1.14)				D	1:1	0.46 (1.14)
	C	Rock Island	Kankakee & Iroquois Rivers	0.20 (0.50)	0.20 (0.50)				SA	1:1	0.20 (0.50)
	D	Rock Island	Kankakee & Iroquois Rivers	0.21 (0.51)	0.11 (0.27)				SA	1:1	0.11 (0.27)
	E	Rock Island	Kankakee & Iroquois Rivers	0.33 (0.82)	0.28 (0.69)				D	1:1	0.28 (0.69)
	F	Rock Island	Kankakee & Iroquois Rivers	0.08 (0.20)	0.08 (0.20)				SA	1:1	0.08 (0.20)
	G	Rock Island	Kankakee & Iroquois Rivers	1.04 (2.57)	0.47 (1.17)				D	1:1	0.47 (1.17)
	I	Rock Island	Kankakee & Iroquois Rivers	1.98 (4.90)	0.19 (0.47)				SA	1:1	0.19 (0.47)

Milepost	Wetland	COE District	Watershed	Size hectares (acres)	Wetland Loss - hectares (acres) PEM	PUB	PSS	PFO	Type of Alteration[1]	Ratio on Site[2]	Required Compensation hectares (acres)
	J	Rock Island	Kankakee & Iroquois Rivers	0.24 (0.60)	0.24 (0.60)				D	1:1	0.24 (0.60)
	K	Rock Island	Kankakee & Iroquois Rivers	0.43 (1.06)	0.06 (0.14)				SA	1:1	0.06 (0.14)
	M	Rock Island	Kankakee & Iroquois Rivers	0.73 (1.80)	0.37 (0.92)				D	1:1	0.37 (0.92)
	Q	Rock Island	Kankakee & Iroquois Rivers	0.07 (0.17)	0.07 (0.17)				SA	1:1	0.07 (0.17)
	R	Rock Island	Kankakee & Iroquois Rivers	0.03 (0.07)	0.03 (0.07)				SA	1:1	0.03 (0.07)
119.70	A	Rock Island	Upper Illinois River	0.35 (0.86)	0.00 (0.00)				--	--	0.00 (0.00)
73.10	A	Rock Island	Upper Illinois River	0.98 (2.43)	0.98 (2.43)				D	2:1	1.97 (4.86)
	B	Rock Island	Upper Illinois River	0.19 (0.46)	0.19 (0.46)				D	2:1	0.37 (0.92)
			Total Size:	39.32 (97.12)	4.42 (10.91)	0.00 (0.00)	0.00 (0.00)	0.46 (1.14)			6.92 (17.09)
IC/UP Alignment South (Union Pacific - Dwight to St. Louis)											
95.00	A	Rock Island	Vermilion River	0.02 (0.06)	0.00 (0.00)				--	--	0.00 (0.00)
96.40	A	Rock Island	Vermilion River	0.13 (0.33)	0.04 (0.11)				SA	2:1	0.09 (0.22)
100.30	A	Rock Island	Vermilion River	0.06 (0.14)	0.03 (0.08)				SA	2:1	0.06 (0.16)
	B	Rock Island	Vermilion River	0.04 (0.09)	0.00 (0.00)				--	--	0.00 (0.00)
106.30	A	Rock Island	Mackinaw River	0.02 (0.06)	0.00 (0.00)				--	--	0.00 (0.00)
	B	Rock Island	Mackinaw River	0.01 (0.03)	0.00 (0.00)				--	--	0.00 (0.00)
	C	Rock Island	Mackinaw River	0.02 (0.04)	0.00 (0.00)				--	--	0.00 (0.00)
	D	Rock Island	Mackinaw River	0.02 (0.06)	0.00 (0.00)				--	--	0.00 (0.00)
134.90	A	Rock Island	Sangamon River	0.18 (0.44)	0.08 (0.19)				SA	2:1	0.15 (0.38)
	B	Rock Island	Sangamon River	0.01 (0.02)	0.01 (0.02)				SA	2:1	0.02 (0.04)
158.50-168.40	A	Rock Island	Sangamon River	0.02 (0.04)	0.01 (0.03)				SA	2:1	0.02 (0.06)
	B	Rock Island	Sangamon River	0.06 (0.14)	0.00 (0.00)		0.04 (0.09)		SA	2:1	0.07 (0.18)
	C	Rock Island	Sangamon River	0.01 (0.03)	0.01 (0.03)		0.00 (0.00)		SA	2:1	0.02 (0.06)

Milepost	Wetland	COE District	Watershed	Size hectares (acres)	Wetland Loss - hectares (acres) PEM	PUB	PSS	PFO	Type of Alteration[1]	Ratio on Site[2]	Required Compensation hectares (acres)
204.55-210.60	A	St. Louis	Lower Illinois River	0.83 (2.06)	0.23 (0.57)				D	2:1	0.46 (1.14)
	B	St. Louis	Lower Illinois River	6.93 (17.12)	0.00 (0.00)				--	--	0.00 (0.00)
212.55-218.65	A	St. Louis	Lower Illinois River	0.23 (0.57)	0.00 (0.00)			0.01 (0.03)	SA	2:1	0.02 (0.06)
	B	St. Louis	Lower Illinois River	0.39 (0.97)	0.04 (0.10)				SA	2:1	0.08 (0.20)
	C	St. Louis	Lower Illinois River	0.10 (0.24)	0.02 (0.04)				SA	2:1	0.03 (0.09)
	D	St. Louis	Lower Illinois River	0.49 (1.22)	0.00 (0.00)				--	--	0.00 (0.00)
	E	St. Louis	Lower Illinois River	0.77 (1.89)	0.00 (0.00)				--	--	0.00 (0.00)
248.00	A	St. Louis	Lower Central Mississippi River	0.08 (0.19)	0.05 (0.13)				SA	2:1	0.11 (0.26)
	B	St. Louis	Lower Central Mississippi River	0.04 (0.10)	0.04 (0.10)				SA	2:1	0.08 (0.20)
			Total Size:	10.46 (25.84)	0.57 (1.40)	0.00 (0.00)	0.04 (0.09)	0.01 (0.03)			1.23 (3.05)

Source: Planning Resources Inc., February 2000.

1- MA = Minimal Alteration; SA = Significant alteration; D = Destruction.

2- The 1:1 ratio applies to all wetlands other than those which have woody vegetation.
The 1.5:1 ratio applies to wetlands in which the vegetation is woody.

Note: The ratios listed above apply unless one or more of the following factors are applicable to the wetlands. If any of the factors described in A through D below apply, the applicable compensation ratio is 5.5:1. If A through D are not met, but E applies, the applicable compensation ratio is 2:1.

A) The presence of a state- or federally-listed threatened or endangered species.

B) The presence of essential habitat of a state- or federally-listed threatened or endangered species.

C) The presence of an Illinois Natural Area Inventory (INAI) Site.

D) A wetland which scores a value of 20 or more using the procedure described in unpublished data cited as A. Taft, J.D. Ladd, G.S. Wilhelm, and L.A. Wetstein, 1993, "Floristic Quality Assessment database for the State of Illinois.

E) A wetland which will be mitigated for outside of its watershed.

High-Speed Rail Alternative:

IC/UP Alignment. The IC/UP alignment will impact 27 of 38 wetland communities, with palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) communities being affected. Total impacts to wetlands will be 5.97 hectares (14.74 acres). Of this impact, 5.92 hectares (14.62 acres) are to palustrine emergent wetland communities, 0.04 hectares (0.09 acres) are to palustrine scrub-shrub, and 0.01 hectares (0.03 acres) are to palustrine forested (Table 5.8-2). Within this alignment, 0.30 hectares (0.74 acres) of impact are attributed to double track, 4.46 hectares (11.01 acres) from freight siding, 0.64 hectares (1.58 acres) from service roads, and 0.57 hectares (1.41 acres) from grade separations.

Table 5.8-2
WETLAND LOSS BY ALIGNMENT AND COWARDIN CLASSIFICATION

	Wetland Loss - hectares (acres)			
Alignment	**PEM**	**PSS**	**PFO**	**Total**
IC/UP	5.92 (14.62)	0.04 (0.09)	0.01 (0.03)	5.97 (14.74)
Norfolk Southern	4.98 (12.31)	0.04 (0.09)	0.47 (1.17)	5.49 (13.57)
Rock Island	4.96 (12.26)	0.04 (0.09)	0.01 (0.03)	5.01 (12.38)

Source: Planning Resources Inc., February 2000.

Four high quality wetland areas will be filled for the construction of a freight siding between MP 54.00 and MP 57.00. Wetland 54.00 D, a 0.13 hectares (0.31 acres) wet meadow, will be filled. This wetland has a Floristic Quality Index (FQI) of 33.20, indicating exceptional floristic quality. It is also potential habitat for the state threatened red-veined leaf hopper because of the presence of prairie dropseed (*Sporobolis heterolepis*).

Wetland 54.00 J is a 3.03 hectare (7.48 acre) emergent wetland with and FQI of 32.91. This wetland also is potential habitat for *S. heterolepis.* All 3.03 hectares (7.48 acres) of this wetland will be filled by the IC/UP alignment.

Wetland 54.00 K is a wet meadow dominated by prairie cord grass. This 0.39 hectares (0.96 acres) wetland has an FQI of 33.20 and is known habitat for the state endangered Eryngium stem borer. This wetland will be filled by the IC/UP alternative alignment.

A final wetland, Wetland 54.00 M, is a 0.01 hectares (0.03 acres) wetland, also dominated by prairie cord grass. This wetland will be filled by the IC/UP alignment.

Norfolk Southern Alignment. The Norfolk Southern alignment will impact all three types palustrine wetland communities: emergent, scrub-shrub, and forested. The impacts to each individual community will include 4.98 hectares (12.31 acres) of emergent wetland, 0.04 hectares (0.09 acres) of scrub-shrub wetland, and 0.47 hectares (1.17 acres) of forested wetland (Table 5.8-2). Of the 98 total wetlands along this alignment, 46 will be impacted, totaling 5.49 hectares (13.57 acres) of lost wetlands.

Four high quality wetlands will be affected by the Norfolk Southern alignment for the construction of a segment of double track between MP 41.00 and MP 55.00. Wetland 41.00 B is a 0.14 hectare (0.34 acre) scrub-shrub wetland with an FQI of 23.20. A small portion of this wetland, 0.004 hectares (0.01 acres) will be filled with the Norfolk Southern alignment.

Wetland 41.00 J is a 0.57 hectare (1.40 acre) wet meadow with an FQI of 37.62. Approximately 0.06 hectares (0.15 acres) of this very high quality wetland will be filled with the Norfolk Southern alignment.

Wetland 41.00 N is a scrub-shrub wetland 0.41 hectares (1.02 acres) in size with a sedge meadow component. Its FQI is 19.70. The Norfolk Southern alignment will fill approximately 0.04 hectares (0.10 acres) of this wetland.

Wetland 41.00 FF is a 0.75 hectare (1.86 acre) scrub-shrub wetland with native forbs such as flat-stemmed spike rush and blue vervain. The FQI for this wetland was 27.78. Approximately 0.04 hectares (0.09 acres) of this wetland will be filled with the Norfolk Southern alignment.

Within this alignment, 0.89 hectares (2.21 acres) of impact are attributed to double track, 2.63 hectares (6.49 acres) from freight siding, 0.26 hectares (0.63 acres) from service roads, 1.17 hectares (2.89 acres) from the Norfolk Southern/UP connection, and 0.55 hectares (1.35 acres) from grade separations.

Rock Island District Alignment. Impacts from this alignment will be similar to the IC/UP alignment, except this alignment will require the loss of less total wetland habitat. This alignment will impact 19 of the 29 total wetlands. This loss of wetlands will include 4.96 hectares (12.26 acres) of emergent wetland, 0.04 hectares (0.09) acres of scrub-shrub, and 0.01 hectares (0.03 acres) of forested wetland for a total wetland loss of 5.01 hectares (12.38 acres). Within this alignment, 0.30 hectares (0.74 acres) of impact are attributed to double track, 4.46 hectares (11.01 acres) from freight siding and 0.26 hectares (0.63 acres) from service roads.

All high quality wetlands filled for the IC/UP alignment will also be filled under the Rock Island since the area of impact is between Joliet and Dwight.

Comparison of Alternative Alignments. For all HSR alternative alignments, the direct impacts to wetland communities include removal of vegetation, deposition of fill material, and alteration of hydrology. Impacts that could affect other resources include soil erosion and sedimentation, reduction in wildlife habitat, and

introduction of noxious and undesirable weedy species. The duration and severity of impacts to wetlands will depend on the degree of disturbance, the success of mitigation measures, and the time required for the revegetation process to adequately revegetate disturbances.

The alignment with the least impact to wetland communities is the Rock Island District (5.01 hectares/12.38 acres). The IC/UP alignment has the greatest impact to wetland resources (5.97 hectares/14.74 acres).

5.8.3 Cumulative Impacts

Cumulative impacts are those impacts that contribute to wetland loss in the project area in the past, are contributing in the present, and may contribute in the reasonably foreseeable future. Ideally, a wetland cumulative impact analysis should be based on individual drainage basins. However, because the project occurs over 400 kilometers (250 miles) and in eight drainage basins (i.e., Des Plaines River and Lake Michigan Tributaries, Kankakee and Iroquois Rivers, Upper Illinois River, Vermilion River, Mackinaw River, Sangamon River, Lower Illinois River, and Lower Central Mississippi River) (Illinois Register, 1995), a watershed analysis is not meaningful because of size.

The cumulative historical loss of wetlands in the state is from 85 to over 95 percent (Mohlenbrock, 1988, Dahl, 1990). Most of the historic loss resulted from conversion to agriculture. An estimated 3,325,000 hectares (8,212,000 acres), or 12 to 25 percent of the State, was wetland during the 1780s (Dahl, 1990). In the mid-1950s, there were approximately 173,000 hectares (427,000 acres) of wetland (Shaw and Fredine, 1956). A 1982 survey by Interstate Water Pollution Control Administrators (ASIWPCA) (1984) estimated 20,000 hectares (50,000 acres) of wetland remaining. Because the surveys used different techniques for obtaining wetland estimates, the results should not be directly compared. The Office of Technology Assessment reports that over the 28-year period from 1954 to 1982, 75,670 hectares (186,905 acres) of wetland (or 23 percent of the wetland present during the mid-1950s) were lost in the State (OTA, 1984). This equates to an average annual loss rate of 2,700 hectares (6,675 acres). This cumulative impact analysis assumes that wetland loss rates over areas covered by the proposed project area are comparable to current loss rates for Illinois. If the current trends in wetland protection and mitigation at the state and federal levels continue, the annual wetland loss rate in the immediate future should remain the same.

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

5.8.4 Mitigation

The design and development of this project has and will continue to follow a three step impact mitigation process prioritized as follows: 1) impact avoidance; 2) impact minimization; and 3) compensation including the repair, rehabilitation, and restoration of former wetland areas; preservation of existing wetland sites; and replacement of affected wetland area (40 CFR 1508.20). Illinois Department of Transportation compensation ratios for wetland impacts are applicable to this project.

Wetland Impact Avoidance:

Given the linear nature of the project, the ability to avoid wetland resources by relocating the project footprint is limited. Mitigation via avoidance will be maximized by 1) using the existing railroad embankment as the base for new track, 2) constructing within the existing right-of-way, 3) where additional right-of-way is required, constructing in new right-of-way that is contiguous to the existing right-of-way, and 4) using the existing embankment to access construction areas and/or build new embankment. Where the right-of-way must be used for access, wetland areas will be avoided.

Wetland Impact Minimization:

Where avoidance is not possible, the area of disturbance (direct and indirect, temporary and permanent) will be minimized. Impact minimization measures will use the best technology currently available. Such practices include the following elements, which will be incorporated into the mitigation program:

a. During the final design phase additional design elements will be incorporated to further minimize impacts. These will include options such as steepening side slopes, building retention walls and/or bridging wetland areas.

b. During the final design phase and as part of the process for developing optimal wetland mitigation, a site-specific evaluation will be made of each wetland affected by project activities. This evaluation will focus on 1) identifying optimal locations for placing construction fences and erosion and siltation controls, 2) evaluating the source of wetland hydrologic support and generating site-specific recommendations to minimize dewatering or detaining excess water in the wetland, and 3) avoiding impacts to wetlands with a native mean C-value of 4.0 or greater, a native FQI value of 20 or greater, and/or wetlands that are particularly difficult to replace (e.g., dolomitic wet prairie).

c. Prior to commencement of construction activities, erosion control fencing will be placed at the limits of construction. Zones of fill, grading, compaction or equipment movement will be restricted to areas outside the protective fencing. Impacts from silt and sedimentation will be minimized through adherence to erosion control measures presented in IDOT's Bureaus of Construction and Design and Environment Policy and Procedure Memorandum dated September 15, 1998.

d. All solid waste material, including cleared vegetation, will be disposed in approved upland areas or licensed solid waste disposal sites, in accordance with state and federal regulations.

e. All culverts, bridges, and other drainage structures in the vicinity of wetlands will be sized and located in a manner that maintains the existing flow regime.

f. The day-to-day enforcement of wetland mitigation provisions will be provided by experienced resident professional engineers. Special conditions set forth in the Section 404 permit will be adhered to.

Wetland Compensation:

In addition to these design and construction actions to maximize avoidance and impact minimization of wetlands, a conceptual wetland mitigation plan will be prepared. This document will incorporate all practicable measures to minimize harm to wetlands. As part of the EIS process, this plan will be reviewed by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the Illinois Department of Natural Resources, and the Illinois Environmental Protection Agency.

Compensation will occur for all adverse impacts to wetlands. IDOT's Wetlands Action Plan contains the guidelines for compensation ratios for wetland impacts. The Illinois Department of Natural Resources has approved IDOT's Wetlands Action Plan.

Minimal Alteration. Where wetland impacts result in minimal alteration, compensation for permanent impacts will occur through conversion of non-wetland areas to wetlands. As indicated previously, restoring an area that was formerly wetland is preferred to creating wetland in an area that was never a wetland. Compensation will be performed at the site of impact at a ratio of 1.0:1 for PEM wetlands and 1.5:1 for PSS and PFO wetlands. If that is not practicable, off-site compensation will occur within the same county and/or drainage basin as the wetland impact at a ratio of 1.5:1, or at a ratio of 2.0:1 if outside the drainage basin. If construction of wetland is not practicable, compensation will occur at the approved wetland bank nearest to the site of impact using a ratio of 1.5:1 or 2.0:1 as appropriate.

Where wetland impacts result in minimal alteration of a temporary nature, mitigation involves reestablishing the wetland in accordance with IDOT's "minimal alteration" compensation ratio and implementing best management practices to prevent siltation and compaction.

Significant Alteration/Destruction. Where wetland impacts result in significant alteration and/or wetland destruction, progressive levels of compensation will be used. This system requires increased compensation based on the level of adverse impact to a wetland and the location of the compensation wetland relative to the affected wetland. Progressive compensation ratios range from 1.5:1 to 5.5:1 as indicated in Table 5.8-1. The highest ratio is used to compensate wetland destruction where replacement occurs out-of-basin. In addition, the highest ratio is used for the following situations: 1) presence of state- or federally-listed threatened or endangered (T&E) species, 2) presence of essential habitat for a state- or federally-listed T&E species, 3) presence of an Illinois Natural Area Inventory (INAI) Site, and 4) native FQI of 20+ and/or a native mean C-value of 4.0 or more.

Wetland Creation. The actual acreage of created wetland required for mitigation on this project will vary depending in where the mitigation is along the project. As currently proposed, all replacement wetland would be constructed in the Kankakee/Iroquois River basin. The alignment with the greatest mitigation requirement is the IC/UP at 25.21 hectares (62.27 acres). The Norfolk Southern alignment will require 8.15 hectares (20.14 acres) of mitigation, and the Rock Island District alignment will require 21.63 hectares (53.42 acres).

If possible, all mitigation will take place at a single site. Initial mitigation studies will focus on those areas nearest the project with existing, drained hydric soils, flat topography and the potential for easily restoring hydrology by severing drainage tiles or impeding surface drainage. A detailed plan will be prepared specifying grading, hydrological modifications and wetland plantings. All plantings will be comprised of native Illinois species. Design and implementation will be conducted in cooperation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources.

Monitoring. Monitoring will occur for all wetland compensation areas of 0.10 hectares (0.25 acres) or greater. Monitoring will be performed according to IDOT's Wetlands Action Plan and any conditions stipulated by the U.S. Army Corps of Engineers. Greater details on the monitoring program will be developed as part of the conceptual wetland mitigation plan.

5.9 NATURAL RESOURCES

5.9.1 Upland Vegetation

5.9.1.1 Impact Assessment Methodology

Quantitative evaluations of vegetation resources potentially affected by the proposed alternative alignments were derived through the preparation of 1:2400 resources mapping. Vegetation communities were identified on these maps using field notes and aerial photograph interpretation. Vegetation impacts were determined following an environmentally conservative approach wherein a worst case area of impact was used. Direct impacts to vegetation will come from three types of activities: construction, operation, and maintenance.

Impacts caused by construction activity will depend on the type of proposed construction and existing track conditions at the specific location. Where double track or sidings will be placed on an existing double-wide base with only a single track present, the impact evaluation used the assumption of a six-meter (20-foot) wide disturbance zone extending from the edge of track. Where new track will be placed on an existing single-wide base, the assumption of a 20-meter (65-foot) wide disturbance area was used. Actual impacts within this disturbance zone are unlikely to affect the entire area as construction of new track will be done from the existing track to the maximum degree possible. Where construction of new service roads are proposed, an impact zone 15 meters (50 feet) wide was assumed extending beyond the edge of the right-of-way. Impacts to grade separation and station areas were based on the area of construction, assuming a 100 percent impact within that zone. The dimensions of the area of construction varied with each grade separation and station area.

5.9.1.2 Direct and Indirect Impacts

Impacts to vegetation communities include both removal of vegetation and changes in vegetation community composition. The duration and severity of impacts will depend on the success of mitigation measures and the time required for natural succession to return disturbed areas to pre-disturbance conditions of diversity and productivity.

While certain site-specific vegetation impacts will be associated with individual alternative alignments, some effects and considerations will be common to all alignments. For the most part, vegetation impacts will be restricted to existing (or new) railroad right-of-way. The primary effect on vegetation resources will be due to project construction; minimal effect will occur due to project operation and maintenance (e.g., changes in the number of trains operating, train velocity, cleaning of tracks, herbicide management of vegetation, etc.).

Direct impacts will include short-term and long-term losses of vegetation (modification of structure, species composition, and areal extent of cover types) through clearing, excavating, filling, and regrading of the improved railroad base, grade separations, and frontage/service roads. Disposal of trees, shrubs, and other vegetative material cleared from the project work areas will be in accordance with the state regulations governing solid waste disposal. Heavy construction equipment could potentially damage roots of large trees and shrubs immediately outside the right-of-way. These impacts will be localized because forested areas are limited and could be mitigated by trimming tree crowns to compensate for root damage. BMPs to reduce impacts from vegetation clearing will include minimizing the zones of construction and revegetating/mulching areas disturbed.

A qualitative evaluation of indirect impacts was based on anticipated construction and operation procedures and current environmental literature. Indirect adverse impacts will include the short-term and long-term increased potential for weed invasion, establishment, and expansion; reduction in plant photosynthetic capacity due to coverage by fugitive dust; exposure of soils to accelerated erosion; shifts in species composition and/or changes in vegetative density away from a more desirable condition (e.g., native communities); loss of natural biodiversity; and reduction of wildlife habitat. Construction activities and increased disturbance could introduce and provide conditions conducive to the spread of non-conservative or weedy plants in the railroad corridor. During revegetation weeds often out-compete the more desirable species, rendering a site less productive as a source of forage and/or habitat for wildlife.

Fugitive dust generated during project construction and operation could adversely affect vegetation due to the reduction in photosynthetic capacity of dust-covered leaves. Although such deposition could have adverse effects, the magnitude of such impact will likely be minimal since wind and rain remove dust on leaves, a relatively small area in close proximity to the dust source will be affected, and fugitive dust control will be implemented as part of BMP for construction operations.

Subtle to dramatic shifts in vegetation could occur through project activities impeding surface and shallow groundwater flows, redirecting them, and/or causing a build-up on the upflow side. Careful placement and installation of culverts and/or bridge crossings will help minimize impacts and maintain existing surface and groundwater flow patterns (see Section 5.6 for additional detail on Water Resources). Impacts to upland vegetation from each HSR alternative alignment are summarized in Table 5.9-1.

No-Build Alternative: Under the No-Build alternative, the vegetation conditions for upland communities will remain similar to the conditions described in Section 2.9. There will be no removal of existing plant communities by project construction. However, track maintenance will continue to affect the adjacent vegetation for existing railroad rights-of-way. Also, existing successional trends will continue until modified by future maintenance or development, if any.

Table 5.9-1
IMPACTS TO UPLAND VEGETATION
hectares (acres)

	Alignment					
Community	**IC/UP**		**Norfolk Southern**		**Rock Island District**	
Forbland	28.22	(69.71)	31.98	(79.00)	27.36	(67.59)
Pasture	0.31	(0.77)	0.31	(0.77)	0.31	(0.77)
Agricultural	27.79	(68.64)	34.66	(85.60)	27.79	(68.64)
Developed	17.27	(42.65)	25.34	(62.60)	11.94	(29.49)
Hedgerow	3.36	(8.30)	3.89	(9.60)	2.64	(6.52)
Shrubland	5.38	(13.28)	5.42	(13.38)	5.13	(12.68)
Non-Native	3.78	(9.33)	5.89	(14.56)	3.69	(9.12)
Native	1.59	(3.93)	7.46	(18.42)	1.59	(3.93)
Upland Forest	7.21	(17.81)	3.64	(8.98)	3.30	(8.14)
Total	**94.91**	**(234.42)**	**118.59**	**(292.91)**	**83.76**	**(206.88)**

Source: Planning Resources Inc., August 1999.

High-Speed Rail Alternative:

IC/UP Alignment. A total of 95 hectares (234 acres) of terrestrial vegetation will be affected by the IC/UP alignment. From Chicago to Joliet, the IC/UP will affect 11 hectares (27 acres) of terrestrial vegetation. From Joliet to Dwight, the IC/UP will affect 8 hectares (19 acres) of terrestrial vegetation. From Dwight to St. Louis, the IC/UP will affect 76 hectares (188 acres) of terrestrial vegetation.

With the exception forest and hedgerow areas and high quality remnant prairies, a permanent reduction in the areal cover of the various upland vegetation communities due to clearing and filling for project facilities will represent a minor impact because the cover types are relatively common in and adjacent to the project area are readily replaceable. The loss of hedgerow, shrubland and upland forest will constitute a greater resource loss. Replacement of hedgerow and shrubland requires on the order of 15 to 25 years. Replacement of upland forest communities requires time frames in the range of 15 to 150 years. Also, the restored habitat is often less diverse than similar natural communities of the same cover type.

Modifications at grade crossings (i.e., closure, installation of protection devices, installation of warning devices, and/or installation of electrical lines as needed) will have minimal impacts on vegetation resources. Nearly all grade crossings are in disturbed land or urban land communities.

Norfolk Southern Alignment. The Norfolk Southern alignment will impact approximately 119 hectares (293 acres) of terrestrial vegetation. From Chicago to Dwight, the Norfolk Southern alignment will affect 43

hectares (105 acres) of terrestrial vegetation. From Dwight to St. Louis there will be 76 hectares (188 acres) of terrestrial vegetation potentially affected.

Rock Island District Alignment. Approximately 84 hectares (207 acres) of terrestrial vegetation will be affected by the Rock Island District alignment. The loss of forest, shrubland, hedgerow, and remnant prairie will constitute a long term and important impact due to the length of the replacement time necessary for these areas and the difficulty in fully restoring native communities. Other cover types are more common in the project area and can be replaced in much shorter time frames, thus the loss of these areas will be considered a minor impact. Impacts to natural areas will be similar to those associated with the IC/UP alignment.

Comparison of Alternative Alignments. For all HSR alternative alignments, the direct impacts to vegetation communities include removal of vegetation and shifts in vegetation community composition. Impacts that could affect other resources include soil erosion and sedimentation, reduction in wildlife habitat, and introduction of noxious and undesirable weedy species. The duration and severity of impacts to vegetation will depend on the degree of disturbance, the success of mitigation measures, and the time required for the revegetation process to adequately revegetate disturbances.

The alignment with the least effect on upland vegetation cover types is the Rock Island District (84 hectares/207 acres). This alignment has the least impact on all upland vegetation, including the communities with the longest replacement times. The alignment with the greatest impact on upland vegetation is the Norfolk Southern alignment. However, relative to the IC/UP alignment, the Norfolk Southern alignment will take more agricultural land and developed land, while the IC/UP will remove nearly twice as much upland forest.

5.9.1.3 Mitigation Summary

A linear feature such as a railroad has limited flexibility to be shifted to avoid impacts to a particular vegetation resource. However, to the extent possible, the side on which the vegetation disturbance will occur was determined based on the types of vegetation that will be affected (as well as on other resources such as threatened and endangered species, natural areas, etc.). Doing so avoided impacts to Hitts Siding Prairie under the IC/UP and Rock Island District alignments.

Where it is not possible to avoid disturbance to vegetation, the area of disturbance will be minimized, particularly in forested sites. This will include constructing additional track from the existing embankment rather than from within the right-of-way adjacent to the embankment. Where the right-of-way must be used for access, the smallest portion of the right-of-way will be disturbed as part of the construction zone.

Per Council on Environmental Quality (CEQ) policy, restoring and enhancing environmental quality is proposed for all impact areas (40 CFR 1500.2, 1502.14, and 1502.16). All disturbed areas not occupied by project facilities will be immediately revegetated and mulched to stabilize disturbed soils, minimize erosion, and enhance the productivity and aesthetics. Cut and fill slopes will constitute the major areas requiring revegetation. Revegetation will involve use of plant materials that meet site-specific revegetation objectives in terms of soil erosion control, soil protection and stabilization, aesthetics, and compatibility with native vegetation adjacent to the disturbance areas. Species included in the seed mixes will 1) be adapted to the site of application, 2) provide immediate soil protection, 3) be sufficiently aggressive to preclude the establishment of invasive weeds (but not so aggressive as to hamper natural succession), 4) not visually contrast with the surrounding undisturbed vegetation, and 5) be commercially available at economically reasonable prices.

5.9.1.4 Unavoidable Adverse Impacts

Loss of terrestrial vegetation and waters of the U.S. will be an unavoidable adverse impact due to the linear nature of the project. However, revegetation will reduce the magnitude of this impact. Active cropland, non-native grassland, forbland and developed land are abundant in the project area and can be readily replaced. Hedgerows, once common in the agricultural landscape, are now a diminishing cover type. Hedgerows require from 15 to 25 years to regrow, so the loss of this habitat will be an unavoidable adverse impact that will extend into the long term.

5.9.1.5 Cumulative Impacts

Vegetation along the project corridor is not pristine; the degree of nativeness and quality of vegetation varies, with natural areas having higher quality. The reduction in native vegetation communities will be minimal compared to historic losses on a local or regional scale. However, because of the extensive historic losses and the relative importance of railroad rights-of-way as refuge for habitat-specific species, additional conversion of upland forest, savanna, remnant prairie, and wetland communities has an additive effect greater than the actual impact.

5.9.1.6 Irreversible and Irretrievable Commitment of Resources

Although it is technically feasible to remove a railroad embankment and restore the landscape, one must assume that the utility of the project right-of-way will warrant its indefinite maintenance and operation to serve the transportation need. Construction of the proposed project will necessarily involve the clearing of terrestrial vegetation and placing fill within the right-of-way. The loss of agricultural crops, urban, disturbed land, and non-prairie grassland communities will be retrievable as these areas are readily replaceable. Impacts to high quality remnant prairie communities will be irreversible. The loss of woody vegetation, particularly mature trees and large shrubs, will be irreversible in a reasonable time-frame as the successional process requires from 15 to 25 years for the development and growth of hedgerow woody species and from 15 to 150 years for forested communities to reach a level as areas that will be removed during construction. Also, the restored habitat is often less diverse than similar natural communities.

5.9.2 Native Vegetation

5.9.2.1 Impact Assessment Methodology

Quantitative evaluations of native vegetation resources potentially affected by the proposed alternative alignments were derived through preparation of 1:2400 resources mapping. Native vegetation communities were identified on these maps using field notes and aerial photograph interpretation. Native vegetation impacts were determined following an environmentally conservative approach wherein a worst case area of impact was used. Direct impacts to native vegetation will come from three types of activities: construction, operation, and maintenance.

Impacts caused by construction activity will depend on the type of proposed construction and existing track conditions at the specific location. Where double track or sidings will be placed on an existing double-wide base with only a single track present, the impact evaluation used the assumption of a six-meter (20-foot) wide disturbance zone extending from the edge of track. Where new track will be placed on an existing single-

wide base, the assumption of a 20-meter (65-foot) wide disturbance area was used. Actual impacts within this disturbance zone are unlikely to affect the entire area as construction of new track will be done from the existing track to the maximum degree possible. Where construction of new service roads are proposed, an impact zone 15 meters (50 feet) wide was assumed extending beyond the edge of the right-of-way. Impacts to grade separation and station areas were based on the area of construction, assuming a 100 percent impact within that zone. The dimensions of the area of construction varied with each grade separation and station area.

5.9.2.2 Direct and Indirect Impacts

While certain site-specific native vegetation impacts will be associated with individual alternative alignments, some effects and considerations will be common to all alignments. For the most part, vegetation impacts will be restricted to existing (or new) railroad right-of-way. The primary effect on vegetation resources will be due to project construction; minimal effect will occur due to project operation and maintenance (e.g., changes in the number of trains operating, train velocity, cleaning of tracks, herbicide management of vegetation, etc.).

Direct impacts will include short-term and long-term losses of native vegetation through clearing, excavating, filling, and regrading of the improved railroad base, grade separations, and frontage/service roads. BMPs to reduce impacts from vegetation clearing will include minimizing the zones of construction and revegetating/mulching areas disturbed.

Indirect adverse impacts will include the short-term and long-term increased potential for weed invasion, establishment, and expansion; reduction in plant photosynthetic capacity due to coverage by fugitive dust; exposure of soils to accelerated erosion; shifts in species composition and/or changes in vegetative density away from a more desirable condition (e.g., native communities); and a loss of natural biodiversity. Construction activities and increased disturbance could introduce and provide conditions conducive to the spread of non-conservative or weedy plants in the railroad corridor. Where prairie is not well established or is disturbed by construction, weeds out-compete the more desirable species.

Fugitive dust generated during project construction and operation could adversely affect vegetation due to the reduction in photosynthetic capacity of dust-covered leaves. Although such deposition could have adverse effects, the magnitude of such impact will likely be minimal since wind and rain remove dust on leaves, a relatively small area in close proximity to the dust source will be affected, and fugitive dust control will be implemented as part of BMP for construction operations.

Currently, maintenance activities along the existing tracks consist of applying herbicides and the cutting of vegetation within the right-of-way (approximately 15 meters/50 feet from the center line of the track). It is anticipated that no change will occur in the type and frequency of maintenance activities as a result of implementing high-speed rail service. Currently, high quality vegetation communities exist and survive successfully along the existing railroad tracks. Hence, it is likely that these existing prairie communities, if not impacted by construction, will not be further impacted by future maintenance.

No-Build Alternative: Under the No-Build alternative, there will be no direct removal of native vegetation within or adjacent to the right-of-way. Native vegetation within the right-of-way will be allowed to exist, subject only to standard mowing, clearing and herbicide treatment consistent with current right-of-way management. Native prairie remnants will remain unprotected.

High-Speed Rail Alternative:

IC/UP Alignment. A total of 14 native prairie remnants encompassing 3.33 hectares (8.22 acres) were identified along the IC/UP alignment. A total of 1.59 hectares (3.93 acres) will be removed for construction (Table 5.9-2). This alignment will impact three of five grade C+ or higher native prairie remnants in the project area, two grade B prairies and one C+ prairie. Total impacts to grade C+ or higher prairies is 0.64 hectares (1.58 acres) (Table 5.9-3), with 0.61 hectares (1.51 acres) of grade B prairies impacted and 0.03 hectares (0.07 acres) of grade C+ impacted. Overall, 0.15 hectares (0.38 acres) of high quality prairie (FQI > 35.00) will be affected. Within this alignment, 0.15 hectares (0.38 acres) of impact to grade C+ or higher prairies are attributed to double track, and 0.49 hectares (1.20 acres) are attributed to freight siding.

Table 5.9-2
SUMMARY OF IMPACTS TO ALL PRAIRIE REMNANTS

Alignment	No. of A/C+ Prairie Remnants	Total Prairie Remnants	Existing A/C+ Prairie hect. (acres) Remnants	Total Existing Prairie hect. (acres) Remnants	Impacted A/C+ Prairie hect. (acres) Remnants	Total Impacts to all Prairie hect. (acres) Remnants
IC/UP	5	14	2.03 (5.01)	3.33 (8.22)	0.64 (1.58)	1.59 (3.93)
NS	30	80	14.94 (36.91)	25.03 (61.82)	5.85 (14.45)	7.46 (18.42)
Rock Island	5	14	2.03 (5.01)	3.33 (8.22)	0.64 (1.58)	1.59 (3.93)

Source: Planning Resources Inc., August 1999.

Norfolk Southern Alignment. A total of 80 native prairie remnants encompassing 25.03 hectares (61.82 acres) were identified along the Norfolk Southern alignment. A total of 7.46 hectares (18.42 acres) will be removed for construction. This alignment will affect 16 of 30 grade C+ or higher native prairie remnants. These 30 native prairies are comprised of two grade A, three grade B+, 11 grade B,

Table 5.9-3
IMPACTS TO GRADE C+ OR HIGHER NATIVE PRAIRIE REMNANTS BY ALIGNMENT

Impacts to Native Prairie Remnants – hectares (acres)						
Alignment	**A**	**B+**	**B**	**B-**	**C+**	**Total**
IC/UP	0.00 (0.00)	0.00 (0.00)	0.61 (1.51)	0.00 (0.00)	0.03 (0.07)	0.64 (1.58)
NS	0.06 (0.16)	0.14 (0.35)	3.18 (7.86)	1.75 (4.33)	0.71 (1.75)	5.85 (14.45)
Rock Island	0.00 (0.00)	0.00 (0.00)	0.61 (1.51)	0.00 (0.00)	0.03 (0.07)	0.64 (1.58)

Source: Planning Resources Inc., August 1999.

six grade B-, and eight grade C+. One of the two grade A prairies will be impacted for a loss of 0.06 hectares (0.16 acres). Two of the three grade B+ prairies will be affected for a loss of 0.14 hectares (0.35 acres). Six of the eleven grade B prairies will be impacted for a loss of 3.18 hectares (7.86 acres). Three of the six grade B- prairies will be impacted for a loss of 1.75 hectares (4.33 acres). Four of the eight grade C+ prairies will be impacted for a loss of 0.71 hectares (1.75 acres). Overall, 0.35 hectares (0.87 acres) of high quality native prairie remnants (FQI > 35.00) will be impacted and 2.30 hectares (5.68 acres) of prairies with FQI's between 30.00 and 34.99 will be impacted. Within this alignment, 0.63 hectares (1.56 acres) of impact to grade C+ or higher prairies are attributed to double track, 4.49 hectares (11.10 acres) to freight siding, and 0.72 hectares (1.79 acres) to service roads, for a total of 5.85 hectares (14.45 acres).

Rock Island District Alignment. The Rock Island District alignment shares the same 14 native prairie remnants with the IC/UP. Impacts to native vegetation from this alignment will be the same as the impacts from the IC/UP alignment.

Comparison of Alternative Alignments. For all HSR alternative alignments, the direct impacts to native prairie remnant communities include removal of vegetation and shifts in vegetation community composition. Impacts that could affect other resources include soil erosion and sedimentation, reduction in wildlife habitat, and introduction of noxious and undesirable weedy species. The duration and severity of impacts to vegetation will depend on the degree of disturbance, the success of mitigation measures, and the time required for the revegetation process to adequately revegetate disturbances.

The alignments with the least impact on native prairie communities are the IC/UP and Rock Island District (1.59 hectares/3.93 acres). The Norfolk Southern alignment has the greatest impact on prairies (7.46 hectares/18.42 acres).

5.9.2.3 Cumulative Impacts

Cumulative impacts are those impacts that have contributed to prairie loss in the project area in the past, are contributing in the present, and may contribute in the reasonably foreseeable future. Ideally, a cumulative impact analysis of prairie would be based on biological boundaries rather than artificial boundaries such as counties or states. However, data for each drainage basin is not available, and information was not consistently available by county.

The majority of the vegetation along the project corridor is not high quality; the degree of nativeness and quality of vegetation varies, with natural areas such as prairie having the highest quality. Before settlement, approximately half of Illinois supported prairie (Neely and Heister, 1987). The state has an estimated 930 hectares (2,300 acres) of prairie that remains relatively undisturbed, such as within cemeteries, forest preserves, and railroad rights-of-way. Of this acreage, less than 530 hectares (1,300 acres) is high quality prairie (Runkel and Roosa, 1989). The majority of the loss occurred during conversion to agriculture in the late 1800s and up to the mid-1900s. Current and predicted future losses occur mostly from industry and residential development.

This cumulative impact assessment assumes that prairie losses in the immediate future will reflect similar trends to losses today. Losses may be countered by actions to preserve existing prairies and restore degraded prairies.

Historic losses of prairie have been extensive. This increases the relative importance of remaining areas of prairie. Because of the historic losses and the relative importance of remaining prairies, impacts from this project have an additive effect greater than the actual impact. However, with mitigation of C+ and higher quality prairie areas in the counties in which impacts occur, the proposed project is not anticipated to add to the cumulative loss of prairie, particularly of high quality prairie.

5.9.2.4 Mitigation

The design and development of this project has and will continue to follow a three step impact mitigation process prioritized as follows: 1) impact avoidance; 2) impact minimization; and 3) compensation including repair, rehabilitation, and restoration of affected areas; preservation of existing prairies; and replacement of affected prairie areas in kind.

Prairie Impact Avoidance:

Given the linear nature of the project, the ability to avoid prairie areas by relocating the project footprint is limited. Avoidance will be maximized by 1) using the existing railroad embankment as the base for new track; 2) limiting clearing activities to only those areas required for actual construction; and 3) performing track-side work from the existing railroad embankment. Where the right-of-way must be used for access, prairie areas will be avoided.

Prairie Impact Minimization:

Where avoidance is not possible, the area of disturbance (direct and indirect, temporary and permanent) will be minimized. Impact minimization measures will use the best technology currently available. Such practices include the following elements, which will be incorporated into the mitigation program:

a. During the final design phase and as part of the process for developing optimal mitigation, a site-specific evaluation will be made of each prairie affected by project activities. The evaluation will focus on 1) identifying optimal locations for placing construction fences and erosion and siltation controls, and 2) identifying additional measures to avoid impacts to prairies with grades C+ and higher and/or prairies that are particularly difficult to replace (e.g., dolomitic prairie).

b. Prairie sites will be included in the erosion and sediment control plan prepared for the project. The zones of filling and/or grading will be accounted for and appropriate best management practices will be designed to protect the sites. Prior to commencement of construction activities, erosion control fencing will be placed at the limits of construction. Zones of fill, grading, compaction or equipment movement will be restricted to areas outside the protective fencing. Impacts from silt and sedimentation will be minimized through adherence to erosion control measures presented in IDOT's Bureaus of Construction and Design and Environment Policy and Procedure Memorandum dated September 15, 1998.

c. All solid waste material, including cleared vegetation, will be disposed in approved upland areas or licensed solid waste disposal sites, in accordance with state and federal regulations.

d. The day-to-day enforcement of prairie mitigation provisions will be provided by experienced resident professional engineers.

e. Per CEQ policy, restoring and enhancing environmental quality is proposed for all impact areas (40 CFR 1500.2, 1502.14, and 1502.16). Disturbed areas not occupied by project facilities will be promptly revegetated and stabilized with mulch. Plants used for revegetation will: 1) be adapted to the site of application; 2) provide immediate soil protection; 3) be sufficiently aggressive to preclude the establishment of invasive weeds (but not so aggressive as to hamper natural succession); and 4) be commercially available at economically reasonable prices.

Compensation:

In addition to these design and construction actions to maximize avoidance and impact minimization of remnant grade C+ through A prairies, during final site design, a conceptual prairie mitigation plan will be prepared. This document will incorporate practicable measures to minimize harm and compensate for impacts to high quality prairie areas and identify site-specific locations for compensating prairie impacts. The following measures will be incorporated:

a. A compensatory mitigation prairie site will be located near the site of impact.

b. Compensatory mitigation will utilize the Key to Restoration Options prepared by Packard and Mutel (1997). Restoration options likely to be implemented include options F through J. These are as follows: option F (prairie management), option G1 (prairie restoration through interseeding), option G2 (prairie maintenance), option H1 (restoring prairie conservatives in an old field), option H2 (restoring prairie in an old field), option I1 (restoring prairie on bare soil), option I2 (restoring prairie conservatives on bare soil), and option J (restoring prairie on stable soil).

c. Unless a higher ratio is required due to presence of high quality wetland flora, etc., compensation for direct adverse impacts (temporary and permanent) to prairies of grade C+ and higher will occur at a 1:1 ratio. Further, compensation will occur in-kind (i.e., wet prairie for wet prairie, mesic prairie, sand prairie, dolomitic prairie, etc.).

d. Following compensation, the total amount of prairie will not be reduced below the total prairie amounts identified in Table 5.9-2. Also, the proportion of each prairie grade will shift toward the higher grades or at least be the same as the existing amounts.

e. Seed and/or pads of sod will be collected from affected prairies prior to earth disturbance. This material will be stored in an appropriate manner for subsequent use to create new prairie communities and/or enhance low grade prairies.

f. If seed is not available from the unaffected portion of the prairie or immediately adjacent prairie, seed will be obtained from within 240 kilometers (150 miles) of the impact site.

g. Where the impact is less than or equal to 25 percent of a prairie, reseeding of the disturbed area with native plants will occur, followed by management of the entire prairie.

h. Where the impact affects more than 25 percent of a prairie, a new prairie area will be created or a lower-grade prairie not affected by the project will be managed to produce a comparable (or better) prairie grade.

Monitoring and Management. Monitoring will occur for each created or enhanced prairie area of 0.10 hectares (0.25 acres) or greater as well as all grade B+ and grade A prairies, regardless of size. Monitoring will involve photographic documentation from the same vantage point each year for a three-year period or until 80 percent ground cover by native, perennial prairie plants is achieved (whichever is later). Results of monitoring will be documented in an annual report submitted to IDOT and IDNR. This report will 1) present the floristic quality assessment (FQA) developed from a meander survey of each prairie area, 2) document quantitative FQA results from 0.65 square kilometer (0.25 square mile) quadrats, 3) identify percent ground cover by desirable plants, and 4) specify remedial actions. Further detail on the prairie monitoring program will be developed as part of a prairie mitigation plan prepared following final design.

Management practices for prairie areas will focus on prescribed burn management and removal of invasive plants. Annual monitoring and long-term maintenance will identify whether removal of invasive plants will be performed by manual or chemical methods. The decision will be based on the growth characteristics of the species targeted for removal and the extent of invasion.

For long-term management, interagency agreements will establish cooperative management for each created, preserved, and enhanced prairie. These agreements will allow access to and management of the existing C+ and higher prairie areas within the right-of-way as well as lower grade prairies being managed to improve vegetative quality by IDOT, IDNR, or their designated representative.

5.9.3 Terrestrial Wildlife

5.9.3.1 Impact Assessment Methodology

The analysis of impacts to terrestrial wildlife and aquatic resources is based upon anticipated effects on the relative quality and quantity of habitat. The initial quantification and characterization of habitats available within the project area was based upon resource mapping, aerial photo interpretation and supplemental field verification and inventory. Published accounts of local fish and wildlife utilization were also consulted.

Relative habitat values were established considering resource availability, diversity and interspersion of cover types, replacement times required, level of existing utilization and disturbance, as well as overall size and continuity with other habitat areas. Impacts were quantified based on actual or anticipated direct loss of physical habitat and indirect effects anticipated as a result of standard construction, maintenance and operation procedures.

5.9.3.2 Direct and Indirect Impacts

Railroad site construction along the HSR alternative alignments has the potential to cause adverse impacts on terrestrial wildlife. Some effects and considerations will be common across the alternative alignments. Such effects are discussed below, prior to the description of alignment-specific impacts.

Direct adverse impacts to terrestrial wildlife will occur principally through the removal or significant modification of habitat within or immediately adjacent to existing or proposed railroad right-of-way. This will be most important for cover types that are either relatively uncommon in the project area and/or will have a long replacement time. Active cropland, non-native grassland, disturbed land and urban land are abundant in the project area and also can be readily replaced. Hedgerows, once common in the agricultural landscape, are now a diminishing cover type due to the gradual increase in farm units and the elimination of fence lines. This cover type consisting primarily of shrubs and early successional trees requires from 15 to 25 years to replace, so the loss of this habitat will constitute a long-term impact. From a practical standpoint, the loss of emergent wetland, wet prairie, mesic prairie, upland forest and savanna will constitute a long-term to permanent impact. These cover types are relatively uncommon in the project area. While it is technically feasible to replace these habitats, in reality, the time frame required ranges from five to 150 years and the restored habitat is likely to be less diverse than similar natural communities of the same cover type (adapted from Graber and Graber, 1976).

Indirect wildlife impacts can occur through disruption of secluded areas, through habitat fragmentation, and through severance of wildlife trails. Physical disturbance can occur in the short term such as that associated with construction, or in the long term such as the activities related to facility operation. Operational impacts such as the noise emanating from the passage of trains are already a part of the existing environment along the HSR project area. Wildlife populations that exist along the alignment presumably have adapted to this intrusion. Although the affects on wildlife behavior resulting from the various types and recurrence frequencies of noise are not well known, there is evidence that some species may become acclimated to regular disturbances, such as those that might be experienced in habitats along an active rail line (Adams, 1994). However, increased disruptions during breeding or nesting season could adversely affect wildlife, especially those generated by construction activities. Vos, Ryder and Graul (1985) concluded that Great Blue Herons may habituate to repeated, non-threatening activities, while responding to unexpected disturbances. Similarly, this species was shown to be most responsive to human intrusions early in the breeding season, becoming less likely to leave the nest later in the season when nestlings were older and trees were full of foliage.

Habitat fragmentation occurs when portions of otherwise usable habitat are severed from a larger contiguous system. The results are normally habitat loss and habitat insularization. The habitat value of the severed parcels is greatly reduced by the isolation of the parcel. Progressive fragmentation occurs where habitat is removed from one direction and the usable edge of the habitat is pushed back. This type of impact will be common where clearing will be necessary to add parallel trackage and/or frontage/service and access roads to the railroad facility.

Linear habitat units offer travel corridors for small mammals and facilitate access to food resources and other habitats in adjacent fields. The construction of railroad facilities that sever these corridors can have long-term adverse effects on wildlife.

No-Build Alternative: With this alternative, no direct habitat loss due to project activities will occur to terrestrial wildlife or fish and aquatic resources. Routine maintenance and operation of the existing railroads will continue to have infrequent and short-term disturbance on wildlife and fish habitats. Relatively uncommon and irreplaceable habitats such as wetlands, remnant prairie, and savanna will remain undisturbed. Hedgerow areas also will remain and continue along the successional path. As no railroad improvement will occur under this alternative, the opportunity to more effectively manage wetlands and other waters of the U.S. and their associated aquatic resources will be foregone. Current sedimentation and turbidity in the rivers and streams due to small areas of naturally and poorly vegetated cut and fill slopes will continue.

High-Speed Rail Alternative:

IC/UP Alignment. Table 5.9-1 shows the estimated loss of wildlife habitat by cover type. A total of five hectares (13 acres) of native and non-native grassland and seven hectares (18 acres) of upland forest will be cleared for the construction of this alignment. Approximately three hectares (eight acres) of hedgerow and five hectares (13 acres) of shrubland will be lost. Wetland loss will be approximately six hectares (15 acres). The loss of prairie is most important from a floristic standpoint since this cover type is already a narrow remnant, and its value for prairie species is significantly reduced for area sensitive species such as the Savannah sparrow, bobolink or Eastern meadowlark. However, various species of insects depend on this specific habitat type for feeding and reproduction. The loss of upland forest habitat will constitute progressive habitat fragmentation by moving the forest edge away from the railroad right-of-way.

The IC/UP alignment will clear hedgerow habitat in 9 locations. While linear remnants of hedgerow habitat will remain in many areas, clearing will change the character of this cover type and will reduce its value for wildlife.

Shroeder (1986) correlates avian species diversity with physical characteristics of windbreaks. Reductions in total area, the number of rows, height, canopy closure and diversity of woody plants all were positively correlated with lowered wildlife species diversity. Where hedgerow habitat is cleared, species such as Northern orioles, house wrens, song sparrows, goldfinches and mourning doves will be reduced in numbers.

Mammalian species highly dependent on hedgerow habitat such as the Eastern cottontail, gray squirrel, fox squirrel and white-footed mouse also will be affected. In time, a reduction in the local population of these species will affect predators such as hawks, owls and fox.

Norfolk Southern Alignment. Construction of this alignment will require the clearing of 13 hectares (33 acres) of grassland, and four hectares (nine acres) upland forest. Wetland loss will be approximately five hectares (14 acres). Remnant prairie loss will occur in a linear band along existing track. Thus, wildlife species closely associated with prairie will be minimally affected due to the limited extent of habitat present. A more important impact will result from the loss of approximately four hectares (10 acres) of hedgerow habitat. Most of this loss will occur in the southern 240 kilometers (150 miles) of the proposed facility where this cover type is prominent in an otherwise largely agricultural setting. Small mammals and numerous avian fauna will be affected by the loss of nesting, feeding and cover areas.

Rock Island District Alignment. A total of three hectares (eight acres) of upland forest, five hectares (13 acres) of shrubland and three hectares (seven acres) of hedgerow habitat will be cleared. Wetland loss will be approximately five hectares (12 acres). All other impacts will be similar to those resulting from the IC/UP alignment.

Comparison of Alternative Alignments. The alternative alignment with the least impact to all habitat types will be the Rock Island District. The IC/UP alignment will require the largest habitat loss of upland forested (7 hectares/18 acres). The Norfolk Southern alignment will remove the greatest area of all habitat types with the exception of upland forest habitat.

5.9.3.3 Mitigation Summary

Mitigation for wildlife habitat loss will consist of both minimization of habitat loss as well as active management to encourage the return of desirable habitats. Wetland loss will be compensated through a comprehensive wetland mitigation process as described in Section 5.8.4. Where the loss of remnant prairie habitat is unavoidable, prairie remnants will be inventoried in more detail and the seed bank made available for relocation and use by public agencies for prairie restoration. Hedgerow habitat clearing will be kept to the minimum necessary for construction. In all cases only one side of the railroad embankment will be disturbed. Following construction, right-of-way management will encourage the restoration of woody species.

5.9.3.4 Unavoidable Adverse Impacts

The loss of wildlife habitat will be unavoidable due to the length and linear nature of the project and the limited ability to alter the horizontal geometry of the alternative alignments. Habitat replacement will be addressed through a wetland mitigation program as part of the Section 404 permitting process and by allowing the vegetation within the railroad rights-of-way to reestablish through natural succession. However, the replacement of hedgerow, forest, and wetland habitats will take many years.

Total control of all project-related erosion and sedimentation is unlikely. Therefore, unavoidable sedimentation and erosion could adversely affect fish and aquatic resources. Implementation of best management practices and other mitigation measures defined under Water Resources (Section 5.6) and under Wetlands (Section 5.8) will reduce the potential for unavoidable adverse impacts. Encroachment into wetlands and streams could impact the fish and aquatic resources downstream of disturbances. Aggressive BMPs and mitigation will be implemented to restore disturbances and functional values in locations that contain fish or invertebrates where habitat could not be practicably avoided. Full mitigation of these sensitive areas will be feasible within the railroad corridor. The implementation of mitigation measures will potentially mitigate or reduce the level of impacts under all alternative alignments.

5.9.3.5 Cumulative Impacts

Habitat loss due to the proposed project will be minor compared to historic changes in the landscape. Since the 1850s major losses of forest, wetlands and prairie have taken place in Illinois. Future habitat losses are not likely to be significant as a result of the project since the facility is not likely to significantly induce development.

As indicated in the Water Resources cumulative impacts discussion (Section 5.6.5), most streams crossed by the project are not in pristine condition. This stream quality and condition is reflected in the numbers and types of aquatic inhabitants. With incorporation of BMPs and proposed mitigation measures, impacts to fish and aquatic resources will be minimized.

The cumulative historical loss of wetlands in Illinois since settlement is estimated at 85 percent. The magnitude of such loss and impairment of the functional value of remaining wetlands has been so large that wetland impacts are now regulated. Consequently, the potential loss of waters of the U.S. (or functional value impairment) caused by the implementation of this project, as well as by other past, present, and reasonably foreseeable potential projects in the area, will add to the cumulative loss of wetlands. However, implementation of the Section 404 permit process, including maximum wetlands avoidance and effective impact minimization, will reduce the potential for cumulative impacts.

5.9.3.6 Irreversible and Irretrievable Commitment of Resources

Wetlands lost due to the project will be replaced, albeit in a different location and over a five to 30 year time span depending on the type of community. As the right-of-way is allowed to revegetate, hedgerow and grassland habitats will reestablish themselves over periods of 15 to 25 years and two to three years, respectively. Other habitats will be irretrievably lost in those areas where the rail embankment is widened for additional tracks or access roads and grade crossings are constructed.

Temporary impacts to aquatic habitat from expansion of existing bridge structures will be reversible in a relatively short-term.

5.9.4 Threatened and Endangered Species

5.9.4.1 Impact Assessment Methodology

Evaluations of potential impacts to threatened and endangered species were conducted by correlating available information on species distribution and habitat preferences, with habitat availability. Where specific habitats or plant communities were identified in association with protected species, potential impacts were quantified through relative loss of habitat. Impacts to vegetation or cover types were determined following an environmentally conservative approach wherein a worst case area of impact was used.

Impacts caused by construction activity will depend on the type of proposed construction and existing track conditions at the specific location. Where double track or sidings will be placed on an existing double-wide base with only a single track present, the impact evaluation used the assumption of a six-meter (20-foot) wide disturbance zone extending from the existing edge of track. Where new track will be placed on an existing single-wide base, the assumption of a 20-meter (65-foot) wide disturbance area was used. Actual impacts within this disturbance zone are unlikely to affect the entire area as construction of new track will be done from the existing track to the maximum degree possible. Where construction of new service roads are proposed, an impact zone 15 meters (50 feet) wide was assumed extending beyond the edge of the right-of-way. Impacts to grade separation and station areas were based on the area of construction, assuming a 100 percent impact within that zone. The dimensions of the area of construction varied with each grade separation and station area.

5.9.4.2 Direct and Indirect Impacts

Because of the development history of existing railroad rights-of-way, the project area holds valuable natural resources not found in the otherwise disturbed surrounding landscape. Native prairie is extremely rare in Illinois and offers some of the last remaining habitat available for many protected plants and animals. Even though many of the prairie remnants are partially degraded, they may be regionally significant in representing some of the last remaining fragments of this native ecosystem. Many protected plant and animal species also are associated with wetland habitats. This habitat has been significantly depleted in Illinois, and with it organisms that depend on it for all or part of their life stages. Although the proposed improvements for the HSR alternative are generally located within or adjacent to the existing right-of-way, the proposed project, regardless of alignment, will require the loss of some wetland habitat for implementation.

Direct adverse impacts to protected plant and animal species can occur due to habitat loss or direct removal through vegetative clearing and earth-moving activities. Indirect impacts may result from construction disturbances during sensitive breeding periods, or through on-going maintenance activities such as the mechanical or chemical removal of woody species. For all project alternative alignments, total avoidance of suitable habitats will be difficult and/or infeasible because of the linear nature of the project and the lack of ability to shift alignments following existing rail lines. Opportunities to avoid impacts rest primarily in the HSR alternative's ability to limit construction areas and/or shift the location of facility improvements.

5.9.4.3 Species with No Habitat in Construction Areas

Tables 2.9-4 and 2.9-5 list threatened and endangered species identified by the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources as potentially occurring in the project area. For the following species no habitat is available within the areas of proposed construction.

The **Decurrent false aster** (*Boltonia decurrens*) is listed as Federally and State Threatened. This species has been found in St. Clair and Madison counties, generally in disturbed alluvial soils associated with the Mississippi River floodplain. No floodplain or wetland habitat will be affected south of Jersey County.

The **Least Tern** (*Sterna antillarum*) is listed as Federally and State Endangered. It is associated with large rivers, nesting on sandbars in shallow depressions. No new bridges will be constructed across large rivers.

The **Gray Bat** (*Myotis grisescens*) is listed as Federally and State Endangered. It nests in caves and feeds over rivers and reservoirs adjacent to forested habitat. Cave habitat is not present in or adjacent to the railroad right-of-way.

The **Pallid Sturgeon** (*Scaphirhynchus albus*) is listed as Federally and State Endangered. Potential habitat exists for this species in the Mississippi River near St. Louis. No construction will occur in this area.

The **Illinois cave amphipod** (*Gammarus acherondytes*) is listed as Federally and State Endangered. This species inhabits karst caves and associated subterranean streams. Karst habitat is not present immediately adjacent to the railroad right-of-way.

The **Bald Eagle** (*Haliaeetus leucocephalus*) is listed as Federally and State Threatened. The Bald Eagle breeds and winters along major rivers and large reservoirs, roosting in old trees with high branches. Large river and reservoir habitat is limited in the project area to the Des Plaines, Kankakee, and Mississippi Rivers. No roosting trees were observed during the avian survey conducted for this project.

5.9.4.4 Impacts

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

High-Speed Rail Alternative:

IC/UP Alignment.

Federally Endangered Plant Species. The Federally and state endangered **leafy prairie clover** (*Petalostemum foliosum*) occurs in mesic dolomitic prairie and has been recorded in three counties in the project area. Field surveys within the project area did not find this species, however dolomitic prairie occurs along the alignment. Dolomitic prairie areas at MP 23.50 and 26.50 are highly degraded and are not likely to support this species. The IDNR has noted the presence of leafy prairie clover between MP 29.00 to 29.70. Field surveys indicated that prairie areas at MP 27.25 and 29.00 have potential habitat but did not reveal this species in current surveys. No prairie loss will occur in any of these areas. Therefore, no impact is anticipated from this alignment.

Federally Endangered Animal Species. The Federally and state endangered **Hine's emerald dragonfly** (*Somatochlora hineana*) also has been located in the general vicinity of the northern section of this alignment in the Des Plaines River valley near Lemont. Detailed studies did not locate the larvae of this species, but adult dragonflies were documented on the alignment near New Avenue and Long Run Seep (MP 30.10). During the period studied, ten adult *S. hineana* were documented flying between 0 to 4.6 meters (0 to 15 feet) over the railroad tracks.

No breeding habitat will be taken by this alignment. Those adults observed in the project area were exhibiting breeding behavior. Therefore, the only potential impact of the project on this species will be through collision with trains or through disrupted movement due to train traffic. The importance of increased train/dragonfly collisions on the continued health of *S. hineana* population will depend, in part, on the actual mortality level versus population size. Studies conducted to date have documented that individual dragonflies do cross the tracks, but their relative numbers and likely exposure to collisions is not known. The size of the local population is not known at this time, nor is it known whether the documented crossings are of single individuals or multiple crossings by fewer individuals.

Individual dragonflies do appear to attempt to cross the tracks while trains are present. However, the impact of disturbed or disrupted travel on individuals or the overall population cannot be assessed based on research conducted to date.

Pending the availability of additional research data, relative impact to *S. hineana* can best be assessed based on the habitat's additional exposure to train activity. Adult dragonflies are present in the area beginning as early as June and continuing through September of each year. They are most active during daylight hours, with peak activity typically between 9:00 AM and 2:00 PM.

Currently 20 trains per day pass through this section of the alignment, eight freight, six Metra, and six Amtrak. With the project, an additional ten passenger trains per day will pass through this area, eight during daylight hours (i.e., 6:30 AM to 8:30 PM), but only one additional between 9:00 AM and 2:00 PM, the peak period of activity. Based on this analysis, it is unlikely that this alignment will jeopardize the continued existence of this species.

The **Indiana bat** (*Myotis sodalis*) winters in colonies in caves and mines. In Illinois there are three wintering colonies. Summer habitat includes woodlands, especially riparian areas with mature, dead trees with exfoliated bark. Roosting sites may be used by pregnant and lactating bats, which frequently utilize tree

cavities and loose bark on living trees. Within the project area, this species has recent records in Macoupin County and historic records in Cook, Sangamon and Madison Counties. Although no habitat exists along this alignment for *M. sodalis* hibernation, potential roosting habitat occurs in several areas along the IC/UP alignment. The construction of a pedestrian grade separation at MP 33.45 in Will County will remove 0.23 hectares (0.57 acres) of mature upland forest. This area includes many mature and/or dead trees and lies along a small creek. Double track will be constructed in the area of MP 209.00 in Macoupin County. Here, woodland habitat will be removed in an area of open water surrounded by floodplain forest with mature trees.

Subsequent investigation of these sites will be conducted to assess the likelihood of the Indiana bat utilizing the habitat. If it is determined that Indiana bats roost in the area, then the scheduling of any construction in these areas would be timed to avoid disturbance during nesting and rearing.

Federally Threatened Plant Species. Also endangered in the state of Illinois, the **prairie white fringed orchid** (*Platanthera leucophaea*) is a tuberous perennial orchid growing to one meter (three feet) high. It was formerly a characteristic plant of wet to mesic prairies in Illinois but is now rare and local, known almost exclusively from northeastern Illinois. While the IC/UP alignment will require the loss of 1.59 hectares (3.93 acres) of native prairie and 0.53 hectares (1.30 acres) of wet meadow habitat, the presence of *Platanthera leucophaea* has not been recorded along the alignment. Three season plant surveys did not find this species within the areas of proposed construction. The likelihood of impact to this species is therefore low.

State Endangered Plant Species. State endangered plant species such as the **large ground plum** (*Astragalus crassicarpus*), **prairie trout-lily** (*Erythronium mesochoreum*), **pink milkwort** (*Polygala incarnata*), **royal catchfly** (*Silene regia*), **Eastern blue-eyed grass** (*Sisyrinchium atlanticum*), and **prairie spiderwort** (*Tradescantia bracteata*) are found in dry to mesic prairie. None of these species were documented in field surveys of the project area. However, remnant prairies within the right-of-way of this alignment offer potential habitat. Of the 3.33 hectares (8.22 acres) of prairie mapped within the IC/UP alignment, approximately 1.59 hectares (3.93 acres) will be removed for the construction of grade separations, freight sidings, double track and/or service roads. The IDNR has noted the possible presence of the royal catchfly in the section of the alignment near MP 267.80. The service road proposed for this section will be outside of the current right-of-way and therefore will not involve the loss of prairie habitat. The IDNR also noted the presence of prairie trout-lily at MP 227.30. The service road proposed in this area will be constructed from MP 227.30 to MP 227.50 and will be outside of the current right-of-way and should not impact prairie habitat. Based on those determinations, these species will not be adversely affected by this alignment.

The state endangered **quillwort** (*Isoetes butleri*) is known to prefer seasonally wet dolomitic prairie. This type of habitat was mapped and surveyed along the IC/UP alignment at MP 29.00. A proposed grade separation at this location will require the removal of 0.55 hectares (1.37 acres) of wetland. No individual specimens were found. Therefore, no impact is anticipated.

Broomrape (*Orobanche ludoviciana*) is endangered in the state of Illinois. It prefers dry sand prairies and alluvial floodplains where it is parasitic on the roots of various species of Asteraceae, as well as giant ragweed. This species is known historically from Logan County. The IC/UP alignment will require the removal of 0.03 hectares (0.07 acres) of grade C+ prairie remnant in this county at MP 158.50 to MP 168.40 for the provision of a freight siding. Plant surveys in the project area did not document this species. Therefore, no impact is anticipated.

The **little green sedge** (*Carex viridula*) prefers marl flats and disturbed calcareous sites and has been found in Cook County in the project corridor. Potential habitats along the IC/UP alignment, including sections between MP 23.50 and MP 33.45, were surveyed for this species. No occurrences were documented.

Wild hyacinth (*Camassia angusta*) is endangered in Illinois and has been known to occur in Macon County (outside of the project area) where it prefers prairies and moist woods. It could occur in degraded prairie habitats in central Illinois. Approximately 0.35 hectares (0.87 acres) of prairie habitat will be removed for construction of the IC/UP alignment through McLean, Logan and Sangamon Counties. *C. angusta* was not located in plant surveys of the project area. Therefore, no impact is anticipated.

The state endangered **grass pink orchid** (*Calopogon tuberosus*) has a broad range of habitats, occurring in northeastern Illinois most often in bogs and acid soils. It also has been documented in fens and mesic and wet-mesic sand prairies. It has been reported in the Hitts Siding Prairie now owned by the IDNR. Approximately 0.46 hectares (1.13 acres) of grade B prairie will be lost from the right-of-way on the opposite side of the Hitts Siding Prairie under the IC/UP alignment. This species was not found in the area of proposed construction.

State Endangered Animal Species. Potential habitat for the **red-shouldered hawk** (*Buteo lineatus*) includes riparian forest with large trees for nesting. This type of habitat occurs along the IC/UP alignment at MP 33.45 in Will County and at MP 209.00 in Macoupin County. No forested habitat will be removed in these areas, and no red-shouldered hawks were noted utilizing the right-of-way during field surveys. Therefore, no impact to this species is anticipated.

The state endangered **sharp-shinned hawk** (*Accipiter striatus*) occurs in deciduous and coniferous forests and open woodlands, selecting mature forest near stream habitats for nesting. A detailed survey along the alignment showed limited habitat potential for this species adjacent to the railroad tracks. Therefore, this species will not be adversely affected by this alignment.

Henslow's sparrow (*Ammodrammus henslowii*), the **short-eared owl** (*Asio flammeus*) and **the northern harrier** (*Circus cyaneus*) are listed as endangered in Illinois. These species occur in grasslands and wet meadows, nesting in areas generally greater than 50 hectares (125 acres) in size. The IC/UP alignment will remove approximately 5.37 hectares (13.26 acres) of native and non-native grassland. All habitat loss will be in linear strips along existing railroad rights-of-way and be scattered at 10 locations in the project area. Large grassland areas suitable for nesting will not be affected. Therefore, this alignment will not measurably impact these species.

The **long-eared owl** (*Asio otus*) is generally a migrant in Illinois, roosting in stands of conifers often adjacent to open grasslands for hunting. Field surveys of mixed forest habitats near this alignment indicated that habitat availability within the project area is limited. Therefore, this species will not be impacted by the IC/UP alignment.

The **upland sandpiper** (*Bartramia longicauda*) occurs in grassland, pastures and hay fields often associated with developed and agricultural lands. This type of habitat is available along the IC/UP alignment as well as in many rural areas throughout the corridor. Approximately 34 hectares (84 acres) of native and non-native grassland, pasture and forbland habitat will be removed for this alignment. All habitat loss will be in a linear band within and adjacent to the existing right-of-way.

The **American bittern** (*Botaurus lentiginosus*) prefers wet meadows and emergent wetlands of cattail, bulrushes and sedges for feeding and nesting. Similar habitat is utilized by the least bittern (*Ixobrychus exilis*). Wetland habitat occurs at many locations adjacent to this alignment. Moderate quality habitat for this species occurs between MP 54.00 and MP 57.00. However, no direct habitat loss will occur since the construction of a freight siding in this section will take place on the opposite side of the tracks.

The **snowy egret** (*Egretta thula*) and the **little blue heron** (*Egretta caerulea*) typically nest with other heron in stands of immature trees near shallow waters of marshes, lakes and ponds. No nesting colonies of heron were found in field surveys of this alignment. Thickets of trees and shrubs adjoining marshy habitat between MP 54.00 and MP 57.00 could serve as potential habitat for this species. However, this habitat is on the west side of the tracks, opposite from the construction area. Approximately 4.40 hectares (10.86 acres) of wetland will be removed from this section for the construction of a freight siding. While this wetland could serve as foraging habitat, its loss and replacement through mitigation is not likely to adversely impact the continued existence of this species.

The **black-crowned night heron** (*Nycticorax nycticorax*) is widely adapted to various emergent and forested wetland habitats. Nesting occurs in bottomland forest as well as occasionally in herbaceous marsh habitat. Potential habitat exists between MP 54.00 and MP 57.00 but will not be directly affected by construction. A total of 2.6 hectares (6.4 acres) of floodplain forest habitat will be removed for this alignment. All will be within or immediately adjacent to the railroad right-of-way.

Forster's tern (*Sterna forsteri*) usually prefers marsh habitat bordering large lakes. It nests on high dry areas within the wetlands. This combination of habitat is not available immediately adjacent to the IC/UP alignment. Therefore, no impact is anticipated with this alignment.

The **common barn owl** (*Tyto alba*) is an occasional permanent resident in southern Illinois and has been sighted during breeding season in northeastern counties. It generally nests in silos, steeples, grain elevators, as well as hollow trees. While this species was not found during surveys, moderate nesting habitat, consisting of mature woodlands adjacent to fallow fields, was identified at two locations: between MP 201.70 and MP 202.10 and between MP 227.30 and MP 227.50. Provision of service roads in these areas will require habitat loss.

The **Eastern massasauga** (*Sistrurus catenatus*) occurs in wet prairies, bogs and swamps. This habitat type is available in the project area but is widely distributed. Overall, a total of 5.97 hectares (14.74 acres) of wetland will be removed by this alignment. However, this alignment is not likely to affect the Eastern massasauga due to the limited distribution of known population.

The **Eryngium stem borer** (*Papaipema eryngii*) utilizes the prairie plant rattlesnake master as a host for larval development. Prior to recent surveys the only known populations of this species were in Will and Grundy Counties. Based on 1997 field surveys of proposed construction areas for the HSR alternative, populations of rattlesnake master were identified and located at ten sites along the IC/UP alignment. The presence of the Eryngium stem borer was confirmed at four of these locations along the IC/UP alignment in Will County between MP 54.00 and MP 57.00 and at one location in Grundy County at MP 66.60. The proposed freight siding on the east side of the alignment will impact one of the Will County sites supporting populations of the Eryngium stem borer. A total of 0.46 hectares (1.13 acres) of prairie will be removed at this location. No impact will occur at the Grundy County site.

State Threatened Plant Species. The **slender sandwort** (*Arenaria patula*) is threatened in the state of Illinois and occurs on limestone flats and dolomitic prairies along the Des Plaines River. It is known to occur in the Lemont area. The area south of Romeoville Road at MP 29.00 includes a large expanse of dolomitic wet prairie with scattered drier uplands. Although the proposed grade separation at this location will require the removal of 0.55 hectares (1.37 acres) of wetland, a survey of this location did not find this species.

The **narrow-leaved sundew** (*Drosera intermedia*) is listed as threatened in Illinois. This plant prefers bog habitats with acid soils. It is known from four counties in the project area, but neither this species nor its habitat were found within the project area. Impacts to this species are not anticipated.

The state threatened plant species **Hill's thistle** (*Cirsium hillii*) is found in dry open prairies and the **savanna blazing star** (*Liatris scariosa* var. *nieuwlandii*) and **ear-leaved foxglove** (*Tomanthera auriculata*) are found in prairies and savannas. The IDNR has noted the likelihood of the blazing star between MP 235.60 and 237.40. The service roads proposed for this area will be outside the right-of-way and therefore not require the loss of prairie. The ear-leaved foxglove also has been reported in the Hitts Siding Prairie. This species was not found in surveys along the area between MP 54.00 and MP 57.00. The freight siding proposed for this section will require the removal of 0.46 hectares (1.13 acres) of grade B prairie from the right-of-way on the opposite side of the Hitts Siding Prairie. Therefore, this alternative will not adversely affect these species.

State Threatened Animal Species. The **red-veined leaf hopper** (*Aflexia rubranura*) is listed as threatened in Illinois. This insect occurs in large prairie areas and has an affinity for populations of prairie dropseed (*Sporobolis heterolepis*). No specific studies were undertaken to locate *A. rubranura*. However, field surveys of the IC/UP alignment identified nine locations where populations of prairie dropseed occur. Two of these will be affected by construction of this alignment. Approximately 3.15 hectares (7.79 acres) of prairie or wetland habitat containing prairie dropseed will be removed for this alignment. The potential exists for impact to this species through the removal of habitat.

The **Illinois chorus frog** (*P. streckeri illinoensis*) is listed as threatened in Illinois. It prefers open sandy areas of river lowlands and has been known to be found in the vicinity of the proposed grade separation at Pontoon Road (MP 272.20) in Madison County. John K. Tucker of the Illinois Natural History Survey conducted a survey of this site between February 22, 1998 and March 25, 1998, on seven nights when this species was active at other locations. The Illinois chorus frog was not identified at the subject location. Therefore, it is unlikely that the IC/UP alignment will adversely affect this species.

The **Ottoe skipper** (*Hesperia ottoe*) is a butterfly listed as threatened in Illinois. It is a prairie insect dependent on undisturbed sand prairie habitat. No specific distributional studies of this insect were conducted. The IC/UP alignment is not likely to affect this species because no sand or hill prairies are present in the impact areas along this alignment.

Kirtland's snake (*Clonophis kirtlandii*) occurs in wet meadows, open swamp forests, reservoirs and occasional wet vacant urban areas. Potential habitat may exist within the project area. However, no wetland loss will occur within Sangamon County, its known distribution within the project area.

The **double-crested cormorant** (*Phalacrocorax auritus*) occupies lakes, rivers and open water areas for fishing. It prefers large trees adjacent to open water for nesting. This type of habitat will not be affected by this alignment.

The **veery** (*Catharus fuscescens*) usually occurs in moist deciduous woods with relatively dense understories. It is estimated that at least 20 hectares (50 acres) of habitat is needed to maintain a viable population. Habitat of this type and size is limited in the project area. Field surveys investigated deciduous woodlands along the IC/UP alignment and found all to provide only low habitat potential. In all situations worst case impacts will be limited to vegetation loss in a narrow strip along the existing right-of-way. No forest fragmentation will result from the IC/UP alignment. Potential impacts to the veery will be negligible.

The **loggerhead shrike** (*Lanius ludovicianus*) inhabits open agricultural and grassland areas with hedgerows of osage orange, honey locust and red cedar. Moderate habitat potential occurs at numerous locations along the alignment, including at MP 201.70 and between MP 212.55 and MP 213.10. The Illinois Breeding Bird Atlas has confirmed records of the loggerhead shrike in the vicinity of MP 201.70. The Atlas has no records of the loggerhead shrike near the area between MP 212.55 and MP 213.10. However, the Macoupin County surveys are only 1 to 25 percent complete. The railroad embankment itself may serve as an important habitat element in that it functions as a continuous hedgerow. Approximately 5.38 hectares (13.28 acres) of shrub habitat and 3.36 hectares (8.30 acres) of hedgerow habitat will be removed for construction on the IC/UP alignment. Given the broad habitat available in the project area, it is unlikely that this alignment will adversely affect the continued existence of this species.

The **yellow-crowned night heron** (*Nyctanassa violacea*) nests in bottomland forest with water and shallow marsh near for feeding. Although no heron colonies were found during field studies, potential habitat was identified between MP 54.00 and MP 57.00 near Wilmington. A proposed freight siding in this section will be constructed on the east side of the right-of-way. The construction of this improvement will occur on the opposite side of the potential habitat and, therefore, is not expected to adversely affect this species.

The **pied-billed grebe** (*Podilymbus podiceps*) prefers hemi-marsh and ponds less than seven hectares (17 acres) with dense emergent vegetation. The IC/UP alignment passes many wetland areas with small patches of open water. However, at most this habitat type will be affected peripherally, and no hemi-marsh will be removed.

The **king rail** (*Rallus elegans*) is found in a variety of habitats, including shallow marsh, shrub-carr, swamps, ditches, mudflats and upland agricultural fields. Potential habitat is available in many areas along the IC/UP alignment. Given the extent of habitat available and the relatively small amount of habitat loss expected, the direct impacts to this species will be minimal.

Norfolk Southern Alignment. Impacts associated with the Norfolk Southern alignment would be different than the IC/UP alignment between Chicago and Dwight. South of Dwight (MP 72.85), the potential impacts associated with the two alignments are the same.

Federally Endangered Plant Species. The Federally and state endangered **leafy prairie clover** (*Petalostemum foliosum*) occurs in mesic dolomitic prairie and has been recorded in three counties in the project area. Shallow dolomitic bedrock occurs in several locations in the northern section of the Norfolk Southern alignment. Dolomitic prairie areas at MP 49.75 and MP 52.80 are highly degraded and are not likely to support this species. Field surveys within the project area did not find this species.

Federally Endangered Animal Species. The Federally and state endangered **Hine's emerald dragonfly** (*Somatochlora hineana*) is not known to occur along the Norfolk Southern alignment.

No winter habitat for hibernation for the **Indiana Bat** (*Myotis sodalis*) lies within the area that will be impacted by the Norfolk Southern alignment. Two locations along this alignment have potential to serve as summer roosting habitat for this species. A freight siding is proposed between MP 113.00 and 118.00 between Kankakee and Dwight. At MP 114.56 in Kankakee County the alignment crosses Horse Branch Creek, a perennial stream with mature woodland and some dead trees. The second location with potential habitat lies within a zone of proposed double track at MP 209.00. Here, forest habitat will be removed in an area of open water surrounded by floodplain forest with mature trees. The Indiana bat has been recorded in Macoupin County.

Federally Threatened Plant Species. Also endangered in the state of Illinois, the **prairie white fringed orchid** (*Platanthera leucophaea*) is a tuberous perennial orchid growing to one meter (three feet) high. It was formerly a characteristic plant of wet to mesic prairies in Illinois but is now rare and local, known almost exclusively from northeastern Illinois. While the Norfolk Southern alignment will require the loss of 7.46 hectares (18.42 acres) of native prairie and 0.06 hectares (0.15 acres) of wet meadow habitat, the presence of *Platanthera leucophaea* has not been recorded along the alignment. Three season plant surveys did not find this species within the areas of proposed construction. The likelihood of impact to this species is therefore low.

State Endangered Plant Species. State endangered plant species such as the **large ground plum** (*Astragalus crassicarpus*), **prairie trout-lily** (*Erythronium mesochoreum*), **pink milkwort** (*Polygala incarnata*), **royal catchfly** (*Silene regia*), **Eastern blue-eyed grass** (*Sisyrinchium atlanticum*), and **prairie spiderwort** (*Tradescantia bracteata*) are found in dry to mesic prairie. None of these species were documented in field surveys of the project area. However, remnant prairies within the right-of-way of this alignment offer potential habitat. Of the 25.03 hectares (61.82 acres) of prairie mapped along the Norfolk Southern alignment, approximately 7.46 hectares (18.42 acres) will be removed for the construction of grade separations, freight sidings, double track and/or service roads. The IDNR has noted the possible presence of the royal catchfly in the section of the alignment near MP 267.80. The service road proposed for this section will be outside of the current right-of-way and therefore will not involve the loss of prairie habitat. The IDNR also noted the presence of prairie trout-lily at MP 227.30. The service road proposed in this area will be constructed from MP 227.30 to MP 227.50 and will be outside of the current right-of-way and should not impact prairie habitat. Based on those determinations, these species will not be adversely affected by this alignment.

The state endangered **quillwort** (*Isoetes butleri*) is known to prefer seasonally wet dolomitic prairie. Neither this type of habitat nor this species was found along the Norfolk Southern alignment.

Broomrape (*Orobanche ludoviciana*) is endangered in the state of Illinois. It prefers dry sand prairies and alluvial floodplains where it is parasitic on the roots of various species of Asteraceae, as well as giant

ragweed. This species is known historically from Logan County. The Norfolk Southern alignment will require the removal of 0.03 hectares (0.07 acres) of grade C+ prairie remnant in this county at MP 158.50 to MP 168.40 for provision of a freight siding. Plant surveys in the project area did not document this species. Therefore, no impact is anticipated.

The **little green sedge** (*Carex viridula*) prefers marl flats and disturbed calcareous sites and has been found in Cook County in the project corridor. During the plant surveys, the study team identified *C. viridula* along the right-of-way of the IC mainline at approximately MP 45.55. The population of *C. viridula* was found in a sedge meadow approximately 15 meters (50 feet) east of the existing IC mainline tracks. All improvements in this area will be on the opposite side of the tracks from the location where this species was found. No changes will take place that will adversely affect this population. Other wetlands occur along the alignment between MP 41.00 and MP 55.00 that could provide potential habitat, but plant surveys did not document this species.

Wild hyacinth (*Camassia angusta*) is endangered in Illinois and has been known to occur in Macon County where it prefers prairies and moist woods. It could occur in degraded prairie habitats in central Illinois. Approximately 0.35 hectares (0.87 acres) of prairie habitat will be removed for construction of the Norfolk Southern alignment through McLean, Logan and Sangamon Counties. *C. angusta* was not located in plant surveys of the project area. Therefore, no impact is anticipated.

The state endangered **grass pink orchid** (*Calopogon tuberosus*) has a broad range of habitats, occurring in northeastern Illinois most often in bogs and acid soils. It also has been documented in fens and mesic and wet-mesic sand prairies. While the potential exists for this species to occur in the project area, it was not found in summer surveys of the Norfolk Southern alignment.

State Endangered Animal Species. Potential habitat for the **red-shouldered hawk** (*Buteo lineatus*) includes riparian forest with large trees for nesting. This type of habitat occurs along the Norfolk Southern alignment at MP 114.56 in Kankakee County and at MP 209.00 in Macoupin County. No forested habitat will be removed in these areas, and no red-shouldered hawks were noted utilizing the right-of-way during field surveys. Therefore, no impact to this species is anticipated.

The state endangered **sharp-shinned hawk** (*Accipiter striatus*) occurs in deciduous and coniferous forests and open woodlands, selecting mature forest near stream habitats for nesting. A detailed survey along the alignment showed limited habitat potential for this species adjacent to the railroad tracks. Therefore, this species will not be adversely affected by this alignment.

Henslow's sparrow (*Ammodrammus henslowii*), the **short-eared owl** (*Asio flammeus*) and the **northern harrier** (*Circus cyaneus*) are listed as endangered in Illinois. These species occur in grass lands and wet meadows, nesting in areas generally greater than 50 hectares (125 acres) in size. The Norfolk Southern alignment will remove 13.35 hectares (32.98 acres) of native and non-native grassland. All habitat loss will be in linear strips along existing railroad rights-of-way. Large grassland areas suitable for nesting will not be affected. Therefore, this alignment will not measurably impact these species.

The **long-eared owl** (*Asio otus*) is generally a migrant in Illinois, roosting in stands of conifers often adjacent to open grasslands for hunting. Field surveys of mixed forest habitats near this alignment indicated that habitat availability within the project area is limited. Therefore, this species will not be impacted by the Norfolk Southern alignment.

The **upland sandpiper** (*Bartramia longicauda*) occurs in grassland, pastures and hay fields often associated with developed and agricultural lands. This type of habitat is available along the Norfolk Southern alignment as well as in many rural areas throughout the corridor. Approximately 46 hectares (113 acres) of native and non-native grassland, pasture and forbland habitat will be removed for this alignment. All habitat loss will be in a linear band within and adjacent to the existing right-of-way.

The **American bittern** (*Botaurus lentiginosus*) prefers wet meadows and emergent wetlands of cattail, bulrushes and sedges for feeding and nesting. Similar habitat is utilized by the **least bittern** (*Ixobrychus exilis*). Wetland habitat occurs at many locations adjacent to this alignment. A total of 4.98 hectares (12.31 acres) of emergent wetland will be lost for this alignment. All will be within and adjacent to existing railroad right-of-way.

The **snowy egret** (*Egretta thula*) and the **little blue heron** (*Egretta caerulea*) typically nest with other heron in stands of immature trees near shallow waters of marshes, lakes and ponds. No nesting colonies of heron were found in field surveys of this alignment. While feeding and foraging habitat is available, any loss to this habitat will be replaced.

The **black-crowned night heron** (*Nycticorax nycticorax*) is widely adapted to various emergent and forested wetland habitats. Nesting occurs in bottomland forest as well as occasionally in herbaceous marsh habitat. A total of 3.1 hectares (7.6 acres) of floodplain forest habitat will be removed for this alignment. All will be within or immediately adjacent to the railroad right-of-way.

Forster's tern (*Sterna forsteri*) usually prefers marsh habitat bordering large lakes. It nests on high dry areas within the wetlands. This combination of habitat is not available immediately adjacent to the Norfolk Southern alignment. Therefore, no impact is anticipated with this alignment.

The **common barn owl** (*Tyto alba*) is an occasional permanent resident in southern Illinois and has been sighted during breeding season in northeastern counties. It generally nests in silos, steeples, grain elevators, as well as hollow trees. While this species was not found during surveys, moderate nesting habitat, consisting of mature woodlands adjacent to fallow fields, was identified at two locations: between MP 201.70 and MP 202.10 and between MP 227.30 and MP 227.50. Provision of service roads in these areas will require habitat loss.

The **Eastern massasauga** (*Sistrurus catenatus*) occurs in wet prairies, bogs and swamps. This habitat type is available in project area but is widely distributed. Overall, a total of 5.49 hectares (13.57 acres) of wetland will be removed by this alignment. However, this alignment is not likely to affect the Eastern massasauga due to the limited distribution of known populations.

The **Eryngium stem borer** (*Papaipema eryngii*) utilizes the prairie plant rattlesnake master as a host for larval development. The presence of the Eryngium stem borer was confirmed at one location along the Norfolk Southern alignment between MP 42.75 and MP 43.30. The proposed service road on the west side of the alignment at this location will be constructed outside of the existing right-of-way and will therefore not result in the loss of habitat for this species.

State Threatened Plant Species. The **slender sandwort** (*Arenaria patula*) is threatened in the state of Illinois and occurs on limestone flats and dolomitic prairies along the Des Plaines River. It is known to occur in the Lemont area, outside of the Norfolk Southern alignment project area. Dolomitic outcrops exist at various locations along the Norfolk Southern alignment between MP 41.00 and MP 55.00. Most of these areas are disturbed. A dolomitic prairie was identified at MP 52.80; however, no prairie loss will occur at this location.

The **narrow-leaved sundew** (*Drosera intermedia*) is listed as threatened in Illinois. This plant prefers bog habitats with acid soils. It is known from four counties in the project area, but neither this species nor its habitat were found within the project area. Impacts to this species are not anticipated.

The state threatened plant species **Hill's thistle** (*Cirsium hillii*) is found in dry open prairies and the **savanna blazing star** (*Liatris scariosa* var. *nieuwlandii*) and **ear-leaved foxglove** (*Tomanthera auriculata*) are found in prairies and savannas. The IDNR has noted the likelihood of the blazing star between MP 235.60 and MP 237.40. The service roads proposed for this area will be outside the right-of-way and therefore not require the loss of prairie.

State Threatened Animal Species. The **red-veined leaf hopper** (*Aflexia rubranura*) is listed as threatened in Illinois. This insect occurs in large prairie areas and has an affinity for populations of prairie dropseed (*Sporobolis heterolepis*). No specific studies were undertaken to locate *A. rubranura*. However, field surveys of the Norfolk Southern alignment identified 12 locations where populations of prairie dropseed occur. Six of these will be affected by construction of this alignment. Approximately 2.91 hectares (7.20 acres) of prairie or wetland habitat containing prairie dropseed will be removed for this alignment. The potential exists for impact to this species through the removal of habitat.

The **Illinois chorus frog** (*P. streckeri illinoensis*) is listed as threatened in Illinois. It prefers open sandy areas of river lowlands and has been known to be found in the vicinity of the proposed grade separation at Pontoon Road (MP 272.20) in Madison County. John K. Tucker of the Illinois Natural History Survey conducted a survey of this site between February 22, 1998 and March 25, 1998, on seven nights when this species was active at other locations. The Illinois chorus frog was not identified at the subject location. Therefore, it is unlikely that the Norfolk Southern alignment will adversely affect this species.

The **Ottoe skipper** (*Hesperia ottoe*) is a butterfly listed as threatened in Illinois. It is a prairie insect dependent on undisturbed sand prairie habitat. No specific distributional studies of this insect were conducted. The Norfolk Southern alignment is not likely to affect this species because no sand or hill prairies are present in impact areas along this alignment.

Kirtland's snake (*Clonophis kirtlandii*) occurs in wet meadows, open swamp forests, reservoirs and occasional wet vacant urban areas. Potential habitat may exist within the project area. However, no wetland loss will occur within Sangamon County, its known distribution within the project area.

The **double-crested cormorant** (*Phalacrocorax auritus*) occupies lakes, rivers and open water areas for fishing. It prefers large trees adjacent to open water for nesting. This type of habitat will not be affected by this alignment.

The **veery** (*Catharus fuscescens*) usually occurs in moist deciduous woods with relatively dense understories. It is estimated that at least 20 hectares (50 acres) of habitat is needed to maintain a viable population. Habitat of this type and size is limited in the project area. Field surveys found moderate habitat for the veery at MP 31.40 where a mixture of upland forest and shrub cover lie on the east side of the IC mainline. Other areas along the alignment were investigated and evaluated but were determined to be of low habitat potential. In all situations worst case impacts will be limited to vegetation loss in a narrow strip along the existing right-of-way. No forest fragmentation will result from the Norfolk Southern alignment. Potential impacts to the veery will be negligible.

The **loggerhead shrike** (*Lanius ludovicianus*) inhabits open agricultural and grassland areas with hedgerows of osage orange, honey locust and red cedar. Moderate habitat potential occurs at numerous locations along the alignment, including at MP 201.70 and between MP 212.55 and MP 213.10. The Illinois Breeding Bird Atlas has confirmed records of the loggerhead shrike in the vicinity of MP 201.70. The Atlas has no records of the loggerhead shrike near the area between MP 212.55 and MP 213.10. However, the Macoupin County surveys are only 1 to 25 percent complete. The railroad embankment itself may serve as an important habitat element in that it functions as a continuous hedgerow. Approximately 5.42 hectares (13.38 acres) of shrub habitat and 3.89 hectares (9.60 acres) of hedgerow habitat will be removed for construction on the Norfolk Southern alignment. Given the broad habitat available in the project area, it is unlikely that this alignment will adversely affect the continued existence of this species.

The **yellow-crowned night heron** (*Nyctanassa violacea*) nests in bottomland forest with water and shallow marsh near for feeding. No heron nests or rookeries were found during field studies. Field surveys rated all areas of the Norfolk Southern alignment as low to none with respect to potential habitat for this species.

The **pied-billed grebe** (*Podilymbus podiceps*) prefers hemi-marsh and ponds less than 7 hectares (17 acres) with dense emergent vegetation. The Norfolk Southern alignment passes many wetland areas with small patches of open water. However, at most this habitat type will be affected peripherally, and no hemi-marsh will be removed.

The **king rail** (*Rallus elegans*) is found in a variety of habitats, including shallow marsh, shrub-carr, swamps, ditches, mudflats and upland agricultural fields. Potential habitat is available in many areas along the Norfolk Southern alignment. Given the extent of habitat available and the relatively small amount of habitat loss expected, the direct impacts to this species will be minimal.

Rock Island District Alignment. Impacts associated with the Rock Island District alignment would be less severe than with the IC/UP alignment between Chicago and Joliet and identical to the IC/UP alignment between Joliet and St. Louis.

Federally Endangered Plant Species. No impacts are expected to occur to the Federally and state endangered **leafy prairie clover** (*Petalostemum foliosum*). All potential habitat for this species occurs north of Joliet in the mesic dolomitic prairies of the Des Plaines River valley; no construction projects are proposed for the Rock Island District alignment north of Joliet.

Federally Endangered Animal Species. The Federally and state endangered **Hine's emerald dragonfly** (*Somatochlora hineana*) also has been located in the northern section of the IC/UP alignment in the Des Plaines River valley near Lemont. The Rock Island District alignment does not pass through this area. Consequently, this alternative will not affect the Hine's emerald dragonfly.

No winter habitat for the **Indiana bat** (*Myotis sodalis*) lies within the area affected by the Rock Island District alignment. However, double track will be constructed in the area of MP 209.00 in Macoupin County. Here, forest habitat will be removed in an area of open water surrounded by floodplain forest with mature trees. The Indiana bat has been recorded in Macoupin County; this habitat could serve as summer roosting area for this species.

Federally Threatened Plant Species. Also endangered in the state of Illinois, the **prairie white fringed orchid** (*Platanthera leucophaea*) is a tuberous perennial orchid growing to one meter (three feet) high. It was formerly a characteristic plant of wet to mesic prairies in Illinois but is now rare and local, known almost exclusively from northeastern Illinois. The loss of prairie and wet meadow habitat with the Rock Island District alignment will be the same as with the IC/UP – 1.59 hectares (3.93 acres) and 0.53 hectares (1.30 acres), respectively. However, the presence of *Platanthera leucophaea* has not been recorded along the alignment, and three season plant surveys did not find this species within the areas of proposed construction. The likelihood of impact to this species is therefore low.

State Endangered Plant Species. State endangered plant species such as the **large ground plum** (*Astragalus crassicarpus*), **prairie trout-lily** (*Erythronium mesochoreum*), **pink milkwort** (*Polygala incarnata*), **royal catchfly** (*Silene regia*), **Eastern blue-eyed grass** (*Sisyrinchium atlanticum*), and **prairie spiderwort** (*Tradescantia bracteata*) are found in dry to mesic prairie. Nose of these species were documented in field surveys of the project area. However, remnant prairies within the right-of-way of this alignment offer potential habitat. Of the 3.33 hectares (8.22 acres) of prairie mapped within the Rock Island District alignment, approximately 1.59 hectares (3.93 acres) will be removed for the construction of grade separations, freight sidings, double track and/or service roads. The IDNR has noted the possible presence of the royal catchfly in the section of the alignment near MP 267.80. The service road proposed for this section will be outside of the current right-of-way and therefore will not involve the loss of prairie habitat. The IDNR also noted the presence of prairie trout-lily at MP 227.30. The service road proposed in this area will be constructed from MP 227.30 to MP 227.50 and will be outside of the current right-of-way and should not impact prairie habitat. Based on those determinations, these species will not be adversely affected by this alignment

The state endangered **quillwort** (*Isoetes butleri*) is known to prefer seasonally wet dolomitic prairie. This type of habitat is located north of Joliet in the Des Plaines River valley. The Rock Island District alignment will not affect this area or potential habitat for *I. butleri*.

Broomrape (*Orobanche ludoviciana*) is endangered in the state of Illinois. It prefers dry sand prairies and alluvial floodplains where it is parasitic on the roots of various species of Asteraceae, as well as giant ragweed. This species is known historically from Logan County. The Rock Island District alignment will require the removal of 0.03 hectares (0.07 acres) of grade C+ prairie remnant in this county at MP 158.50 to MP 168.40 for provision of a freight siding. Plant surveys in the project area did not document this species. Therefore, no impact is anticipated.

The **little green sedge** (*Carex viridula*) prefers marl flats and disturbed calcareous sites and has been found in Cook County in the project corridor. The potential for impacts to the little green sedge from the Rock Island District alignment are less than from the IC/UP alignment. The Rock Island District alignment will bypass impacts to calcareous wetlands along the IC Joliet line and will have no impact north of the city of Joliet where the majority of potential habitat exists.

Wild hyacinth (*Camassia angusta*) is endangered in Illinois and has been known to occur in Macon County (outside of the project area) where it prefers prairies and moist woods. It could occur in degraded prairie habitats in central Illinois. Approximately 0.35 hectares (0.87 acres) of prairie habitat will be removed for construction of the Rock Island District alignment through McLean, Logan and Sangamon Counties. *C. angusta* was not located in plant surveys of the project area. Therefore, no impact is anticipated.

The state endangered **grass pink orchid** (*Calopogon tuberosus*) has a broad range of habitats, occurring in northeastern Illinois most often in bogs and acid soils. It also has been documented in fens and mesic and wet-mesic sand prairies. It has been reported in the Hitts Siding Prairie now owned by the IDNR. Approximately 0.46 hectares (1.13 acres) of grade B prairie will be lost from the right-of-way on the opposite side the Hitts Siding Prairie under the Rock Island District alignment. This species was not found in the area of proposed construction.

State Endangered Animal Species. Potential habitat for the **red-shouldered hawk** (*Buteo lineatus*) includes riparian forest with large trees for nesting. This type of habitat occurs along the Rock Island District alignment at MP 209.00 in Macoupin County. No forested habitat will be removed in this area, and no red-shouldered hawks were noted utilizing the right-of-way during field surveys. Therefore, no impact to this species is anticipated.

The state endangered **sharp-shinned hawk** (*Accipiter striatus*) occurs in deciduous and coniferous forests and open woodlands, selecting mature forest near stream habitats for nesting. A detailed survey along the Rock Island District alignment showed limited habitat potential for this species adjacent to the railroad tracks. Therefore, this species will not be adversely affected by this alignment.

Henslow's sparrow (*Ammodrammus henslowii*), the **short-eared owl** (*Asio flammeus*) and the **northern harrier** (*Circus cyaneus*) are listed as endangered in Illinois. These species occur in grass lands and wet meadows, nesting in areas generally greater than 50 hectares (125 acres) in size. The Rock Island District alignment will remove 5.28 hectares (13.05 acres) of native and non-native grassland. All habitat loss will be in linear strips along existing railroad rights-of-way. Large grassland areas suitable for nesting will not be affected. Therefore, this alignment will not measurably affect these species.

The **long-eared owl** (*Asio otus*) is generally a migrant in Illinois, roosting in stands of conifers often adjacent to open grasslands for hunting. Field surveys of mixed forest habitats near this alignment indicated that habitat availability within the project area is limited. Therefore, this species will not be impacted by the Rock Island District alignment.

The **upland sandpiper** (*Bartramia longicauda*) occurs in grassland, pastures and hay fields often associated with developed and agricultural lands. This type of habitat is available along the Rock Island District alignment as well as in many rural areas throughout the corridor. Approximately 33 hectares (81 acres) of native and non-native grassland, pasture and forbland habitat will be removed for this alignment. All habitat loss will be in a linear band within and adjacent to the existing right-of-way.

The **American bittern** (*Botaurus lentiginosus*) prefers wet meadows and emergent wetlands of cattail, bulrushes and sedges for feeding and nesting. Similar habitat is utilized by the **least bittern** (*Ixobrychus exilis*). Wetland habitat occurs at many locations adjacent to this alignment. Moderate quality habitat for these species occurs between MP 54.00 and MP 57.00. However, no direct habitat loss will occur since the construction of a freight siding in this section will take place on the opposite side of the tracks.

The **snowy egret** (*Egretta thula*) and the **little blue heron** (*Egretta caerulea*) typically nest with other heron in stands of immature trees near shallow waters of marshes, lakes and ponds. No nesting colonies of heron were found in field surveys of this alignment. Thickets of trees and shrubs adjoining marshy habitat between MP 54.00 and MP 57.00 could serve as potential habitat for this species. However, this habitat is on the west side of the tracks, opposite from the construction area. Approximately 4.40 hectares (10.86 acres) of wetland will be removed from this section for the construction of a freight siding. While this wetland could serve as foraging habitat, its loss and replacement through mitigation is not likely to adversely affect the continued existence of this species.

The **black-crowned night heron** (*Nycticorax nycticorax*) is widely adapted to various emergent and forested wetland habitats. Nesting occurs in bottomland forest as well as occasionally in herbaceous marsh habitat. Potential habitat exists between MP 54.00 and MP 57.00 but will not be directly affected by construction. A total of 2.6 hectares (6.4 acres) of floodplain forest habitat will be removed for this alignment. All will be within or immediately adjacent to the railroad right-of-way.

Forster's tern (*Sterna forsteri*) usually prefers marsh habitat bordering large lakes. It nests on high dry areas within the wetlands. This combination of habitat is not available immediately adjacent to the Rock Island District alignment. Therefore, no impact is anticipated with this alignment.

The **common barn owl** (*Tyto alba*) is an occasional permanent resident in southern Illinois and has been sighted during breeding season in northeastern counties. It generally nests in silos, steeples, grain elevators, as well as hollow trees. While this species was not found during surveys, moderate nesting habitat, consisting of mature woodlands adjacent to fallow fields, was identified at two locations: between MP 201.70 and MP 202.10 and between MP 227.30 and MP 227.50. Provision of service roads in these areas will require habitat loss.

The **Eastern massasauga** (*Sistrurus catenatus*) occurs in wet prairies, bogs and swamps. This habitat type is available in project area but is widely distributed. Overall, a total of 5.01 hectares (12.38 acres) of wetland will be lost with the alignment. However, this alignment is not likely to affect the Eastern massasauga due to the limited distribution of known populations.

The **Eryngium stem borer** (*Papaipema eryngii*) utilizes the prairie plant rattlesnake master as a host for larval development. Prior to recent surveys the only known populations of this species were in Will and Grundy Counties. Based on 1997 field surveys of proposed construction areas for the HSR alternative, populations of rattlesnake master were identified and located at ten sites along the Rock Island District alignment. The presence of the Eryngium stem borer was confirmed at four of these locations along the Rock Island District alignment in Will County between MP 54.00 and MP 57.00 and at one location in Grundy County at MP 66.60. The proposed freight siding on the east side of the alignment will impact one of the Will County sites supporting populations of the Eryngium stem borer. A total of 0.46 hectares (1.13 acres) of prairie will be removed at this location. No impact will occur at the Grundy County site.

State Threatened Plant Species. The **slender sandwort** (*Arenaria patula*) is threatened in the state of Illinois and occurs on limestone flats and dolomitic prairies along the Des Plaines River. No known habitat of this species is known along the Rock Island District alignment.

The **narrow-leaved sundew** (*Drosera intermedia*) is listed as threatened in Illinois. This plant prefers bog habitats with acid soils. It is known from four counties in the project area, but neither this species nor its habitat were found within the project area. Impacts to this species are not anticipated.

The state threatened plant species **Hill's thistle** (*Cirsium hillii*) is found in dry open prairies and the **savanna blazing star** (*Liatris scariosa* var. *nieuwlandii*) and **ear-leaved foxglove** (*Tomanthera auriculata*) are found in prairies and savannas. The IDNR has noted the likelihood of the blazing star between MP 235.60 and MP 237.40. The service roads proposed for this area will be outside the right-of-way and therefore not require the loss of prairie. The ear-leaved foxglove also has been reported in the Hitts Siding Prairie. This species was not found in surveys along the area between MP 54.00 and MP 57.00. The freight siding proposed for this section will require the removal of 0.46 hectares (1.13 acres) of grade B prairie from the right-of-way on the opposite side of the Hitts Siding Prairie. Therefore, this alternative will not adversely affect these species.

State Threatened Animal Species. The **red-veined leaf hopper** (*Aflexia rubranura*) is listed as threatened in Illinois. This insect occurs in large prairie areas and has an affinity for populations of prairie dropseed (*Sporobolis heterolepis*). No specific studies were undertaken to locate the *A. rubranura*. However, field surveys of the Rock Island District alignment identified nine locations where populations of prairie dropseed occur. Two of these will be affected by construction of this alignment. Approximately 3.15 hectares (7.79 acres) of prairie or wetland habitat containing prairie dropseed will be removed for this alignment. The potential exists for impact to this species through the removal of habitat.

The **Illinois chorus frog** (*P. streckeri illinoensis*) is listed as threatened in Illinois. It prefers open sandy areas of river lowlands and has been known to be found in the vicinity of the proposed grade separation at Pontoon Road (MP 272.20) in Madison County. John K. Tucker of the Illinois Natural History Survey conducted a survey of this site between February 22, 1998 and March 25, 1998, on seven nights when this species was active at other locations. The Illinois chorus frog was not identified at the subject location. Therefore, it is unlikely that the Rock Island District alignment will adversely affect this species.

The **Ottoe skipper** (*Hesperia ottoe*) is a butterfly listed as threatened in Illinois. It is a prairie insect dependent on undisturbed sand prairie habitat. No specific distributional studies of this insect were conducted. The Rock Island District alignment is not likely to affect this species because no sand or hill prairies are present in the impact areas along this alignment.

Kirtland's snake (*Clonophis kirtlandii*) occurs in wet meadows, open swamp forests, reservoirs and occasional wet vacant urban areas. Potential habitat may exist within the project area. However, no wetland loss will occur within Sangamon County, its known distribution within the project area.

The **double-crested cormorant** (*Phalacrocorax auritus*) occupies lakes, rivers and open water areas for fishing. It prefers large trees adjacent to open water for nesting. This type of habitat will not be affected by this alignment.

The **veery** (*Catharus fuscescens*) usually occurs in moist deciduous woods with relatively dense understories. It is estimated that at least 20 hectares (50 acres) of habitat is needed to maintain a viable population. Habitat of this type and size is limited in the project area. Field surveys investigated deciduous woodlands along the Rock Island District alignment and found all to provide only low habitat potential. In all situations worst case impacts will be limited to vegetation loss in a narrow strip along the existing right-of-way. No forest fragmentation will result from the Rock Island District alignment. Potential impacts to the veery will be negligible.

The **loggerhead shrike** (*Lanius ludovicianus*) inhabits open agricultural and grassland areas with hedgerows of osage orange, honey locust and red cedar. Moderate habitat potential occurs at numerous locations along the alignment, including at MP 201.70 and between MP 212.55 and MP 213.10. The Illinois Breeding Bird Atlas has confirmed records of the loggerhead shrike in the vicinity of MP 201.70. The Atlas has no records of the loggerhead shrike near the area between MP 212.55 and MP 213.10. However, the Macoupin County surveys are only 1 to 25 percent complete. The railroad embankment itself may serve as an important habitat element in that it functions as a continuous hedgerow. Approximately 5.13 hectares (12.68 acres) of shrub habitat and 2.64 hectares (6.52 acres) of hedgerow habitat will be removed for construction on the Rock Island District alignment. Given the broad habitat available in the project area, it is unlikely that this alignment will adversely affect the continued existence of this species.

The **yellow-crowned night heron** (*Nyctanassa violacea*) nests in bottomland forest with water and shallow marsh near for feeding. Although no heron colonies were found during field studies, potential habitat was identified between MP 54.00 and MP 57.00 near Wilmington. A proposed freight siding in this section will be constructed on the east side of the right-of-way. The construction of this improvement will occur on the opposite side of the potential habitat and, therefore, is not expected to adversely affect this species.

The **pied-billed grebe** (*Podilymbus podiceps*) prefers hemi-marsh and ponds less than 7 hectares (17 acres) in size with dense emergent vegetation. The Rock Island District alignment passes many wetland areas with small patches of open water. However, at most this habitat type will be affected peripherally, and no hemi-marsh will be removed.

The **king rail** (*Rallus elegans*) is found in a variety of habitats, including shallow marsh, shrub-carr, swamps, ditches, mudflats and upland agricultural fields. Potential habitat is available in many areas along the Rock Island District alignment. Given the extent of habitat available and the relatively small amount of habitat loss expected, the direct impacts to this species will be minimal.

Comparison of Alternative Alignments. The IC/UP alignment may have the potential to adversely affect the Federally and state endangered **Hine's emerald dragonfly** due to the increased frequency of trains and the likely increase in collisions with adult dragonflies crossing the tracks near Lemont, in Will County. The Rock Island District and Norfolk Southern alignments do not pass through this area.

All alignments will require the removal of some wetland and native prairie habitats that lie within or adjacent to the railroad right-of-way. In many cases these areas represent the last remaining remnants of high quality vegetative communities. Although degraded in some sections, these areas may contain species within their seed banks that are not currently evident but could be revealed through future management efforts. Technical reports for wetlands and native plant communities have been prepared for this project and are presented under separate covers. These reports provide detailed impact analyses and address proposed measures for mitigating adverse effects.

Both the IC/UP and the Rock Island District alignments could adversely affect the **Eryngium stem borer** at one location in Will County. Here, 0.46 hectares (1.13 acres) of prairie will be removed in an area of confirmed presence of the species.

Potential impacts could occur for the **Indiana bat** and the **red-veined leaf hopper** with all of the alternative alignments. Possible habitat will be removed for the Indiana bat at two sites along the IC/UP and the Norfolk Southern alignments and at one location along the Rock Island District alignment. Additional studies may be required for these species to determine their actual presence in the area of impact. Possible habitat exists for the red-veined leaf hopper at five sites along the IC/UP and Rock Island District alignments and at 13 locations along the Norfolk Southern. Although the presence of this species has not been confirmed at these locations, additional studies may be required to confirm their status.

Additional coordination will be conducted with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources to ensure that the proposed project will minimize or avoid impacts to protected plant and animal species during project construction, operation and maintenance. This effort will include an agency consultation process and will be coordinated with and incorporate mitigation measures developed for both wetland and native vegetation impacts.

5.9.4.5 Mitigation Summary

Additional coordination will be conducted with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources to assure that the proposed project will minimize or avoid impacts to protected plant and animal species during project construction, operation and maintenance. This effort will include an agency consultation process and will be coordinated with and incorporate mitigation measures developed for both wetland and native vegetation impacts.

5.9.4.6 Unavoidable Adverse Impacts

Even with implementation of the recommended mitigation measures, loss of potential habitat for threatened or endangered species could be an unavoidable adverse impact due to the linear nature of the project. The extent of such impact will be reduced through implementation of the indicated mitigation measures.

5.9.4.7 Cumulative Impacts

No substantive cumulative impacts are anticipated with implementation of the proposed and recommended mitigation measures. Impacts to sensitive species and their habitats will continue to be addressed on a case-by-case basis by the IDNR based on surveys performed prior to earth-surface disturbance activities associated with projects as they occur. The IDNR will continue to identify appropriate mitigation to prevent impacts that will result in jeopardy to a species on a project-specific basis.

5.9.4.8 Irreversible and Irretrievable Commitment of Resources

Loss of threatened and endangered species and their potential habitats will represent an irreversible and irretrievable commitment of resources. The magnitude of such loss is not known but will be determined upon site-specific surveys for each proposed facility. Nevertheless, the indicated mitigation measures will ensure that such loss is avoided or minimized, as will site-specific recommendations from the FWS and IDNR following review of surveys for species of concern.

5.9.5 Natural Areas

5.9.5.1 Direct and Indirect Impacts

To assess the potential for impacts to natural areas, the location of each Illinois Natural Area Inventory site within 1.6 kilometers (one mile) of the project area was plotted on aerial photographs. The proximity of these sites to areas of project construction were determined and the potential for impact was assessed.

No-Build Alternative: The No-Build Alternative will not impact any INAI sites in the project area.

High-Speed Rail Alternative:

IC/UP Alignment. Twenty-four natural areas lie in the general vicinity of the IC/UP alignment (See Table 5.9-4). None of them will be directly affected by the proposed project. In seven areas (Carpenter Park, Denby Prairie, Elkhart Hill, Hitts Siding Prairie, Lemont East Geological Area, Lockport Prairie East, and Salt Creek) construction will be within the proximity of natural areas. In each area work will take place within the existing railroad right-of-way and outside of the boundaries of the natural areas. Necessary precautions will be taken to avoid indirect impacts to all natural areas. South of Salt Creek the alignment passes through Madigan State Park. While this park is not a designated Illinois Natural Area, it does provide valuable plant and animal habitat with a floodplain forest abutting the railroad right-of-way. A freight siding is proposed in this section between MP 158.50 and 168.40. All construction will take place within the existing right-of-way.

Norfolk Southern Alignment. Nine natural areas are located near the Norfolk Southern Alignment. Four lie in close proximity to the railroad right-of-way. These locations are: Carpenter Park, Denby Prairie, Elkhart Hill, and Salt Creek. None will be directly or indirectly affected by the proposed project.

Table 5.9-4
IMPACTS TO NATURAL AREAS

Natural Area	Alignment IC/UP	NS	RID	Project	Impact
Alton Geological Area	x	x	x	None	None
Braceville Railroad Prairie	x		x	None	None
Braidwood Dunes and Savanna	x		x	None	None
Carlinville Railroad Prairie	x	x	x	None	None
Carpenter Park	x	x	x	Grade Separation	None – underground pedestrian underpass will be constructed within existing right-of-way
Denby Prairie	x	x	x	Frontage road	None – construction begins immediately to the south
Elkhart Hill	x	x	x	Frontage road	None – natural area lies to the east of the project area
Funks Grove	x	x	x	None	None
Godley Railroad Prairie	x		x	None	None
Hitts Siding Prairie	x		x	Freight siding	None - new track will be on the opposite side of the right-of-way from natural area
Illinois & Michigan Canal	x			None	None
Joliet Army Ammunition Plant	x		x	None	None
Kankakee River	x		x	None	None
Lemont Bluff Geological	x			None	None
Lemont East Geological Area	x			Frontage road	None – geological area lies to the north of the project area
Lockport Prairie East	x			Grade separation	None – nature preserve lies to the west of the project impact area
Long Run Seep	x			None	None
Mackinaw River	x	x	x	None	None
Mazonia Railroad Prairie	x		x	None	None
Ocoya Geological Area	x	x	x	None	None
Paw Paw Woods	x		x	None	None
Salt Creek	x	x	x	Double Track	None – Salt Creek lies to the north of the project impact area
Stubblefield Woodlots	x		x	None	None
Wilmington Geological	x		x	None	None

Source: Planning Resources Inc., August 1999.

Rock Island District Alignment. Nineteen natural areas are located in the vicinity of the Rock Island District alignment. Five areas lie in close proximity to the railroad right-of-way but will not be directly affected. These locations are: Carpenter Park, Denby Prairie, Elkhart Hill, Hitts Siding Prairie, and Salt Creek. Direct and indirect impacts will be avoided through standard construction precautions.

5.9.5.2 Mitigation Summary

Where the proposed alignments pass through or near designated Illinois Natural Areas, special precautions will be taken to assure that indirect impacts will be avoided. All clearing and construction activity will take place from the railroad bed. Erosion and sediment controls will be installed to protect adjoining properties. Protective fencing will be erected to assure that construction activities are kept within the right-of-way. In areas such as Carpenter Park where the natural area lies on both sides of the alignment, appropriate provisions will be made to facilitate the safe movement of pedestrians during construction.

5.9.5.3 Unavoidable Adverse Impacts

None of the alternative alignments will have unavoidable adverse impacts.

5.9.5.4 Cumulative Impacts

This project will not result in cumulative impacts to Illinois Natural Areas.

5.9.5.5 Irreversible and Irretrievable Commitment of Resources

None of the alternatives will result in irreversible or irretrievable commitments of resources.

5.10 FLOODPLAINS

No-Build Alternative: No impacts to floodplains will occur with the No-Build alternative.

High-Speed Rail Alternative:

IC/UP Alignment. Construction associated with the IC/UP alignment will occur in six areas where 100-year floodplains have been identified. Figures 5.10-1A through 5.10-1C identify the potentially impacted floodplain, their general location, and the type of construction proposed. One of these areas (MP 158.50 to MP 168.40) consists of the provision of a freight siding in an area where the existing track bed is wide enough to accommodate the improvement. In this area, no work should be performed below the 100-year flood elevation and as a result this improvement will not encroach upon the base floodplain. In the other areas, the grade separation at MP 29.00 and four service roads are proposed. Affects to flood heights and limits in these areas should be minimal. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes.

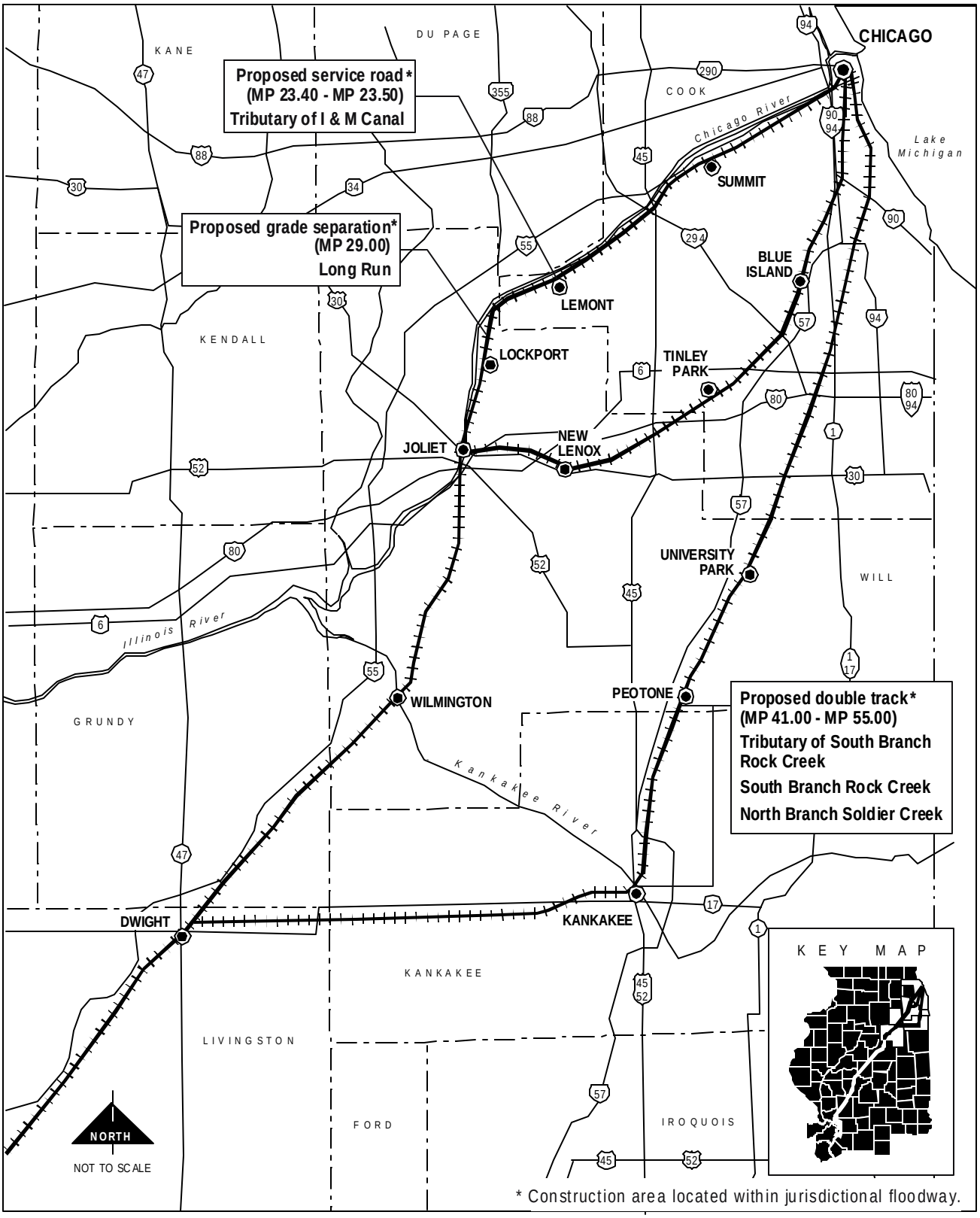


FIGURE 5.10-1A
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
PROPOSED CONSTRUCTION AREAS IN IDENTIFIED FLOODPLAINS
(Chicago to Pontiac)

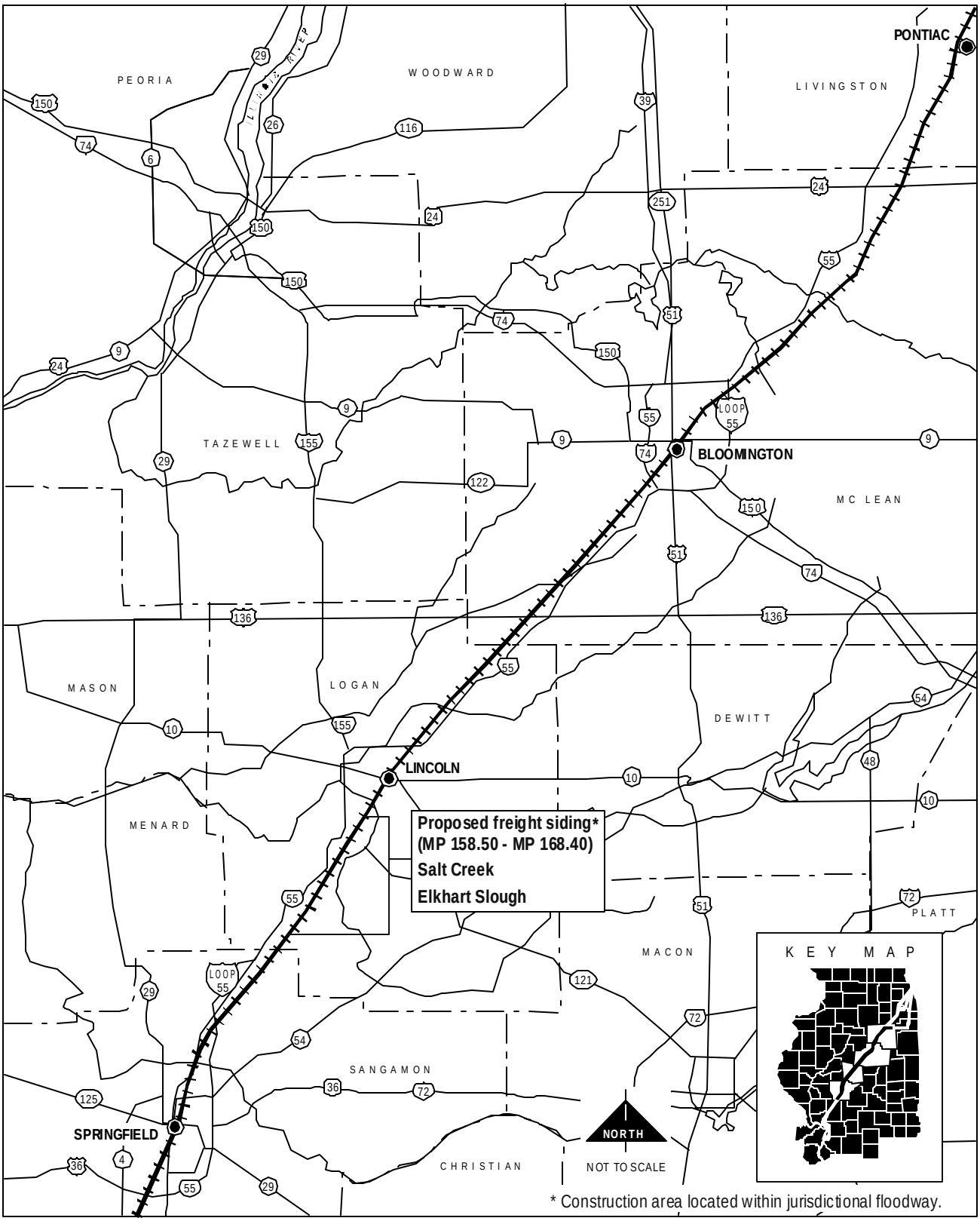


FIGURE 5.10-1B
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
PROPOSED CONSTRUCTION AREAS IN IDENTIFIED FLOODPLAINS
(Pontiac to Springfield)

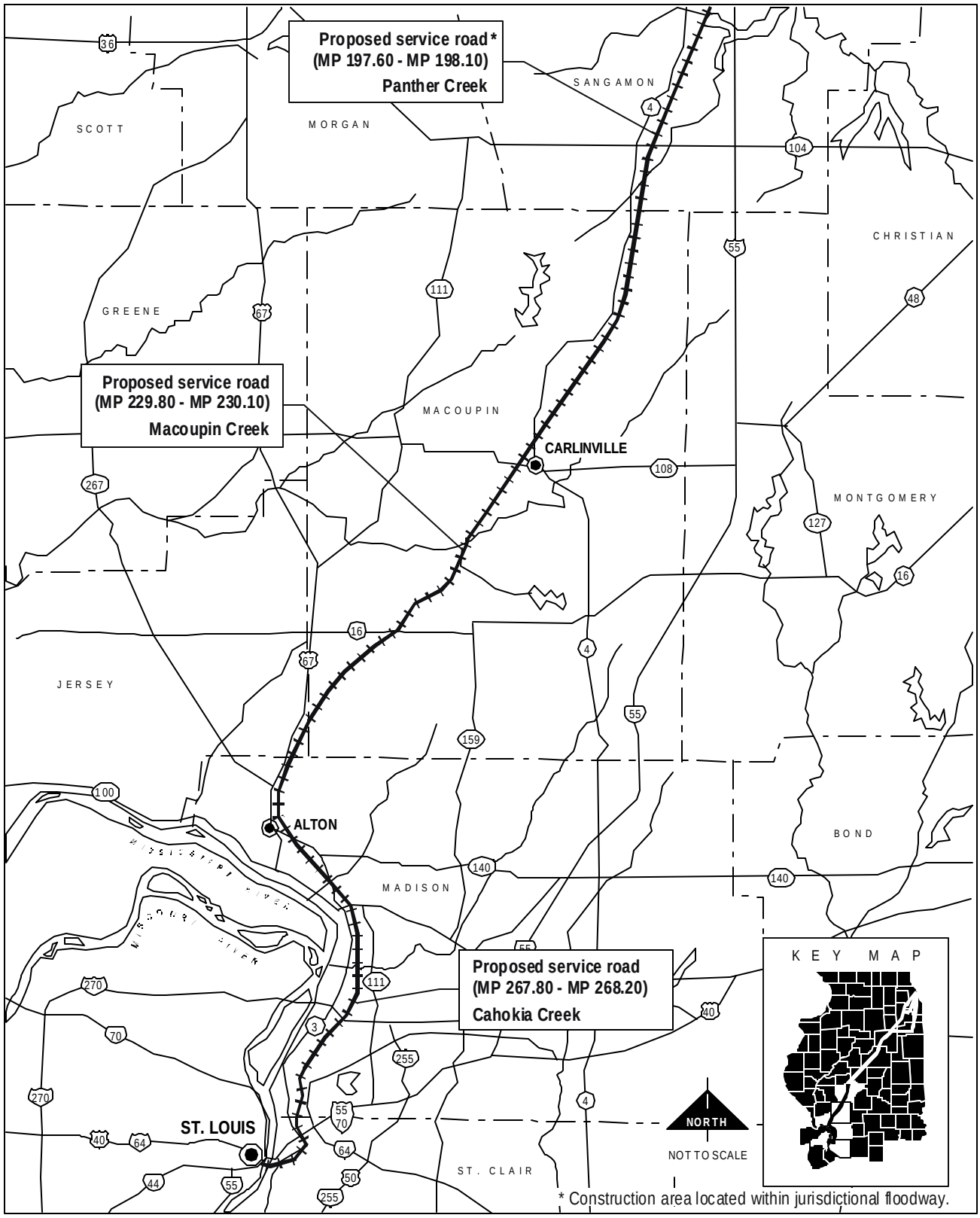


FIGURE 5.10-1C
CHICAGO-ST. LOUIS HIGH-SPEED RAIL PROJECT
PROPOSED CONSTRUCTION AREAS IN IDENTIFIED FLOODPLAINS
(Springfield to St. Louis)

Norfolk Southern Alignment. Construction associated with the Norfolk Southern alignment will occur in five areas where 100-year floodplains have been identified. (See Figures 5.10-1A through 5.10-1C). Two of these areas consist of the provision of double track (MP 41.00 to MP 55.00) and a freight siding (MP 158.50 to MP 168.40) in areas where the existing track bed is wide enough to accommodate the improvement. In these areas, no work should be performed below the 100-year flood elevation and as a result this improvement will not encroach upon the base floodplain. In the other areas, three service roads are proposed. Affects to flood heights and limits in these areas should be minimal. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes.

Rock Island District Alignment. Construction associated with the Rock Island District alignment will occur in four areas where 100-year floodplains have been identified. (See Figures 5.10-1A through 5.10-1C). One of these areas consists of the provision of a freight siding (MP 158.50 to MP 168.40) in an area where the existing track bed is wide enough to accommodate the improvement. In this area, no work should be performed below the 100-year flood elevation and as a result this improvement will not encroach upon the base floodplain. In the other areas, three service roads are proposed. Affects to flood heights and limits in these areas should be minimal. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes.

5.11 HISTORICAL AND ARCHAEOLOGICAL RESOURCES

5.11.1 Historic Sites and Resources

No-Build Alternative: The No-Build alternative will not impact any historical above-ground resources in the project area.

High-Speed Rail Alternative: The HSR alternative, regardless of alignment, will not displace any historic above-ground resources. However, visual impacts to historic resources could occur where grade crossing warning devices are installed, grade separations are constructed, or fencing is added. The State Historic Preservation Office (SHPO) has determined a no adverse effect finding can be accomplished through continued coordination and compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Preservation, 1995. (See Appendix C-1.)

5.11.2 Archaeological Sites and Resources

No-Build Alternative: The No-Build alternative will not impact any archaeological resources in the project area.

High-Speed Rail Alternative: The HSR alternative will not impact any archaeological resources. Two sites in the project area are recommended for Phase II archaeological testing. (See SHPO concurrence dated December 18, 1998 in Appendix C-1.) They are located at TR 234 (MP 231.00) and Maryville Road (MP 270.70). At TR 234, the provision of conventional gates are recommended. This improvement will occur within the existing right-of-way, and impacts to archaeological resources are not expected. At Maryville

Road, the existing conventional gates will be retained. Therefore, no impacts to archaeological resources are expected at this location either.

5.12 FOREST PRESERVES AND PARKS

No-Build Alternative: The No-Build alternative will not impact forest preserves or parks since this alternative will not require additional right-of-way or new construction.

High-Speed Rail Alternative: None of the HSR alignments will impact any forest preserves or parks in the project area. Construction activities associated with any of the HSR alignments will occur primarily within existing right-of-way. The areas where additional right-of-way will be required for new stations, railroad construction, freight sidings, frontage/service roads, or grade separations are not within any forest preserves or parks.

5.13 ENERGY CONSUMPTION

5.13.1 Energy Consumption During Construction

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

High-Speed Rail Alternative: During construction of any of the HSR alignments, additional energy will be expended beyond what will be used for the normal operation. This additional energy will be consumed on a short-term basis by construction of improvements required to implement the HSR service and by construction-related delays to existing freight, Metra commuter, and Amtrak passenger service. However, as described below, once the HSR service begins, long-term energy savings will be realized.

5.13.2 Energy Consumption During Operation

The No-Build and HSR alternatives were evaluated 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. Since rail capacity can be increased at a relatively small incremental cost, any substantial increase in rail ridership that will arise from implementation of HSR service will result in conservation of travel-related energy.

Passenger rail service under the No-Build alternative will be a continuation of the three existing daily round trips between Chicago and St. Louis. The No-Build alternative was not subjected to detailed operational simulation, and therefore, it was assumed that the amount of diesel fuel consumed per round trip will remain the same as under existing conditions. This was based on the assumption that under the No-Build alternative, increased ridership resulting from the normal travel growth in the corridor will be accommodated by simply adding more cars to the existing trains. The additional energy required to haul added weight could be compensated for by use of more efficient locomotives in the future. New locomotives, such as the F70, are designed to be at least 15 percent more energy efficient than current locomotives.

Detailed operational simulation, using three different HSR equipment options, was done for the three HSR alignments under consideration. The results of this simulation were used to estimate future energy

consumption for each of the HSR alignments. The estimated kiloliters (gallons) of diesel fuel that will be consumed during one round trip between Chicago and St. Louis for each equipment option providing 110 to 125 mph (180 to 200 kph) service is shown in Table 5.13-1. The results in this table illustrate the advantage of Talgo's tilt-car technology in terms of fuel consumption.

Table 5.13-1
FUEL CONSUMPTION FOR CHICAGO - ST. LOUIS ROUND TRIP
(in Kiloliters (Gallons) of Diesel Fuel)

Alternative	F40	F70 Talgo	F70 Conventional	RTL-2 Turboliner
Existing (1998)	3.3 (858)			
2010 No-Build	3.3 (858)			
2010 IC/UP Alignment		3.0 (780)	3.7 (967)	5.6 (1470)
2010 Norfolk Southern Alignment		3.1 (817)	3.7 (980)	5.8 (1522)
2010 Rock Island Alignment		2.9 (775)	3.6 (961)	5.5 (1460)

Source: De Leuw, Cather & Company, August 1999.

The estimated person-kilometers (person-miles) of travel by mode and alternative are shown in Table 5.13-2. It should be noted that because the Norfolk Southern alignment is different than the IC/UP alignment between Chicago and Dwight, it would serve slightly different markets at the north end of the corridor. As a result, the total projected 2010 annual person trips for the Norfolk Southern alignment is around 47 million, while the projected trips for the No-Build alternative and the IC/UP alignment is around 45 million. This accounts for the slightly higher total person-kilometers (person-miles) of travel projected for the Norfolk Southern alignment. No person trip projections were developed for the Rock Island District alignment. Therefore, for the purpose of this analysis, projected Rock Island District person trips, and subsequently person-kilometers (person-miles) of travel, were considered to be the same as those for the IC/UP alignment.

To determine the future annual energy consumption associated with HSR service, the fuel consumption data for the F70 locomotive with Talgo trainset with 110 to 125 mph (180 to 200 kph) maximum operating speed was used.

The future annual energy consumption for the HSR service on the alternative alignments was calculated by assuming eight round trips per day, seven days a week. The annual kiloliters (gallons) of diesel fuel consumed by each alternative was multiplied by 534 (141,000), the number of British Thermal Units (BTUs) per kiloliter (gallon) of diesel fuel, to obtain the annual BTUs consumed by the proposed rail service. The future energy use by other modes in the corridor was estimated by calculating the total person-kilometers (person-miles) of travel projected for 2010 by mode for the No-Build and HSR alternatives, and then applying the same energy consumption rates that were used for the existing (1998) conditions, as described in Section 2.13. Annual energy consumption by mode and alternative is summarized in Table 5.13-3.

Table 5.13-2
PERSON-KILOMETERS (PERSON-MILES) OF TRAVEL IN THE HIGH-SPEED RAIL CORRIDOR
(in Millions)

Alternative	Air	Rail	Bus	Car	Total
Existing (1998)	482 (299)	81 (50)	32 (20)	3234 (2005)	3829 (2374)
2010 No-Build	604 (374)	122 (76)	69 (43)	3940 (2443)	4735 (2936)
2010 IC/UP Alignment	380 (236)	460 (285)	58 (36)	3872 (2401)	4770 (2958)
2010 Norfolk Southern Alignment	380 (236)	482 (299)	58 (36)	4123 (2556)	5044 (3127)
2010 Rock Island Alignment	380 (236)	460 (285)	58 (36)	3872 (2401)	4770 (2958)

Source: De Leuw, Cather & Company, August 1999.

Table 5.13-3
ANNUAL ENERGY CONSUMPTION
(in Billions of BTUs)

Alternative	Air	Rail	Bus	Car	Total
Existing (1998)	2062	132	20	7217	9432
2010 No-Build	2583	132	43	8794	11552
2010 IC/UP Alignment	1625	321	36	8643	10625
2010 Norfolk Southern Alignment	1626	336	36	9202	11200
2010 Rock Island Alignment	1625	319	36	8643	10623

Source: De Leuw, Cather & Company, August 1999.

The results in Table 5.13-3 show that energy consumption from intercity passenger travel under the No-Build alternative will be higher in 2010 than the HSR alternative with any of the three alignments. In terms of BTUs per person-kilometer (person-mile) expended, some improvement over existing conditions could be expected even under the No-Build conditions by virtue of having the same number of trains carry more passengers. The total annual rail ridership is expected to increase from 271,000 in 1998 to 406,000 by 2010. This will reduce energy consumption from 1,630 BTUs to 1,090 BTUs per rail person-kilometer (2,620 to 1,750 per rail person-mile) in 2010.

Table 5.13-4 presents a summary of energy consumption in BTUs per person-kilometer (person-mile) by mode and total travel for each alternative. Consumption rates per person-kilometer (person-mile) for air, bus, and automobile are national averages obtained from the Final EIS prepared for the Northeast Corridor Improvement Project (USDOT, 1994). The rail consumption rates were developed as part of the analysis for the analysis conducted for the Chicago - St. Louis HSR project.

Table 5.13-4
ENERGY CONSUMPTION PER PERSON-KILOMETER (PERSON-MILE)
(in BTUs)

Alternative	Air	Rail	Bus	Car	All Modes
Existing (1998)	4300 (6900)	1630 (2620)	600 (1000)	2200 (3600)	2500 (4000)
2010 No-Build	4300 (6900)	1090 (1750)	600 (1000)	2200 (3600)	2400 (3900)
2010 IC/UP Alignment	4300 (6900)	690 (1120)	600 (1000)	2200 (3600)	2200 (3600)
2010 Norfolk Southern Alignment	4300 (6900)	700 (1130)	600 (1000)	2200 (3600)	2200 (3600)
2010 Rock Island Alignment	4300 (6900)	690 (1120)	600 (1000)	2200 (3600)	2200 (3600)

Source: USDOT, October 1994.
De Leuw, Cather & Company, August 1999.

The energy consumption rates for all travel, shown in the last column of Table 5.13-4, is probably the broadest indicator of the relative potential of each alternative to conserve energy. On this basis, it is clear that each HSR alignment has about equal potential to result in energy conservation.

5.14 SPECIAL WASTE

5.14.1 Hazardous Waste

No CERCLIS sites will be involved or impacted by the project.

5.14.2 Undetermined Waste Status

Ten Preliminary Environmental Site Assessments (PESA) for special waste were conducted by the Illinois Department of Transportation, Bureau of Railroads. The assessments concluded that the HSR alternative could involve special waste sites. The sites that will be impacted are discussed in Section 2.14. Subsequent to the conduct of the PESAs, the proposed projects at Site 2 (frontage/service road between MP 29.00 and MP 29.70 – IC/UP alignment), Site 3 (grade separation at MP 31.40 – Norfolk Southern alignment), and Site 5 (frontage/service road between MP 103.90 and MP 104.43 – Norfolk Southern alignment) have been modified and will no longer require right-of-way acquisition.

5.14.3 Mitigation

Additional testing may be warranted for the special waste locations investigated. At least six months prior to land acquisition the PESAs should be validated. If right-of-way acquisition does not include the ownership or operation of any aboveground or underground storage tanks or discarded waste and if construction grading and excavation does not involve any of the documented or suspected sites, then no additional preliminary testing for the project will be necessary. If the stipulations can not be met after the scope of involvement has been determined and after validation, then additional investigation could be required. In either case, the project will not be implemented until all risks and liabilities of involvement are known and are acceptable to IDOT.

5.15 SECONDARY AND CUMULATIVE IMPACTS

Implementation of HSR service is not expected to substantially alter development patterns in the corridor and near stations. It is possible that implementation of HSR service will result in undeveloped land in the vicinity of HSR stations developing slightly faster than they would have without HSR. However, it is unlikely that failure to implement HSR will significantly deter development of the agricultural and vacant land in the corridor.

The greatest potential for development, economic activity and job creation is in the station areas with the highest ridership and the greatest concentration of opportunities within a eight-kilometer (five-mile) radius. There is no model, based on available data, which can reliably predict secondary development or economic activity on a micro scale. This was confirmed by REAL at the University of Illinois, and as such, projections consist of estimating construction and operation jobs on a gross and aggregate scale.

Estimating jobs in tourism, education and from shifts in corporate employment and investment, induced by improved rail access, cannot be accurately quantified. Even though assumptions could be made, it is beyond current methodology to quantify the shift share activity between various regions and industries based upon the intangible response to improved access.

Additionally, as a result of this project, local governments could be burdened with additional costs if frontage/service roads developed as part of this project were transferred to these local entities for maintenance.

5.16 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Environmental impacts associated with the HSR alternative alignments will result in short- and long-term impact relationships which are fundamentally similar in kind and magnitude. In the preparation of this EIS, FHWA methodology was followed. This methodology requires that all significant short- and long-term environmental relationships created by project alternatives be quantified in light of the (1) avoidance, (2) minimization, and (3) compensation of unavoidable impacts on resources. In addition to wetlands, wildlife, air quality, water, farmland, and historical/archaeological factors, quantified resources include options of societal land use and development. Those commitments are represented by secondary and cumulative developments anticipated as a consequence of implementation of any of the HSR alternative alignments.

Each alternative alignment is based on planning which recognizes transportation needs within the context of present and future land use. In that sense, and coupled with environmentally sound design and construction management practices cited elsewhere in this EIS, short-term impacts and use of resources are evaluated. Those alternatives are all consistent with conservative maintenance and enhancement of long-term productivity of the HSR corridor in particular, and the state and region, in general.

In summary, the long-term enhancement of the efficiency of the HSR corridor transportation system will occur at the expense of short-term construction impacts on nearby residents and businesses. Those short-term effects will include localized noise, air, and water pollution and traffic delays. Based on standard environmental specifications made part of construction contracts as directed by this EIS, they will not have a lasting impact on the environment.

Short-term gains to the local economy will occur during construction resulting from hiring local firms and labor, and local services and supplies.

Demonstrating advancements in high-speed ground transportation technologies in order to foster the implementation of high-speed steel wheel on rail transportation systems as an alternative to existing transportation systems answers the basic project purpose.

Based on its significant contribution to the long-term objects of regional and local plans of development, the proposed Chicago - St. Louis High-Speed Rail Project is consistent with the maintenance and enhancement of long-term productivity at the local, regional, state, and national level.

5.17 IMPACT SUMMARY

A summary of the quantitative impacts associated with the HSR alternative is presented in Table 5.17-1 for each alignment.

Table 5.17-1

IMPACT SUMMARY FOR HIGH-SPEED RAIL ALTERNATIVE ALIGNMENTS

	High-Speed Rail Alternative Alignment		
	IC/UP	**Norfolk Southern**	**Rock Island District**
Right-of-Way Acquisition - Hectares (Acres)			
Direct Conversion	49 (121)	63 (156)	39 (97)
Agricultural	31 (76)	47 (115)	31 (76)
Prime Farmland	32 (79)	54 (134)	32 (79)
Displacements (Number)			
Residential	11	3	0
Commercial	1	1	0
Institutional	1	0	0
Other Structures	1	6	1
Noise Impacts (Number of Receptors)	0	0	0
Stream and Tributary Crossings (Number)	56	61	46
Wetland Impacts - Hectares (Acres)			
Impacts	6 (15)	6 (14)	5 (12)
Mitigation Required	25 (62)	8 (20)	22 (53)
Natural Resource Impacts - Hectares (Acres)			
All Upland Vegetation	95 (234)	119 (293)	84 (207)
Native Vegetation (All)	2 (4)	7 (18)	2 (4)
Native Vegetation (Grade C+ or higher)	1 (2)	6 (14)	1 (2)
Floodplains (Projects with floodplain crossings	6	5	4
Cultural Resources (Number)			
Above-ground Resources	0	0	0
Archaeological Resources	0	0	0
Forest Preserves and Parks (Number)	0	0	0
Undetermined Waste Sites (Number)	5	6	4
Highway-Railroad At-Grade Crossings (Number)			
Existing	322	310	350
Proposed for Closure - Pedestrian	17	19	17
Proposed for Closure - Vehicular	68	71	74
Railroad-Railroad At-Grade Crossings (Number)	18	12	15

Note: Impacts listed are for the alignments in their entirety between Chicago and St. Louis.

Section 6
LIST OF PREPARERS

Name	Qualifications	Primary Responsibilities
Federal Highway Administration		
Keith Hoernschemeyer	Transportation Engineer, Illinois Division.	FHWA review.
Jon-Paul Kohler	Environmental Engineer, Illinois Division.	FHWA review.
Don R. Keith	Right-of-Way Officer, Illinois Division.	FHWA review.
Federal Railroad Administration		
William R. Fashouer	Juris Doctor.	Environmental Counsel.
James Smailes	MS, Civil Engineering; BS, Civil Engineering.	General Engineer.
David A. Valenstein	MPA, Public Administration; BFA, BAR, Architecture.	Environmental Program Manager.
Mark E. Yachmetz	BS, Civil Engineering.	Passenger Programs Director.
Illinois Department of Transportation		
Kathleen S. Ames	MS, Environmental Engineering; BA, Biology; IDOT, 1973 to present.	General content and impact review.
Frank Hartl	BS, Transportation Engineering; IDOT, 1974 to present.	High-Speed Rail Manager.
Jerry Isenburg	MA, Business Administration; IDOT, 1970 to present.	Rail Program Planning Section Chief.

Richard J. Nowack	BS, Biology; Registered Professional Landscape Architect; IDOT, 1975 to present.	Natural resources review.
Charles Perino	Ph.D., Plant Taxonomy; MS, Plant Taxonomy; BS, Geology; IDOT, 1982 to present; 10 years prior biological/environmental experience.	Water quality and wetland resources review.
John L. Rowley	BS, Agriculture Education; IDOT, 1983 to present; 25 years prior agricultural experience.	Agriculture review.
Barbara H. Stevens	MA, Economics; IDOT, 1979 to present.	Socio-economic impact review.
Merrill Travis	MA, Public Administration; IDOT, 1967 to present.	Chief, Bureau of Railroads.
John A. Walthall	Ph.D., Archaeology; MA, Anthropology; BA, Anthropology; IDOT, 1978 to present; 12 years prior archaeological experience.	Archaeological review.
John Washburn	MA, Environmental Science; BA and BS, Geology; IDOT, 1968 to present.	Hazardous waste, geology, and hydrogeology review.
Walt Zyznieuski	MA, Environmental Studies; IDOT, 1994 to present, 14 years prior environmental experience.	Air quality review.

PTG – De Leuw, Cather & Company

Charles DeWeese	BS, Math – Railroad Operations; 35 years passenger and freight operations management, operations planning, railroad construction and maintenance.	Project management and operations analysis.
Robert Gilly, P.E.	BS, Civil Engineering; 30 years experience in railroad engineering.	Preliminary design.
Jere Hinkle, P.E.	MS, Civil Engineering; BS, Civil Engineering; 35 years experience in transportation planning and environmental analysis.	Environmental lead and technical oversight.

Anthony Pakeltis, AICP	MUPP, Urban Planning and Policy; BUP, Urban Planning; BS, Environmental Design; 10 years experience in environmental document preparation.	Document coordination; Transportation, air quality and noise analysis.
John Priede, P.E.	BS, Civil Engineering, 35 years experience in transportation planning.	Energy analysis.
Peter Reinhofer	BS, Civil Engineering; 2 years experience.	Noise analysis.
Timothy Selover	BS, Civil Engineering; 5 years experience.	Air quality analysis; quality assurance.

Planning Resources Inc.

Rebecca Cerf	MS Environmental Biology.	Water resources and ecosystems analysis.
Juli E. Crane	MS, Fisheries and Wildlife; BS, Wildlife and Range Resources; PRI, 1996 to present; 7 years prior experience with NEPA documentation.	Wetlands and upland vegetation.
Amy Eckland	MS, Plant and Soil Science, BS, Natural Resource Management.	Environmental data coordination.
Lisa Freudenburg Hardy	MS, City and Regional Planning.	Public involvement, socio-economic/land use.
David A. Koldoff	BS, Environmental Biology; PRI, 1994 to present.	Wetlands, fish and aquatic resources.
N.J. Pointner, AIA, AICP	MA, City and Regional Planning; BA, Architecture; PRI, 1982 to present; 12 years prior experience with NEPA documentation.	Public involvement coordination.
Lan R. Richart	MS, Biology; BS, Zoology; PRI, 1983 to present; 5 years prior experience with NEPA documentation.	Director natural resources analyses.
Pamela J. Richart, AICP	MA, Human Environmental Planning; BA, Human Ecology; PRI, 1982 to present.	Agricultural analysis.

Sverdrup Corporation

Thomas Darnold, P.E.	BS, Civil Engineering, 18 years experience in traffic engineering and highway design.	Traffic/grade crossing analysis.
Tracey Lober, P.E.	BS, Civil Engineering; 10 years experience in transportation design and planning studies.	Traffic/grade crossing analysis, public involvement.
John McCarthy, AICP	MS, Urban Planning; BS, Economics; 27 years experience in planning and design.	St. Louis Multimodal Transportation Facility Project Manager.
Nancy Nourse	MS, Civil Engineering; BS, Civil Engineering; 9 years experience in hazardous waste analysis.	Special waste analysis.
Mary Cay O'Malley, P.E.	BS, Civil Engineering; 10 years experience in transportation design and planning studies.	Traffic/grade crossing analysis, public involvement.
David Peterson, P.E.	BS, Civil Engineering; Sverdrup, 1991 to present; 11 years prior experience in railroad and civil engineering design and construction.	Project management, train operations modeling.
Terry Winebrenner, P.E.	BS, Civil Engineering; 15 years experience in highway and civil engineering design.	Cost estimation.

Archaeological Research, Inc.

Elizabeth Goldsmith	MA, Anthropology; BA, History; 8 years experience in archaeological and historical research.	Historical and archaeological resources and research documentation.
Patricia Hamlen	MA, Anthropology, BA, Anthropology; 10 years experience in archaeological field investigations.	Field investigation.
John Hodgson	BA, Anthropology; 5 years experience in archaeological field investigations.	Field investigation.

David Keene	MA, Philosophy; BS, Anthropology; 20 years experience in archaeological and historical research.	Principal investigator for archaeological and historical investigations.
Karen Poulson	MA, Anthropology; BA, Anthropology; 5 years experience in museum studies and 5 years experience in archaeological investigations.	Prehistoric sites documentation coordination.
Kim Ullery	BS, Anthropology; 5 years experience in archaeological field work.	Field work and document coordination.
Greg Zaro	BA, Anthropology; 5 years experience in archaeological field investigations.	Field investigation.

Heritage Research, Limited

John Vogel	Ph.D., History; MA, Photography; BA, History; Heritage Research, Limited, 1980 to present.	Above-ground historic resources investigation.

Applied Real Estate Analysis, Inc.

Robert E. Miller	MRP, Urban Development and Cultural Resource Management; BA, American History; 24 years experience in real estate analysis and public policy consulting.	Real estate assessment coordination, employment and economics.
Maxine V. Mitchell, CRE	MCP, Urban Planning; BA, Economics; 27 years experience in real estate market analysis and public policy consulting.	Real estate analysis manager.
A. Andy Prodanovic, MAI	BA, Real Estate and Marketing; Illinois State Certified Appraiser; 22 years experience in real property valuation and real estate consulting.	Appraisal, right-of-way cost estimates, grade crossing analysis.

Corporate Strategies, Inc.

Robert Leilich	MS, Industrial Management, Cert. Transp. Economics; BS, Mechanical Engineering; 35 years railroad operations management and consulting.	Operations modeling, system design.

John C. Prokopy	BS, Mechanical Engineering; BS, Civil Engineering; 30 years railroad consulting, market planning, simulation modeling and design.	Operations modeling, technical analysis.

Section 7
DISTRIBUTION OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

The Draft Environmental Impact Statement is being distributed to the following federal, state, regional, and local agencies and other interested parties for their review and comments.

Federal

Advisory Council on Historic Preservation
Department of the Army, Chicago District, Corps of Engineers
Department of the Army, Rock Island District, Corps of Engineers
Department of the Army, St. Louis District, Corps of Engineers
Federal Aviation Administration
Federal Emergency Management Agency
Illinois and Michigan National Heritage Corridor Commission
Office of NEPA Policy and Assistance
U.S. Coast Guard, Eighth District
U.S. Coast Guard, Ninth District
U.S. Department of Agriculture, Natural Resource Conservation Service
U.S. Department of Commerce
U.S. Department of Housing and Urban Development
U.S. Department of the Interior, Fish and Wildlife Service, Chicago Field Office
U.S. Department of the Interior, Fish and Wildlife Service, Rock Island Field Office
U.S. Department of the Interior, Fish and Wildlife Service, Marion Illinois Suboffice
U.S. Department of the Interior, Office of Surface Mining
U.S. Environmental Protection Agency, Planning and Assessment Branch
U.S. Senator John Ashcroft
U.S. Senator Christopher S. Bond
U.S. Senator Richard J. Durbin
U.S. Senator Peter G. Fitzgerald
U.S. Representative Bobby L. Rush, District No. 1
U.S. Representative Jesse L. Jackson, Jr., District No. 2
U.S. Representative William O. Lipinski, District No. 3
U.S. Representative Luis V. Gutierrez, District No. 4
U.S. Representative Danny K. Davis, District No. 7
U.S. Representative Gerald C. Weller, District No. 11
U.S. Representative Jerry F. Costello, District No. 12
U.S. Representative Judy Biggert, District No. 13
U.S. Representative Thomas W. Ewing, District No. 15
U.S. Representative Ray LaHood, District No. 18

U.S. Representative John M. Shimkus, District No. 20
U.S. Representative William L. Clay, District No. 1 (Missouri)

State Agencies - Illinois

Illinois Association of Soil and Water Conservation Districts
Illinois Bureau of the Budget
Illinois Commerce Commission
Illinois Department of Agriculture
Illinois Department of Mines and Minerals
Illinois Department of Natural Resources
Illinois Department of Public Health
Illinois Environmental Protection Agency
Illinois Farm Bureau
Illinois Historic Preservation Agency
Illinois Nature Preserve Commission
Illinois State Clearinghouse
Illinois State Fire Marshall
State Senator Antonio Munoz, District No. 1
State Senator Margaret Smith, District No. 3
State Senator Robert S. Molaro, District No. 12
State Senator Barack Obama, District No. 13
State Senator Emil Jones, Jr., District No. 14
State Senator William "Bill" Shaw, District No. 15
State Senator Donne E. Trotter, District No. 16
State Senator William R. Mahar, District No. 19
State Senator Christine Radogno, District No. 24
State Senator Patrick Daniel Welch, District No. 38
State Senator D.D. Halvorson, District No. 40
State Senator Kirk W. Dillard, District No. 41
State Senator Edward F. Petka, District No. 42
State Senator Lawrence Walsh, District No. 43
State Senator John W. Maitland, Jr., District No. 44
State Senator Robert A. Madigan, District No. 45
State Senator Vince Demuzio, District No. 49
State Senator Larry Bomke, District No. 50
State Senator Stanley B. Weaver, District No. 52
State Senator Evelyn M. Bowles, District No. 56
State Senator James F. Clayborne, Jr., District No. 57
State Representative Sonia Silva, District No. 1
State Representative Edward Acevedo, District No. 2
State Representative Lovana S. "Lou" Jones, District No. 5
State Representative Shirley M. Jones, District No. 6
State Representative Daniel J. Burke, District No. 23
State Representative Howard A. Kenner, District No. 24
State Representative Barbara Flynn Currie, District No. 25
State Representative Charles G. Morrow, III, District No. 26

State Representative Thomas J. Dart, District No. 28
State Representative Willis Harris, District No. 29
State Representative Harold Murphy, District No. 30
State Representative Todd H. Stroger, District No. 31
State Representative Constance A. "Connie" Howard, District No. 32
State Representative Kevin A. McCarthy, District No. 37
State Representative Renee Kosel, District No. 38
State Representative Eileen Lyons, District No. 47
State Representative Mary K. O'Brien, District No. 75
State Representative George F. Scully, Jr., District No. 80
State Representative James H. Meyer, District No. 82
State Representative Brent Hassert, District No. 83
State Representative John "Phil" Novak, District No. 85
State Representative John C. "Jack" McGuire, District No. 86
State Representative Dan Rutherford, District No. 87
State Representative William E. Brady, District No. 88
State Representative John W. Turner, District No. 90
State Representative Gary Hannig, District No. 98
State Representative Raymond Poe, District No. 99
State Representative Gwenn Klingler, District No. 100
State Representative Richard J. "Rick" Winkel, Jr., District No. 103
State Representative Timothy V. "Tim" Johnson, District No. 104
State Representative Steve Davis, District No. 111
State Representative Wyvetter H. Younge, District No. 114

State Agencies - Missouri

Missouri Department of Natural Resources
Missouri Department of Transportation
State Senator John E. Scott, District No. 3
State Senator Paula Carter, District No. 5
State Representative O.L. Shelton, District No. 57
State Representative Louis H. Ford, District No. 58
State Representative Dorathea Davis, District No. 63
State Representative Robert Hilgemann, District No. 64
State Representative Russell Gunn, District No. 70
State Representative Rita D. Days, District No. 71

Local Jurisdictions and Agencies

Bi-State Development Agency
Center for Neighborhood Technology
Chicago Area Transportation Study
Chicago Department of Transportation
Chicago Metro Community Assistance Office
Chicago Transit Authority
City of St. Louis, Department of Public Works

Commuter Rail Division of the Regional Transportation Authority
Consolidated Farm Service Agency
DeWitt County Regional Planning Commission
East-West Gateway Coordinating Council
Environmental Law and Policy Center
Greater Egypt Regional Planning and Development Commission
Grundy Economic Development Council
Illinois Association of County Superintendents of Highways
Illinois Railroad Association
Kankakee County Regional Planning Commission
Lockport Area Developmental Commission
Logan County Regional Planning Commission
McLean County Regional Planning Commission
Northeastern Illinois Regional Transportation Authority
Sangamon County Regional Planning Commission
South Suburban Mayors and Managers Association
Southwestern Illinois Metropolitan and Regional Planning Commission
Township Officials of Illinois
United Counties Council of Illinois
West Central Illinois Valley Regional Planning Commission

Other

Amtrak Operations, Illinois Central Railroad
Community Public Libraries along the Corridor
Norfolk Southern Railway
Gateway Western Railway
National Railroad Passenger Corporation, Intercity Strategic Business Unit
Union Pacific Lines

Section 8
COMMENTS AND COORDINATION

An extensive public involvement program was conducted as part of the Chicago - St. Louis High-Speed Rail Project. The project team reviewed, used, and built upon previous high-speed rail studies, including the 1994 Chicago - St. Louis High Speed Rail Financial and Implementation Plan.

8.1 SCOPING PROCESS

The purpose of the scoping process was to help define the scope and emphasis of the environmental documentation. A scoping meeting was held on April 24, 1995 with state and federal agency representatives at the Illinois Department of Transportation (IDOT) Administration Building in Springfield. Meeting participants provided oral comments at the meeting and later sent letters documenting their agency's concerns. Representatives from the following agencies and governmental jurisdictions were present at this meeting:

- Illinois Environmental Protection Agency;
- Illinois Commerce Commission;
- Illinois Department of Natural Resources;
- Illinois Department of Transportation;
- Illinois Department of Agriculture;
- Illinois Historic Preservation Agency;
- Illinois Farm Bureau;

- East-West Gateway Coordinating Council;
- Kankakee County Regional Planning Commission;
- Lockport Area Development Commission;
- Sangamon County Water Conservation District; and
- Limestone Township.

Comments from meeting attendees are documented in the scoping meeting minutes in Appendix C-3. Written comments were received from the following agencies and are provided in Appendix C-4:

- U.S. Department of Housing and Urban Development;
- U.S. Department of the Interior: Fish & Wildlife Service;
- U.S. Coast Guard;
- Federal Aviation Administration;
- Illinois Department of Agriculture;
- Illinois Environmental Protection Agency;
- Illinois Department of Natural Resources; and
- Kankakee County Planning Department.

8.2 PROJECT NEWSLETTERS

Six high-speed rail project newsletters, *Fast Track*, were prepared and distributed to approximately 3,500 persons listed on the newsletter mailing list. Issues of the newsletter were also available at all meetings. These newsletters were event-driven, providing timely information regarding project developments and upcoming activities. The newsletters performed the following functions:

- Announced the dates, times and locations of open houses and workshops;
- Answered the most frequently-asked questions regarding high-speed rail implementation;
- Described the operational characteristics along the Chicago - St. Louis route; and
- Explained the data collection and evaluation processes.

8.3 COMMENT FORMS

Comment forms were available at all meetings and inserted into each project newsletter. The first comment form, included in the April 1995 issue of the *Fast Track* newsletter, requested that the public rank a list of key issues and concerns related to the high-speed rail project. The results of this survey were printed in the September 1995 issue of *Fast Track*. Subsequent forms have provided ample space for persons to provide comments. Prompt responses were made to all requests for information. Comments from returned forms were recorded verbatim into the high-speed rail database and distributed to the project team leaders and IDOT on a weekly basis.

8.4 PROJECT INFORMATION LINE

In March 1995, the project team established a toll-free project information line for the public to register opinions and concerns, receive project information, and request to receive the project newsletter. All comments received through the information line were documented on the high-speed rail database and distributed to the project team leaders and IDOT. Follow-up calls included adding names to the newsletter mailing list, sending past issues of the *Fast Track* newsletter, and returning calls at a later time with answers to complex questions. The toll-free service was discontinued in January of 1997.

8.5 TASK FORCE MEETINGS

A task force meeting of citizens interested in High-Speed Rail service in Illinois had formed prior to initiation of the Environmental Impact Statement process. Members of the Steering Committee of the Citizens Advisory Council were routinely invited to attend High-Speed Rail Task Force meetings throughout the duration of the project. These meetings were generally held in Chicago, Springfield or St. Louis. The project team and IDOT representatives presented Steering Committee members with a status report and addressed comments and questions.

A report was distributed at the June 1, 1995, Task Force Meeting which included the following:

- Summary of public comments by county;
- Results of the public ranking of issues and concerns;
- Pie chart illustrating percentage of comments received by county from Newsletter No. 4; and
- Ranking of key issues and concerns by county and zip code.

8.6 DATA COLLECTION MEETINGS

In Summer and Fall 1995, the high-speed rail project team met with transportation and planning officials within each of the 12 counties along the high-speed rail corridor. The purpose of these meetings was to gather information to review land use, development trends and traffic patterns which might influence highway-railroad at-grade crossing treatments. County engineers and representatives from regional planning commissions provided the team with technical data concerning traffic counts and physical roadway limitations, as well as land use and zoning-related information. The information collected at these meetings was used to evaluate each rail crossing and to determine appropriate crossing treatments. Meetings were held on the following dates in 1995 with county and/or municipal representatives. Meeting minutes were prepared for each.

June 23	Kankakee County
June 23	Grundy County
June 28	Will County
July 6	McLean County
July 13	Livingston County
July 19	Will County
July 20	Logan County
July 27	Jersey County
July 28	St. Clair County
July 28	Madison County
August 3	Macoupin County
August 4	Sangamon County
August 8	Village of Lemont
August 8	City of Lockport
August 17	Town of Normal
August 17	City of Bloomington
September 22	Cook County
October 3	Arsenal Coordinating Council
October 6	Grundy County

8.7 PUBLIC OFFICIALS' WORKSHOPS

Fourteen public officials' workshops were held along the proposed high-speed rail corridor during the month of August, 1996. These meetings were informal, small group workshops which provided an opportunity for the consultant and IDOT representatives to discuss the high-speed rail project with public officials representing the counties, townships, municipalities and emergency service districts located along the corridor. The primary objective of these workshops was to receive feedback from officials on the proposed safety improvements to existing highway-railroad at-grade crossings within their communities and political jurisdictions. More than 1100 invitations were mailed. The media were also alerted and invited. The invitations were sent to the following officials:

County
County board members
County engineers
County farm bureau managers

Municipal
Mayors/presidents
Alderpersons/trustees
Managers/administrators

Township
Township supervisors
Highway commissioners

Emergency Services
Police chiefs
Fire district chiefs
County sheriffs

The invitation letter encouraged these individuals to invite other public officials within their jurisdictions, such as planning, economic development and historic preservation commissions, planning and zoning boards, and engineering and public works departments. A letter was also sent to state legislators, notifying them of the

project and the public officials meetings.

Handouts included an 11" by 17" overview of the process (Appendix C-5) and the project and bound reports. These reports contained: an explanation of technical material underlying the grade crossing analysis; graphics showing every crossing and the proposed treatment; and an analysis of each crossing within the subject county or counties.

A total of 260 persons signed in at the workshops not including team representatives. The following table summarizes participation at each of the workshops.

Number	Date	Location	Time	Signed In
1.	August 7	Monee	9:30-12:00	14
2.	August 8	Kankakee	9:30-12:00	16
3.	August 14	Springfield	9:30-12:00	17
4.	August 14	Normal	3:00-5:30	17
5.	August 20	Joliet	9:30-12:00	11
6.	August 21	Granite City	9:00-11:30	6
7.	August 21	Alton	3:00-5:30	11
8.	August 22	Brighton	9:00-11:30	26
9.	August 22	Carlinville	4:00-6:30	26
10.	August 26	Lincoln	3:00-5:30	15
11.	August 27	Pontiac	9:30-12:00	27
12.	August 27	Dwight	3:00-5:30	22
13.	August 28	Gardner	5:00-7:30	30
14.	August 29	Lockport	3:00-5:30	22

Comments received at the workshop generally fell within ten general categories of issues. These categories are listed below:

- Safety;
- Train operations;
- Service;
- Train speed;
- Cost and funding;
- Project schedule;
- Community impacts;

- Agriculture;
- South Suburban Airport; and
- Site specific concerns.

8.8 MEETINGS WITH PRIVATE CROSSING OWNERS

Project team representatives contacted all private crossing owners along the proposed high-speed rail corridor. The purpose was to gather information on the use of the crossing to determine if an adequate alternative was available which would permit closure. Memoranda on each of these meetings are on file.

8.9 RESOURCE AGENCY REVIEW OF TECHNICAL DOCUMENTS

A draft copy of the Air Quality Technical Report was sent to the Illinois Environmental Protection Agency for review and comment. See Appendix C-6 for their response.

Copies of the Wetland, Native Prairie, and Threatened and Endangered Species Technical Reports were sent to the following agencies for review and comment:

- U.S. Environmental Protection Agency;
- U.S. Department of the Interior: Fish and Wildlife Service;
  Chicago Field Office
  Rock Island Field Office
  Marion Illinois Suboffice
- U.S. Army Corps of Engineers; and
  Chicago District
  Rock Island District
  St. Louis District
- Illinois Department of Natural Resources.

Comments were received from the U.S. Fish and Wildlife Service (Marion Illinois Suboffice), U.S. Army Corps of Engineers (Chicago and Rock Island Districts), and the Illinois Department of Natural Resources. (See Appendix C-6.)

8.10 AGENCY REVIEW OF PRELIMINARY DRAFT ENVIRONMENTAL IMPACT STATEMENT

Comments were received on a preliminary version of the Draft Environmental Impact Statement from the Missouri Department of Transportation and the U.S. Coast Guard, Eighth District. See Appendix C-7 for the comments received from these agencies.

Section 9
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Appendix A
INVENTORY DATA

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Appendix A-1
WILDLIFE SPECIES BY COVER TYPE AND STRATA

Cover Type	Tree Canopy	Tree Boles	Shrub Layer	Terrestrial Surface	Terrestrial Subsurface
Grassland (Meadows, Abandoned Fields and Pastures)			American goldfinch American robin Brown-headed cowbird Cardinal Common yellowthroat Dickcissel Downy woodpecker Field sparrow House wren Little brown bat Mourning dove Song sparrow	American toad Bobolink Bobwhite Brewer's blackbird Cottontail rabbit Coyote Eastern meadowlark Eastern plains garter snake Field sparrow Franklin's ground squirrel Grasshopper sparrow Horned lark House mouse Killdeer Meadow vole Midland brown snake Opossum Prairie vole Red fax Ring-necked pheasant Savannah sparrow Short-tailed shrew Striped skunk 13-lined ground squirrel Tiger salamander Vesper sparrow Western fox snake White-tailed deer Woodchuck Deer mouse	Franklin's ground squirrel Least shrew Opossum Plains pocket gopher Deer mouse Prairie mole Short-tailed shrew 13-lined ground squirrel Tiger salamander Woodchuck
Cropland				American robin American crow Barn swallow Bobwhite Brown-headed cowbird Common grackle Cottontail rabbit Eastern meadowlark European starling House sparrow Killdeer Horned lark Mourning dove Ring-necked pheasant Short-tailed shrew Striped skunk Western fox snake	13-lined ground squirrel
Urban Land	American robin Blue jay Common grackle Crow European starling Mourning dove Purple martin	Eastern fox squirrel Eastern gray squirrel	American Robin Barn swallow Cardinal Cedar waxwing Dickcissel European starling House sparrow Mourning dove Red-winged blackbird	American robin Brown-headed cowbird Canada goose European starling House mouse Mourning dove Norway rat Striped skunk 13-lined ground squirrel	

Cover Type	Tree Canopy	Tree Boles	Shrub Layer	Terrl. Surface	Terrl. Subsurface
Upland Forest	Black-capped chickadee Coopers hawk Eastern fox squirrel Eastern gray squirrel Eastern wood-pewee Hoary bat Mourning dove Red-eyed virio Red-headed woodpecker Red-tailed hawk Ruby-throated hummingbird Southern flying squirrel Yellow-shafted flicker	Blacked-capped chickadee Brown creeper Eastern fax squirrel Eastern gray squirrel Great-horned owl Red-bellied woodpecker Screech owl Southern flying squirrel White-breasted nuthatch Yellow-shafted flicker	Blue jay Cardinal Indigo bunting Mourning dove Northern mockingbird Opossum Ovenbird Rose-breasted grosbeak	Brown creeper Eastern chipmunk Gray fox Long-tailed weasel Mourning dove Opossum Raccoon Short-tailed shrew Woodchuck White-footed mouse White-tailed deer	Eastern mole White-footed mouse Eastern chipmunk
Savanna	Coopers hawk Red-tailed hawk Eastern fox squirrel American kestrel	Black-capped chickadee White-breasted nuthatch Red-headed woodpecker		Eastern chipmunk House mouse Least shrew Least weasel Meadow vole Red fox Cotton-tail rabbit Savanna sparrow Tiger salamander	
Bottomland Forest	Belted kingfisher Black-capped chickadee Coopers hawk Eastern gray squirrel Great-horned owl Mourning dove Red-eyed virio Red-headed woodpecker Tufted titmouse Wood duck Yellow-shafted flicker	Big brown bat Brown creeper Eastern gray squirrel Little brown bat Raccoon Red bat Red-bellied woodpecker Screech owl Spring peeper Tree swallow White-breasted nuthatch Wood duck	Mourning dove Opossum Wood thrush Woodcock Yellow warbler	American toad Brown creeper Eastern milk snake Gray fox Gray squirrel Midland brown snake Mourning dove Opossum Raccoon Red fox White-frosted mouse Short-tailed weasel Tiger salamander Wood thrush Woodchuck	Long-tailed weasel Opossum Short-tailed shrew
Wet Prairie			Red-wing blackbird Swamp sparrow	Mink Least weasel Bull frog American toad Meadow vole Leopard frog American bittern Lesser yellow legs Western smooth green snake	

Cover Type	Tree Canopy	Tree Boles	Shrub Layer	Terrestrial Surface	Terrestrial Subsurface
Emergent Wetland			Red-winged blackbird Swamp sparrow	American bittern American coot American toad Beaver Black-crowned night heron Blanchard's cricket frog Blue-winged teal Bullfrog Canada goose Common goldeneye Common map turtle Common snipe Great blue heron Great egret Killdeer Least weasel Leopard frog Lesser scaup Long-billed marsh wren Mallard Meadow vole Mink Northern harrier Raccoon Red-winged blackbird Swamp sparrow Western chorus frog	Mink Muskrat
Remnant Prairie				Horned lark Bobolink Meadow lark Vesper sparrow Savannah sparrow Grasshopper sparrow Dickcissel Sedge wren Eastern box turtle	
Hedgerow Edge/Fencerow/ Early Successional Field	Eastern bluebird Red-tailed hawk Sharp-shinned hawk	Downy woodpecker Great-horned owl Northern flicker Red-headed woodpecker Screech owl	American robin Brown-headed Cowbird Common yellowthroat Song sparrow Woodcock	Bobwhite Brewer's blackbird Brown-headed cowbird Common nighthawk Cottontail rabbit Coyote Eastern meadowlark Field sparrow Long-tailed weasel Horned lark Red fox Ring-necked pheasant Striped skunk Short-tailed shrew White-tailed deer Deer mouse Prairie king snake	Least shrew Meadow vole Plains pocket gopher Deer mouse 13-lined ground squirrel
Riverine	Belted kingfish		Common yellowthroat Royal green snake	Spotted sandpiper Mink Raccoon Green frog	Muskrat Beaver

Appendix A-2
FOREST PRESERVES AND PARKS WITHIN 1.6 KILOMETERS (ONE MILE) OF THE HIGH-SPEED RAIL PROJECT AREA

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Cook County - IC-Joliet Line				
Chicago	Grant Park	1.6	(1.0)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Sheridan Park	1.6	(1.0)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Strenford Park	0.5	(0.3)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Dvorak Park	1.0	(0.6)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Williams Park	1.3	(0.8)	North, South, & West Township Map/Chicagoland Atlas
Chicago	McGuane Park	0.6	(0.4)	North, South, & West Township Map/Chicagoland Atlas
Chicago	McKinley Park	0.2	(0.1)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Lawndale Park	1.5	(0.9)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Kelly Park	1.5	(0.9)	Lake & Stckney Township Map/Chicagoland Atlas
Chicago	Archer Park	1.6	(1.0)	Lake & Stckney Township Map/Chicagoland Atlas
Chicago	Vittum Park	1.2	(0.8)	Lake & Stckney Township Map/Chicagoland Atlas
Chicago	Wentworth Park	1.6	(1.0)	Lake & Stckney Township Map/Chicagoland Atlas
Chicago	Chicago Portage Woods Forest Preserve	0.5	(0.3)	Lyons Township Map/Chicagoland Atlas
Forest View	McCook Park	1.6	(1.0)	Lyons Township Map/Chicagoland Atlas
McCook	Summit Park	0.2	(0.1)	Lyons Township Map/Chicagoland Atlas
Summit	Hodgkins Park	1.4	(0.9)	Lyons Township Map/Chicagoland Atlas
Willow Springs	Willow Springs Park	Adjacent		Lyons Township Map/Chicagoland Atlas
Willow Springs	Buffalo Woods Forest Preserve	0.6	(0.4)	Lyons Township Map/Chicagoland Atlas
Willow Springs	Columbia Woods Forest Preserve	0.6	(0.4)	Lyons Township Map/Chicagoland Atlas
Willow Springs	Santa Fe Park	0.6	(0.4)	Lyons Township Map/Chicagoland Atlas
Willow Springs	Paw Paw Woods Forest Preserve	Adjacent		Palos Township Map/Chicagoland Atlas
Willow Springs	Willow Springs Woods	Adjacent		Palos Township Map/Chicagoland Atlas
Willow Springs	Henry Detony Woods	Adjacent		Palos Township Map/Chicagoland Atlas
Willow Springs	Red Gate Woods	Adjacent		Palos Township Map/Chicagoland Atlas
Willow Springs	Pulaski Woods	Adjacent		Palos Township Map/Chicagoland Atlas
Lemont	Waterfall Glen Forest Preserve	0.8	(0.5)	Lemont Township/Chicagoland Atlas
Lemont	Black Partridge Forest Preserve	0.8	(0.5)	Lemont Township/Chicagoland Atlas
Lemont	Argonne National Laboratory Reservation	0.9	(0.6)	Lemont Township/Chicagoland Atlas
Lemont	Cog Hill Country Club	0.2	(0.1)	Lemont Township/Chicagoland Atlas
Cook County - IC Mainline				
Chicago	Grant Park	0.2	(0.1)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Lake Meadows Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Groveland Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Dunbar Park	0.8	(0.5)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Woodland Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Douglas Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Madden Park	0.8	(0.5)	North, South, & West Township Map/Chicagoland Atlas

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Chicago	Oak Land Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Ellis Park	0.2	(0.2)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Soldier Field	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Burnham Park	Adjacent		Hyde Park North Township Map/Chicagoland Atlas
Chicago	Midway Plaisance Park	Adjacent		Hyde Park North Township Map/Chicagoland Atlas
Chicago	Washington Park	1.4	(0.9)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Jackson Park	0.3	(0.2)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Kenwood Park	0.2	(0.2)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Hodes Park	0.9	(0.6)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Woodhull Park	1.0	(0.6)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	South Shore Park	1.2	(0.8)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Adams Park	0.2	(0.2)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Grand Crossing Park	0.2	(0.2)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Park 289	1.1	(0.7)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Avalon Park	Adjacent		Hyde Park North Township Map/Chicagoland Atlas
Chicago	Park 291	1.1	(0.7)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Park 277	0.2	(0.2)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Park 288	0.5	(0.3)	Hyde Park North Township Map/Chicagoland Atlas
Chicago	Tuley Park	0.6	(0.4)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Abbott Park	1.3	(0.8)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Gately Park	Adjacent		Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Palmer Park	0.2	(0.1)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Kensington Park	Adjacent		Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	West Pullman Park	1.1	(0.7)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Carver Park	1.6	(1.0)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Pullman Park	Adjacent		Calumet & Hyde Park South Township Map/Chicagoland Atlas
Chicago	Arcade Park	0.2	(0.2)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Riverdale	Whistler Forest Preserve/Pipe of Peace Golf Course	0.3	(0.2)	Calumet & Hyde Park South Township Map/Chicagoland Atlas
Riverdale	Riverdale Park	Adjacent		Calumet & Hyde Park South Township Map/Chicagoland Atlas
Riverdale	Ivanhoe Park	Adjacent		Thorton Township Map/Chicagoland Atlas
Riverdale	Kickapoo Meadows Forest Preserve	0.7	(0.5)	Thorton Township Map/Chicagoland Atlas
Riverdale	Calumet Park	0.6	(0.4)	Thorton Township Map/Chicagoland Atlas
Harvey	Lexington Park	0.5	(0.3)	Thorton Township Map/Chicagoland Atlas
Harvey	Ashland Park	0.9	(0.6)	Thorton Township Map/Chicagoland Atlas
Harvey	Harmon Park	0.4	(0.3)	Thorton Township Map/Chicagoland Atlas
Harvey	Holmes Park	0.4	(0.3)	Thorton Township Map/Chicagoland Atlas
Harvey	New Holmes Park	0.9	(0.6)	Thorton Township Map/Chicagoland Atlas
Harvey	Tatje Park	1.2	(0.8)	Thorton Township Map/Chicagoland Atlas
Harvey	Taft Park	1.2	(0.8)	Thorton Township Map/Chicagoland Atlas
Markham	Martin Luther King Park	Adjacent		Thorton Township Map/Chicagoland Atlas
Hazel Crest	Lyons Field	0.9	(0.6)	Thorton Township Map/Chicagoland Atlas
Hazel Crest	Calumet Country Club	0.2	(0.2)	Thorton Township Map/Chicagoland Atlas
Homewood	Ravisloe Country Club	Adjacent		Thorton Township Map/Chicagoland Atlas
Homewood	Orchard Park	0.8	(0.5)	Thorton Township Map/Chicagoland Atlas
Homewood	Merchants Park	Adjacent		Bloom Township Map/Chicagoland Atlas

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Homewood	Well Park	1.0	(0.7)	Rich Township Map/Chicagoland Atlas
Flossmoor	Park	Adjacent		Rich Township Map/Chicagoland Atlas
Flossmoor	Heather Hill Park	Adjacent		Rich Township Map/Chicagoland Atlas
Flossmoor	Flossmoor Country Club	Adjacent		Bloom Township Map/Chicagoland Atlas
Flossmoor	Cherry Hill Golf Course and Country Club	0.3	(0.2)	Bloom Township Map/Chicagoland Atlas
Flossmoor	Idlewood Country Club	0.8	(0.5)	Bloom Township Map/Chicagoland Atlas
Matteson	Park	0.5	(0.3)	Rich Township Map/Chicagoland Atlas
Park Forest	Keokuk Park	0.8	(0.5)	Rich Township Map/Chicagoland Atlas
Park Forest	Indiana Park	0.5	(0.3)	Rich Township Map/Chicagoland Atlas
Park Forest	Logan Park	1.1	(0.7)	Rich Township Map/Chicagoland Atlas
Park Forest	Illinois Park	1.4	(0.9)	Rich Township Map/Chicagoland Atlas
Park Forest	Wildwood Park	0.9	(0.6)	Rich Township Map/Chicagoland Atlas
Park Forest	Central Park	1.3	(0.8)	Rich Township Map/Chicagoland Atlas
Park Forest	Somonauk Park	1.3	(0.8)	Rich Township Map/Chicagoland Atlas
Park Forest	Wayne Park	0.6	(0.4)	Rich Township Map/Chicagoland Atlas
Park Forest	Winnebago Park	0.9	(0.6)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Bicentennial Park	0.5	(0.3)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Park	0.5	(0.3)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Means Park	1.3	(0.8)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Park	0.2	(0.1)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Park	0.8	(0.5)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Park	1.0	(0.7)	Rich Township Map/Chicagoland Atlas
Olympia Fields	Park	1.0	(0.6)	Rich Township Map/Chicagoland Atlas

Cook County - Rock Island District

Chicago	Grant Park	1.0	(0.6)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Stenford Park	1.6	(1.0)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Williams Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Dunbar Park	0.9	(0.6)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Lake Meadows Park	1.4	(0.9)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Armour Square Park	0.3	(0.2)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Stateway Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	Groveland Park	1.6	(1.0)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Woodland Park	1.6	(1.0)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Douglas Park	1.6	(1.0)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Burnham Park	1.4	(0.9)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Fuller Park	0.3	(0.2)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Taylor Park	Adjacent		North, South, & West Township Map/Chicagoland Atlas
Chicago	McGuane Park	1.4	(0.9)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Madden Park	1.1	(0.7)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Ellis Park	1.5	(0.9)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Washington Park	1.0	(0.6)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Lowe Park	1.0	(0.6)	North, South, & West Township Map/Chicagoland Atlas
Chicago	Boyce Playground	1.1	(0.7)	North, South, & West Township Map/Chicagoland Atlas

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Chicago	Sherwood Park	0.5	(0.3)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Normal Park	0.6	(0.4)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Hamilton Park	Adjacent		Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Meyering Park	1.4	(0.9)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Auburn Park	Adjacent		Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Foster Park	1.1	(0.7)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	West Chatham Park	0.6	(0.4)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Shewbridge Field	1.2	(0.8)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Lily Garden Park	0.3	(0.2)	Lake, Stickney & Hyde Park North Township Map/Chicagoland Atlas
Chicago	Brainerd Park	0.3	(0.2)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Wallace Playground	0.8	(0.5)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Princeton Park	1.4	(0.9)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Oakdale Park	0.2	(0.1)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Ridge Park	1.2	(0.8)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Euclid Park	1.0	(0.7)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Fernwood Parkway Park	1.3	(0.8)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Gravor Park	0.3	(0.2)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Mt.Vernon Park	0.6	(0.4)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Barnard Park	1.0	(0.6)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Cresent Park	1.4	(0.9)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Prospect Park	0.6	(0.4)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Ada Park	0.4	(0.3)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Park 287	0.8	(0.5)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Park 178	1.2	(0.8)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Chicago	Morgan Field Park	1.3	(0.8)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Blue Island	Central Park	0.4	(0.3)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Blue Island	Memorial Park	1.1	(0.7)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Blue Island	Calumet Woods Forest Preserve	1.0	(0.7)	Calumet & Hyde Park Township Map/Chicagoland Atlas
Midlothian	Midlothian Meadows Forest Preserve	Adjacent		Bremen Township Map/Chicagoland Atlas
Oak Forest	National Golf Course Forest Preserve	Adjacent		Bremen Township Map/Chicagoland Atlas
Oak Forest	Central Park	1.5	(0.9)	USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	Memorial Park	0.3	(0.2)	Bremen Township Map/Chicagoland Atlas
Tinley Park	Vogi Woods Park	Adjacent		Bremen Township Map/Chicagoland Atlas
Tinley Park	Lewis Memorial Park	0.6	(0.4)	Bremen Township Map/Chicagoland Atlas
Tinley Park	Yankee Woods Forest Preserve	Adjacent		USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	St. Mihiel Reservation	Adjacent		USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	Lagoon Park/Golf Course	0.3	(0.2)	USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	Rauloff Park	0.4	(0.3)	USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	Hirsch Park	0.8	(0.5)	USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	Lancaster Woods Park	Adjacent		USGS-Tinley Park Map/Chicagoland Atlas
Tinley Park	Sandalwood Park	0.5	(0.3)	USGS-Tinley Park Map/Chicagoland Atlas

Will County - IC-Joliet Line

Romeoville	Big Run Golf Club	0.8	(0.5)	Lockport Township Map/Chicagoland Atlas

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Romeoville	Keepataw Preserve	0.8	(0.5)	Forest Preserve District of Will County Map
Romeoville	Cenntenial Trail	0.3	(0.2)	Forest Preserve District of Will County Map
Romeoville	Romeoville Prairie Nature Preserve	1.5	(0.9)	Forest Preserve District of Will County Map
Romeoville	Ilse a La Cache	1.5	(0.9)	Forest Preserve District of Will County Map
Romeoville	Veterans Woods	1.3	(0.8)	Forest Preserve District of Will County Map
Lockport	Runyan Preserve	0.5	(0.3)	Forest Preserve District of Will County Map
Lockport	Legion Park	Adjacent		Lockport Township Map/Chicagoland Atlas
Lockport	Lockport Athletic Field	0.9	(0.6)	Lockport Township Map/Chicagoland Atlas
Lockport	Delwood Park	Adjacent		Lockport Township Map/Chicagoland Atlas
Lockport	Lockport Prairie Nature Preserve	0.8	(0.5)	Forest Preserve District of Will County Map
Joilet	Heritage Park	Adjacent		Forest Preserve District of Will County Map

Will County - Union Pacific

Joliet	Rivals Park	0.9	(0.6)	City of Joliet (East) Highway Map/Chicagoland Altas
Joliet	Nowell Park	0.2	(0.1)	City of Joliet (East) Highway Map/Chicagoland Altas
Elwood	Erickson Park	0.5	(0.3)	USGS - Elwood
Elwood	Park	0.2	(0.1)	USGS - Elwood
Elwood	State Soil Conservation Research Farm	Adjacent		Will County Highway Map
Wilmington	Des Plaines Conservation Area	Adjacent		Will County Highway Map
Wilmington	Midewin National Tallgrass Prairie	Adjacent		Will County Highway Map
Wilmington	Park	0.2	(0.1)	USGS - Wilmington
Wilmington	Park	0.5	(0.3)	USGS - Wilmington
Wilmington	Park	1.2	(0.8)	USGS - Wilmington
Wilmington	Park	1.3	(0.8)	USGS - Wilmington
Wilmington	Forsythe Woods Forest Preserve	1.5	(0.9)	USGS - Wilmington
Braidwood	Braidwood Dunes and Savanna Nature Preserve	1.1	(0.7)	Forest Preserve District of Will County Map
Braidwood	Golf Course	Adjacent		USGS - Wilmington
Braidwood	Park	0.6	(0.4)	USGS - Wilmington

Will County - IC Mainline

Monee	Racoon Grove Forest Preserve	Adjacent		Monee Township Map/Forest Preserve District of Will County Map
Monee	Monee Reservoir	Adjacent		Forest Preserve District of Will County Map
Peotone	Community Park	Adjacent		USGS - Peotone
Peotone	Fairground	Adjacent		USGS - Peotone

Will County - Rock Island District

Mokena	Hickory Creek County Forest Preseve	1.3	(0.8)	USGS - Mokena/Chicagoland Atlas
New Lenox	Lions Park	0.9	(0.6)	USGS - Mokena/Chicagoland Atlas
New Lenox	Higinbotham Woods	Adjacent		City of Joliet (East) Highway Map/Chicagoland Atlas
New Lenox	Woodruff Golf Course	0.6	(0.4)	City of Joliet (East) Highway Map/Chicagoland Atlas
New Lenox	Highland Park	0.6	(0.4)	City of Joliet (East) Highway Map/Chicagoland Atlas
New Lenox	Old Plank Road Trail	1.1	(0.7)	Forest Preserve District of Will County Map

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Joliet	Pilcher Park	Adjacent		City of Joliet (East) Highway Map/Chicagoland Atlas

Kankakee County - IC mainline

Manteno	Henrickson Park	0.3	(0.2)	City of Manteno Highway Map
Manteno	Ruder Park	0.2	(0.2)	City of Manteno Highway Map
Manteno	Thes Park	1.0	(0.7)	City of Manteno Highway Map
Manteno	Reed Park	1.0	(0.7)	City of Manteno Highway Map
Manteno	Roadside Park	Adjacent		USGS - Bradley
Kankakee	State Street Park	1.6	(1.0)	Kankakee & Vicinity Highway Map
Kankakee	Old Fair Park	0.6	(0.4)	Kankakee & Vicinity Highway Map
Kankakee	LaVasseur Park	1.1	(0.7)	Kankakee & Vicinity Highway Map
Kankakee	Pioneer Park	1.2	(0.8)	Kankakee & Vicinity Highway Map

Kankakee County - Norfolk Southern

Kankakee	City Park	0.3	(0.2)	Kankakee & Vicinity Highway Map
Kankakee	City Park	1.4	(0.9)	Kankakee & Vicinity Highway Map
Kankakee	Jeffers Park	0.9	(0.6)	Kankakee & Vicinity Highway Map
Kankakee	Governor Small Memorial Park	1.0	(0.6)	Kankakee & Vicinity Highway Map
Kankakee	Bird Park	Adjacent		Kankakee & Vicinity Highway Map
Kankakee	Alpiner Park	0.3	(0.2)	Kankakee & Vicinity Highway Map

Grundy County - IC/UP Alignment

Braceville	Mazon-Braidwood State Fish and Wildlife Area	Adjacent		Grundy County Highway Map
Gardner	Park	0.4	(0.3)	USGS -Gardner
Gardner	Park	0.2	(0.1)	USGS -Gardner
Gardner	Park	0.2	(0.1)	USGS -Gardner

Livingston County - Union Pacific

Dwight	Spencer Park	Adjacent		Village of Dwight Highway Map
Dwight	Garrett Park	Adjacent		Village of Dwight Highway Map
Dwight	Renfrew Park	0.2	(0.2)	Village of Dwight Highway Map
Dwight	Dwight Country Club/ Golf Course	1.6	(1.0)	USGS - Dwight / Livingston County Regional Planning Commission Map
Odell	Miller Memorial Park	0.6	(0.4)	Village of Odell Highway Map
Odell	Odell Village Park	Adjacent		Livingston County Regional Planning Commission Map
Odell	Odell Village Park	0.2	(0.2)	Livingston County Regional Planning Commission Map
Cayuga	Wolf Creek Golf Course	0.4	(0.3)	USGS - Northeast Pontiac / Livingston County Regional Planning Commission Map
Pontiac	Lions Park	0.9	(0.6)	USGS - Northwest Pontiac
Pontiac	Humiston Kiwanis Park	0.8	(0.5)	USGS - Southwest Pontiac
Pontiac	Fell Park	0.2	(0.1)	USGS - Northwest Pontiac
Pontiac	Pontiac Elks Country Club / Golf Course	0.7	(0.5)	USGS - Northwest Pontiac / Liv. Co. Regional Planning Commission Map
Pontiac	Riverview Park	1.4	(0.9)	USGS - Southwest Pontiac

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Pontiac	Camp Humiston Pool	1.3	(0.8)	Livingston County Regional Planning Commission Map
Pontiac	Play Park	0.8	(0.5)	Livingston County Regional Planning Commission Map
Pontiac	Humiston Riverside Park	0.3	(0.2)	USGS - Northwest Pontiac / Liv. Co. Regional Planning Commission Map
Pontiac	Chautauqua Park	1.3	(0.8)	Livingston County Regional Planning Commission Map
Pontiac	Old Airport Park Complex	0.8	(0.5)	Pontiac Area Chamber of Commerce Map (Provided by Liv. Co. Reg. Planning Comm.)

McLean County

Chenoa	Park	0.4	(0.3)	City of Chenoa Highway Map
Chenoa	Park	0.3	(0.2)	City of Chenoa Highway Map
Lexington	Park	Adjacent		USGS-Lexington
Lexington	Park	0.3	(0.2)	USGS-Lexington
Normal	Bicentennial Park	0.8	(0.5)	Bloomington-Normal &Vicinity Highway Map (North)
Normal	Ash Park	0.2	(0.1)	Bloomington-Normal &Vicinity Highway Map (North)
Normal	Fell Park	0.3	(0.2)	Bloomington-Normal &Vicinity Highway Map (North)
Normal	Fairview Park	1.6	(1.0)	Bloomington-Normal &Vicinity Highway Map (North)
Normal	Illinois State University Golf Course	1.6	(1.0)	Bloomington-Normal &Vicinity Highway Map (North)
Normal	Underwood Park	0.7	(0.5)	Bloomington-Normal &Vicinity Highway Map (North)
Bloomington	Ewing Park	1.5	(1.0)	Bloomington-Normal &Vicinity Highway Map (North)
Bloomington	Fell Avenue Park	1.1	(0.7)	Bloomington-Normal &Vicinity Highway Map (South)
Bloomington	Franklin Park	1.0	(0.6)	Bloomington-Normal &Vicinity Highway Map (South)
Bloomington	O'Neill Park	0.6	(0.4)	Bloomington-Normal &Vicinity Highway Map (South)
Bloomington	Park	0.6	(0.4)	Bloomington-Normal &Vicinity Highway Map (South)
Bloomington	Miller Park	0.5	(0.3)	Bloomington-Normal &Vicinity Highway Map (South)
Bloomington	Forest Park	0.8	(0.5)	Bloomington-Normal &Vicinity Highway Map (South)
Bloomington	Highland Park Golf Course	1.0	(0.7)	Bloomington-Normal &Vicinity Highway Map (South)
Funks Grove	Stubblefield Woodlots Nature Preserve	Adjacent		McLean County Highway Map
Funks Grove	Funks Grove Nature Preserve	Adjacent		McLean County Highway Map

Logan County

Lincoln	Railsplitter State Park	Adjacent		Logan County Highway Map
Lincoln	Park	0.3	(0.2)	USGS Lincoln, East
Lincoln	Latham Park	0.2	(0.1)	USGS Lincoln, East
Lincoln	Park	0.2	(0.1)	USGS Lincoln, East
Lincoln	Lincoln Recreational Center	1.2	(0.8)	USGS Lincoln, East
Lincoln	Park	1.1	(0.7)	USGS Lincoln, East
Lincoln	Park	1.1	(0.7)	USGS Lincoln, West
Lincoln	Park	1.1	(0.7)	USGS Lincoln, West
Lincoln	Memorial Park	1.2	(0.8)	USGS Lincoln, West
Elkhart	Roadside Park	Adjacent		USGS Lincoln, West

Sangamon County

Sherman	Roadside Park	Adjacent		USGS - Williamsville

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Sherman	Carpenter Park	0.4	(0.3)	Springfield Area Parks
Sherman	Riverside Park	0.4	(0.3)	Springfield Area Parks
Springfield	Indian Hills Park	0.3	(0.2)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Lincoln Park	0.5	(0.3)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Illinois State Fairgrounds	0.2	(0.2)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Fairview Park	0.3	(0.2)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Gietl Park	1.5	(0.9)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Lanphier Ball Park	0.6	(0.4)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Enos Park	0.2	(0.2)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Douglas Park	1.0	(0.6)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Gehrmann Park	0.2	(0.1)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Washington Park	1.4	(0.9)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Iles Park	0.3	(0.2)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Bunn Park	1.0	(0.6)	Springfield Area Parks/Springfield & Vicinity Highway Map
Springfield	Cox Park	1.6	(1.0)	Springfield Area Parks/Springfield & Vicinity Highway Map
Chatham	Park	0.6	(0.4)	Springfield & Vicinity Highway Map (South)
Woodside	YMCA Campground	1.1	(0.7)	USGS-Chatham
Auburn	Park	Adjacent		USGS - Divernon

Macoupin County

Virden	Park	0.7	(0.5)	USGS - Virden, North
Virden	Park	0.2	(0.2)	USGS - Virden, North
Girard	Park	0.2	(0.1)	USGS - Virden, South
Girard	Park	0.3	(0.2)	USGS - Virden, South
Carlinville	Park	0.4	(0.3)	USGS - Carlinville, West
Carlinville	Park	0.6	(0.4)	USGS - Carlinville, West
Carlinville	Denby Park	0.2	(0.1)	USGS - Carlinville, West
Macoupin Station	Beaver Dam State Park	Adjacent		Macoupin County Highway Map
Shipman	Park	0.2	(0.1)	USGS - Shipman
Brighton	Betsy Ann Park	0.6	(0.4)	USGS - Brighton

Jersey County - No Forest Preserves or Parks

Madison County

Alton	Alton Municpal Golf Course	Adjacent		City of Alton Highway Map
Alton	Rock Springs Park	1.3	(0.8)	City of Alton Highway Map
Alton	Spencer T. Olin Golf Course	0.6	(0.4)	Rand McNally Metro East St. Louis City Map
Alton	Gordon F. Moore Community Park	1.0	(0.7)	Rand McNally Metro East St. Louis City Map
Hartford	Park	Adjacent		City of Hartford Highway Map
Hartford	Lewis & Clark State Memorial Park	0.4	(0.3)	USGS - Wood River
Granite City	Wilson Park	0.5	(0.3)	Granite City Highway Map
Granite City	Depot Golf Course	1.1	(0.7)	Granite City Highway Map
Granite City	Barry Loman Park	0.8	(0.5)	Rand McNally Metro East St. Louis City Map

City/General Area	Park Name	Distance From Track Km.	(Miles)	Source
Granite City	Randall Robertson Park	1.6	(1.0)	Rand McNally Metro East St. Louis City Map

St. Clair County

East St. Louis	Lincoln Park	1.6	(1.0)	Rand McNally Metro East St. Louis City Map

St. Louis County

St. Louis	Gateway Arch/Jefferson Memorial	0.5	(0.3)	Rand McNally St. Louis County Map
St. Louis	Kiener park	1.0	(0.6)	Rand McNally St. Louis County Map
St. Louis	Memorial Plaza	1.1	(0.7)	Rand McNally St. Louis County Map
St. Louis	Aloe Plaza	1.1	(0.7)	Rand McNally St. Louis County Map
St. Louis	Mestres Park	0.2	(0.1)	Rand McNally St. Louis County Map
St. Louis	Soulard Playground	0.6	(0.4)	Rand McNally St. Louis County Map
St. Louis	Pontiac Square Park	1.3	(0.8)	Rand McNally St. Louis County Map
St. Louis	Leisure Park	0.5	(0.3)	Rand McNally St. Louis County Map
St. Louis	Lafayette Park	0.6	(0.4)	Rand McNally St. Louis County Map
St. Louis	Eads Park	1.5	(0.9)	Rand McNally St. Louis County Map
St. Louis	Buder Playground	1.6	(1.0)	Rand McNally St. Louis County Map

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: January 29, 1997
Name Of Project: High Speed Rail - Chicago to St. Louis	Federal Agency Involved: DOT - FHWA - FRA
Proposed Land Use: Commuter Rail Service	County And State: Illinois (see enclosed map)
PART II *(To be completed by SCS)*	Date Request Received By SCS: 2-25-97

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).* Yes ☒ No ☐

Acres Irrigated	Average Farm Size
—	321

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined in FPPA
Corn, Soybeans, Wheat, Hay	Acres: 29,633,500 % 97	Acres: 27,695,900 % 91

Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By SCS
Illinois	Statewide	2-26-97

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: GG Site A	IC/Site B UP	Conrail	RI Site D
A. Total Acres To Be Converted Directly	432	118	186	118
B. Total Acres To Be Converted Indirectly	0	0	0	0
C. Total Acres In Site	432	118	186	118
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	385.03	106.0	161	106
B. Total Acres Statewide And Local Important Farmland	47.0	12	21	12
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0016	0.0004	0.0007	0.0004
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	64.5	23.7	61.9	23.7
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)* 150* (x1.5)	87	~~70~~	~~85~~	~~70~~
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 652.5(b)* — Maximum Points	131	105	128	105
1. Area In Nonurban Use				
2. Perimeter In Nonurban Use				
3. Percent Of Site Being Farmed				
4. Protection Provided By State And Local Government				
5. Distance From Urban Builtup Area				
6. Distance To Urban Support Services				
7. Size Of Present Farm Unit Compared To Average				
8. Creation Of Nonfarmable Farmland				
9. Availability Of Farm Support Services				
10. On-Farm Investments				
11. Effects Of Conversion On Farm Support Services				
12. Compatibility With Existing Agricultural Use				
TOTAL SITE ASSESSMENT POINTS 150* ~~160~~	116	61	63	61
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland *(From Part V)* 150* ~~100~~	131	105	128	105
Total Site Assessment *(From Part VI above or a local site assessment)* 150* ~~160~~	116	61	63	61
TOTAL POINTS *(Total of above 2 lines)* 300* ~~260~~	247	166	191	166

(See the attached ILLINOIS Site Assessment Corridor Factors)

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☒ State Corridor Factors

Reason For Selection:

* When using the State's Site Assessment (SA) Corridor Factors, 150 points are assigned to the Land Evaluation (LE) portion and 150 points are assigned to the Site Assessment (SA) portion for a maximum score of 300 points.

(See Instructions on reverse side) Form AD-1006 (10-83)

High Speed Rail
Chicago, Illinois to St. Louis, Missouri
USDOT, FHWA, and FRA Funds

PART VI-B Illinois Site Assessment CORRIDOR Factors	Maximum Points	GG	IC/UP	Conrail	RI
1. Amount of Agricultural Land Required	30	15	0	0	0
2. Location of the Proposed Alignment	30	21	20	20	20
3. Acres of Off-site Agricultural Land Required for Borrow Materials	15	15	15	15	15
4. Acres of Prime and Important Farmland Required for Mitigation	15	15	15	15	15
5. Creation of Severed Farm Parcels	10	10	0	0	0
6. Creation of Uneconomical Remnants	10	10	0	1	0
7. Creation of Landlocked Parcels	10	0	0	0	0
8. Creation of Adverse Travel	10	10	1	2	1
9. Relocations of Rural Residences and Farm Buildings	10	10	0	0	0
10. Utilization of Minimum Design Standards	10	10	10	10	10
TOTAL SITE ASSESSMENT CORRIDOR POINTS	**150**	**116**	**61**	**63**	**61**
PART VII					
Relative Value of Farmland	150	131	105	128	105
Total Site Assessment CORRIDOR Factors	150	116	61	63	61
TOTAL ILLINOIS LESA POINTS	**300**	**247**	**166**	**191**	**166**

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Appendix B
PROPOSED HIGHWAY-RAILROAD AT-GRADE CROSSING TREATMENTS

Appendix B
PROPOSED HIGHWAY-RAILROAD AT-GRADE CROSSING TREATMENTS SUMMARY OF METHODOLOGY USED FOR RAIL CROSSING ANALYSIS

B.1 INTRODUCTION

The Chicago to St. Louis High-Speed Rail Corridor is a portion of one of the five Intermodal Surface Transportation Efficiency Act (ISTEA) Section 1010 high-speed rail corridors. As train speeds increase in high-speed rail corridors, traditional crossing protection, which requires vehicle operators to evaluate their ability to proceed across a crossing safely, becomes less effective. As a result, the potential severity of an accident to the vehicle, the train and the occupants increases. Along these corridors, the Federal Railroad Administration (FRA) has recommended that all existing crossings should either be closed, grade separated, or equipped with special signing and active warning devices, and/or gates with constant warning time. The cost of grade separating or even providing upgraded warning devices at all crossings along prospective high-speed rail corridors is prohibitive. Closure of nonessential crossings on high-speed rail corridors will enhance the safety of railroad passengers and highway users.

Increases in train speeds along high-speed rail corridors warrant an increase in the level of grade crossing protection. Yet, train operations do not always provide for increased train speeds over the entire corridor due to lengthy deceleration and acceleration at stations or alignment restrictions. The FRA has suggested a national goal of reducing the number of the nation's public and private crossings by 25 percent by the year 2000. Therefore, consistent with FRA guidelines and good engineering practice, the number of crossings should be minimized and the remaining ones warned or protected as appropriate. Whether a crossing is eliminated or improved is generally based on the number and speed of trains, vehicular usage and nearby availability of alternate, appropriate existing crossings or crossings that will be improved as part of the corridor project.

B.2 METHODOLOGY

A comprehensive and systematic corridor approach was developed to evaluate rail crossings for the Chicago to St. Louis High-Speed Rail Corridor. A corridor approach, which is recommended for ISTEA Section 1010 corridors, evaluates multiple rail crossings in a rail segment rather than individual crossings. The approach is a multi-modal effort to improve rail efficiency while also improving pedestrian, vehicular and rail safety. The approach for evaluating the rail crossings consists of the following steps:

- Review of previous public comments;
- Acquisition of new data;
- Discussions with local officials, county engineers and planners;
- Estimates of train speeds;
- Evaluation of vehicular traffic demand, roadway/crossing capacity and accident data;
- Classification of crossings by function and use;
- Identification of travel markets served by the crossings;

- Estimates of adverse travel; and
- Development of preliminary grade crossing treatment recommendations.

B.2.1 Review of Previous Public Comments

A previous grade crossing study, the Chicago-St. Louis High-Speed Rail Study Grade Crossing Safety Analysis, Volumes I-IV, October 1993, and Grade Crossing Safety Analysis for Peotone Alternative Routes, Volumes I and II, February 1994, was prepared by Envirodyne Engineers, Inc. Public comments received regarding this study were reviewed to familiarize the study team with relevant corridor issues. Additionally, some of the existing conditions information from the previous study was used to supplement the data base. Each of the highway-railroad at-grade crossings in the corridor was reevaluated for this project to determine what type of warning device or protection should be provided if high-speed rail service were implemented. The recommendations presented in this document supersede those from the 1993 and 1994 studies.

B.2.2 Acquisition of New Data

The study team collected available ambulance, police and other emergency services district boundaries and routes; locations of hospitals; locations of schools and bus routes; locations of regional grain elevators and other major agribusinesses; and additional secondary source data.

B.2.3 Discussions with Local Officials, County Engineers and Planners

One significant source of secondary data were local county engineers and county and regional planners along the corridor. The study team met with representatives from each county and, in some cases cities, villages, and regional development agencies during the data collection process. The previous public comments regarding prior proposed grade crossing treatments were consolidated on a corridor map and discussed with these local jurisdictions.

B.2.4 Train Speed Estimates

Grade crossing protection and warning devices on high-speed rail corridors are dependent on predicted train speeds. The study team analyzed the potential operating speeds of the corridor using a simulation model to identify areas with the following speed ranges: less than 80 miles per hour, 80 to 110 miles per hour, and 110 to 125 miles per hour. Crossing treatments for locations where train speed is less than 110 miles per hour will generally conform to the rules and requirements of the Illinois Commerce Commission (ICC), the Manual on Uniform Traffic Control Devices for Streets and Highways, and Chapter 7 of the Illinois Department of Transportation (IDOT) Bureau of Design and Environment Manual.

For train operation between 80 and 110 mph, the guidelines recommend closure of redundant crossings, improved signing, and upgraded warning devices equipped with constant warning time equipment.

Train operations between 110 and 125 mph require positive protection, which not only protect the motor vehicle operator but also protect the train from intrusion of a vehicle onto the crossing. IDOT has successfully crash tested a prototype Vehicle Arresting Barrier (VAB) which, when activated by an approaching train, will lower a net across the roadway on each side of the tracks to intercept an

approaching vehicle on the highway. The VAB system will also have a vehicle intrusion detection system to detect vehicles that have been arrested by the net. Where closure or grade separation of crossings is not practical, VABs are considered an alternative.

Although train speeds of 140 mph were evaluated in previous studies for the corridor, top speeds of 125 mph were considered in these evaluations.

B.2.5 Evaluation of Vehicular Traffic Demand, Roadway/Crossing Capacity and Accident Data

The preliminary sources of vehicular traffic demand — Average Daily Traffic (ADT) — were obtained from the 1993 and 1994 grade crossing safety analysis and 1995 24-hour machine traffic counts. A minimum ADT of one was used for occasional use facilities, such as farm entrances, and zero was used for crossings limited to emergency use only and for crossings that did not appear to be used at all. Many ADTs have been updated using available IDOT county traffic maps. For some low to moderate volume public roads and many private crossings, ADTs were determined (counted) in the Fall of 1995.

In accordance with ICC rules, crossing treatments for locations where the train speeds are less than 80 miles per hour are dependent upon the product of the ADT times the average number of daily train movements and safe stopping sight distances. Locations where the crossing treatment may be sensitive to the ADT will be identified and reviewed prior to finalizing the rail crossing treatment proposed.

Accident data was also used to identify candidate crossings for closure and improvements.

B.2.6 Classification of Crossings by Function and Use

The previous grade crossing safety analysis categorized the crossing locations by rail corridor segments. In this phase, crossing locations are categorized by county. Consistent with a corridor approach, the study team categorized each crossing within each county by function and use. At-grade crossings on state, county, township or municipal routes which are important for maintaining interregional route continuity; in contiguous central business districts, neighborhoods, industrial areas or agricultural areas; or on the only available route between probable destination pairs were given highest consideration for retention as remaining open. At-grade crossings on other, less critical, state, county, township, and municipal routes, local routes and private crossings were given primary consideration for crossing elimination and closure.

B.2.7 Identification of Travel Markets Served by the Crossings

At-grade crossings on routes which serve special travel markets were identified and given highest consideration for remaining in service. These travel markets included public services, such as school buses and emergency service providers, transportation-dependent businesses or commerce and hazardous waste carriers.

B.2.8 Estimate of Adverse Travel

The Illinois Commerce Commission has developed a set of rules (Title 92, Chapter III, Subchapter c, Part 1536) for grade crossing closure and opening. According to these rules, a crossing should not be eliminated if the closure would result in unduly burdensome adverse travel for the users of the crossing. The Commission considers the amount of adverse distance (which the closure will cause) to not be considered unduly burdensome if:

(1) it is equal to or less than four miles in unincorporated areas; or
(2) it is equal to or less than 0.75 miles in incorporated towns, villages, and cities.

The Commission also requires consent of the affected highway agency(s) if two adjacent crossings are closed and the distance between the two crossings — as measured along the railroad tracks — is equal to or greater than one mile.

The study team determined the amount of adverse travel for each at-grade crossing to identify candidates for closure. The presence of adequate adjacent routes was also determined for each crossing identified as a candidate for closure. The alternate railroad crossing roadway was considered adequate if it has an all-weather surface; sufficient width (capacity) to accommodate its existing and rerouted vehicular traffic; the same type(s) of vehicular traffic; and an appropriate crossing treatment. Alternate crossings should be on routes which have adequate vertical and horizontal clearances, particularly in agricultural areas.

B.2.9 Develop Preliminary Concepts and Grade Crossing Treatments

The preliminary concepts and grade crossing treatments were developed jointly by a multi-disciplined study team using video of the corridor and field reconnaissance of critical locations. The suggested action includes the proposed status of the crossing (opened or closed) and the recommended crossing treatment (e.g. warning devices, vehicle arresting barrier, or separation).

For any at-grade crossing that is proposed to remain open and provided with active warning devices — primarily flashing lights and gates — constant warning time (CWT) capabilities are suggested. This would include upgrades, if necessary, of existing warning devices to provide this feature where it is not currently present.

B.3 RESULTS

The grade crossing treatment recommendations were developed as a result of a systematic and comprehensive corridor approach, and are consistent with FRA guidelines, previous public comments and recommendations received from local officials. Where a crossing is proposed for closure, traffic can be rerouted to another crossing which has an equal or better protective device or a grade separation. This will reduce or eliminate the potential for train-vehicle accidents. Traffic will increase on the crossings where traffic rerouting is proposed. In all instances where crossings are proposed to be closed, adequate reserve capacity exists on the adjacent crossings proposed to remain open to accommodate this rerouted traffic. The recommended grade crossing treatments for the Chicago - St. Louis High-Speed Rail Project are shown on the following table.

Appendix B
PROPOSED HIGHWAY-RAILROAD AT-GRADE CROSSING TREATMENTS

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Cook	CHI-STL	Lumber Street	1.80	Cantilever flashing lights	Conv. Gates	Close
Cook	CHI-STL	Homan Avenue	6.32	Flashing lights	Conv. Gates	DTBD
Cook	CHI-STL	Station Platform (Pedestrian)	12.00	None	Ped. Bell and Flashers	DTBD
Cook	CHI-STL	GATX	14.30	Gates	No Change	DTBD
Cook	CHI-STL	Shell	14.70	Stop sign and bell	Conv. Gates	DTBD
Cook	CHI-STL	3M Media	16.01	None	Close	Close
Cook	CHI-STL	Station Platform (Pedestrian)	17.52	None	Ped. Bell and Flashers	Close
Cook	CHI-STL	Old Willow Springs	17.54	Gates	No Change	DTBD
Cook	CHI-STL	Rowell Chemical Corporation	19.85	Gates	No Change	Grade Sep.
Cook	CHI-STL	McGuire Street	23.40	Stop sign	Conv. Gates	DTBD
Cook	CHI-STL	Boyer Street	23.50	Stop sign	Close w/Frontage Road	Close
Cook	CHI-STL	Spruce Street	24.71	Gates	No Change	DTBD
Cook	CHI-STL	Holmes Street	24.95	Gates	No Change	Close
Cook	CHI-STL	Stephen Street	25.10	Cantilever flashing lights with gates	No Change	DTBD
Cook	CHI-STL	Lemont Street	25.17	Gates	No Change	Close
Cook	CHI-STL	Station Platform (Pedestrian)	25.35	None	Ped. Bell and Flashers	DTBD
Cook	CHI-STL	Industrial Street	25.80	Gates	No Change	Close
Cook	CHI-STL	Castle Flagstone	26.50	None	Close w/Frontage Road	Close
Will	CHI-STL	Thomas	27.15	Gates	No Change	Close
Will	CHI-STL	Unocal	27.25	Gates	Close w/Frontage Road	DTBD
Will	CHI-STL	Seneca Petroleum	27.70	Gates	No Change	Close
Will	CHI-STL	Uno-Ven North Gate	27.90	Gates	No Change	DTBD
Will	CHI-STL	Romeoville Road	29.00	Gates	Grade Sep.	Grade Sep.
Will	CHI-STL	Private Road	29.70	None	Elec. Lock Gates	Close
Will	CHI-STL	Texaco	30.60	None	No Change	Close
Will	CHI-STL	2nd Street	32.06	Gates	No Change	Close
Will	CHI-STL	6th Street	32.40	Gates	No Change	Close
Will	CHI-STL	8th Street (Pedestrian)	32.51	Flashing lights	Ped. Bell and Flashers	DTBD
Will	CHI-STL	9th Street/SR 7	32.59	Gates	No Change	DTBD
Will	CHI-STL	10th Street	32.70	Gates	No Change	Close
Will	CHI-STL	11th Street	32.74	Gates	No Change	Close
Will	CHI-STL	13th Street	32.89	Gates	No Change	Close
Will	CHI-STL	Division Street	33.11	Gates	No Change	Close
Will	CHI-STL	Pedestrian Crossing	33.45	None	Grade Sep.	
Will	CHI-STL	Ohio Street	36.64	Cantilever flashing lights with gates	No Change	DTBD

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Will	CHI-STL	Jackson Street	36.77	Cantilever flashing lights with gates	No Change	DTBD
Will	CHI-STL	Laraway Road	40.36	Flashing lights	Conv. Gates	DTBD
Will	CHI-STL	Schweitzer Road	41.44	Flashing lights	Close	Close
Will	CHI-STL	Sharp Road	41.96	Crossbucks	Close	Close
Will	CHI-STL	Millsdale Road	42.45	Crossbucks	Conv. Gates	Close
Will	CHI-STL	Arsenal Road	44.00	Flashing lights	Conv. Gates	DTBD
Will	CHI-STL	Diagonal Road	45.00	Crossbucks	Close	Close
Will	CHI-STL	Mississippi Street	45.77	Flashing lights	Conv. Gates	DTBD
Will	CHI-STL	Chicago Street	46.10	Flashing lights	Close	Close
Will	CHI-STL	Hoff Road	46.64	Gates	No Change	DTBD
Will	CHI-STL	Pump Crossing	47.82	Crossbucks	Close	Close
Will	CHI-STL	Ordnance	48.60	Gates	No Change	Elec. Lock Gates
Will	CHI-STL	Damien Mills Road	49.91	Stop sign	Conv. Gates	DTBD
Will	CHI-STL	River Road	51.40	Flashing lights	Conv. Gates	DTBD
Will	CHI-STL	Peotone Road	51.94	Flashing lights	Close	Close
Will	CHI-STL	Residential	52.42	Crossbucks	Close	Close
Will	CHI-STL	Kankakee Street	52.54	Gates	No Change	DTBD
Will	CHI-STL	Widows Road	53.00	Bell - Wig Wag	Conv. Gates	DTBD
Will	CHI-STL	Strip Mine Road	53.42	Cantilever flashing lights with gates	No Change	DTBD
Will	CHI-STL	Coal City Road	54.85	Flashing lights	Conv. Gates	Close
Will	CHI-STL	Main Street	57.31	Gates	No Change	DTBD
Will	CHI-STL	Center Street	57.71	Flashing lights	Close	Close
Will	CHI-STL	Division Street	58.41	Flashing lights	Conv. Gates	Close
Will	CHI-STL	County Line Road	59.84	Flashing lights	Conv. Gates	DTBD
Grundy	CHI-STL	Main Street	61.06	Flashing lights	Close	Close
Grundy	CHI-STL	Mitchell Street	61.26	Flashing lights	Conv. Gates	DTBD
Grundy	CHI-STL	Storm Road	64.07	Flashing lights	Conv. Gates	Close
Grundy	CHI-STL	Washington Street	64.36	Flashing lights	Conv. Gates	Close
Grundy	CHI-STL	Division Street	64.47	Flashing lights	Close	DTBD
Grundy	CHI-STL	Jackson Street	64.63	Cantilever flashing lights	Conv. Gates	Close
Grundy	CHI-STL	Main Street	64.75	Flashing lights	Conv. Gates	DTBD
Grundy	CHI-STL	Maher Road	65.50	Crossbucks	Close w/Frontage Road	Close
Grundy	CHI-STL	Farm	66.60	None	Close w/Frontage Road	Close
Grundy	CHI-STL	Gorman Road	66.91	Crossbucks	Conv. Gates	DTBD
Grundy	CHI-STL	Farm	67.95	None	Close w/Frontage Road	Close
Grundy	CHI-STL	Filman Road	68.33	Crossbucks	Close	Close
Grundy	CHI-STL	Stonewall Road	69.09	Crossbucks	Conv. Gates	DTBD
Grundy	CHI-STL	Gantzert Road	69.74	Crossbucks	Close	Close
Grundy	CHI-STL	Scully Road	70.52	Crossbucks	Conv. Gates	Close
Grundy	CHI-STL	Mazon Road	71.14	Crossbucks	Close	Close
Livingston	CHI-STL	Livingston Road/ TR 1H	71.95	Crossbucks	Conv. Gates	DTBD

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Livingston	CHI-STL	Union Avenue/ SR 47	73.10	Gates	No Change	Grade Sep.
Livingston	CHI-STL	Mazon Avenue/ SR 17	73.51	Gates	No Change	Close
Livingston	CHI-STL	North Depot (Pedestrian)	73.55	None	Close	Close
Livingston	CHI-STL	South Depot (Pedestrian)	73.65	None	Ped. Bell and Flashers	Close
Livingston	CHI-STL	Chippewa Street	73.70	Gates	No Change	DTBD
Livingston	CHI-STL	Washington Street	73.95	Gates	No Change	Close
Livingston	CHI-STL	TR 19B	74.93	Flashing lights	Conv. Gates	Close
Livingston	CHI-STL	TR 220	75.93	Crossbucks	Conv. Gates	Close
Livingston	CHI-STL	TR 216B	76.88	Crossbucks	Conv. Gates	Close
Livingston	CHI-STL	Private Road	78.70	None	Elec. Lock Gates	Close
Livingston	CHI-STL	TR 41C	78.96	Crossbucks	Conv. Gates	DTBD
Livingston	CHI-STL	TR 47B	80.21	Crossbucks	Conv. Gates	Close
Livingston	CHI-STL	Prairie Street	81.43	Flashing lights	Conv. Gates	DTBD
Livingston	CHI-STL	Scott Street	81.52	Gates	Close	Close
Livingston	CHI-STL	Tremont Street	81.65	Gates	No Change	DTBD
Livingston	CHI-STL	Hamilton Street	81.72	Gates	Close	Close
Livingston	CHI-STL	TR 69	82.69	Gates	No Change	Close
Livingston	CHI-STL	Main Street	86.92	Flashing lights	Conv. Gates	Close
Livingston	CHI-STL	TR 113A/Bunge Road	88.90	Flashing lights	Conv. Gates	Close
Livingston	CHI-STL	Aurora Street	90.62	Flashing lights	Conv. Gates	Close
Livingston	CHI-STL	Main Street	91.13	Flashing lights	Conv. Gates	DTBD
Livingston	CHI-STL	Division Street	91.59	Gates	No Change	Close
Livingston	CHI-STL	Cleary Street	91.65	Gates	No Change	DTBD
Livingston	CHI-STL	North Street (Pedestrian)	91.71	None	Close	
Livingston	CHI-STL	Howard Street	91.90	Gates	No Change	Grade Sep.
Livingston	CHI-STL	Madison Street	91.97	Gates	No Change	Close
Livingston	CHI-STL	Washington Street	92.07	Gates	No Change	Close
Livingston	CHI-STL	Reynolds Street/SR 116	92.47	Gates	No Change	DTBD
Livingston	CHI-STL	TR 137A	93.59	Flashing lights	Conv. Gates	Elec. Lock Gates
Livingston	CHI-STL	TR 145A	94.71	Gates	Close	DTBD
Livingston	CHI-STL	Farm	95.00	None	Close w/Frontage Road	Close
Livingston	CHI-STL	Farm	95.50	None	Close	Close
Livingston	CHI-STL	TR 159	95.85	Flashing lights	Conv. Gates	DTBD
Livingston	CHI-STL	Farm	96.40	None	Close w/Frontage Road	Close
Livingston	CHI-STL	Farm	96.60	None	Close w/Frontage Road	Close
Livingston	CHI-STL	CR 8	98.08	Gates	No Change	DTBD
Livingston	CHI-STL	TR 195A	99.20	Flashing lights	Conv. Gates	DTBD
Livingston	CHI-STL	Farm	99.50	Stop sign	Warn. Sign and Lights	Close
Livingston	CHI-STL	Farm	100.30	None	Close w/Frontage Road	Close

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Livingston	CHI-STL	TR 209	100.87	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	TR 1B	101.44	Flashing lights	Conv. Gates	Close
McLean	CHI-STL	Division Street	102.04	Gates	No Change	DTBD
McLean	CHI-STL	Owsley Street	102.37	Gates	No Change	Close
McLean	CHI-STL	Cemetery Street/ U.S. 24	102.57	Gates	No Change	DTBD
McLean	CHI-STL	TR 23A	103.69	Flashing lights	Conv. Gates	Close
McLean	CHI-STL	Farm	104.30	None	Close w/Frontage Road	Close
McLean	CHI-STL	TR 35A	105.93	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Farm	106.30	None	Close w/Frontage Road	Close
McLean	CHI-STL	Farm	107.50	None	Elec. Lock Gates	Close
McLean	CHI-STL	Orange Street	108.90	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	North Street	110.10	Gates	Close	Close
McLean	CHI-STL	Main Street	110.27	Cantilever flashing lights with gates	No Change	DTBD
McLean	CHI-STL	Chestnut Street	110.36	Flashing lights	Conv. Gates	Close
McLean	CHI-STL	TR 83	111.65	Flashing lights	Conv. Gates	Close
McLean	CHI-STL	Killian Road	113.49	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Private	114.80	None	Close w/Frontage Road	Close
McLean	CHI-STL	TR 358A	115.18	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Washington Street	118.05	Flashing lights	Close	DTBD
McLean	CHI-STL	Madison Street	118.12	Flashing lights	Conv. Gates	Close
McLean	CHI-STL	Jefferson Street	118.25	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	TR 306A	120.03	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Farm	120.50	None	Close	Close
McLean	CHI-STL	Ft. Jesse Road	123.40	Gates	No Change	DTBD
McLean	CHI-STL	Beech Street	123.67	Gates	No Change	Close
McLean	CHI-STL	Mulberry Street	123.79	Gates	No Change	DTBD
McLean	CHI-STL	College Avenue	123.91	Gates	No Change	DTBD
McLean	CHI-STL	Linden Street	124.00	Gates	No Change	DTBD
McLean	CHI-STL	Station (Pedestrian Crossing)	124.15	None	Ped. Bell and Flashers	Close
McLean	CHI-STL	Broadway Street	124.20	Gates	No Change	Close
McLean	CHI-STL	Fell Avenue	124.28	Gates	No Change	DTBD
McLean	CHI-STL	Hester Street (Pedestrian)	124.35	None	Close	Close
McLean	CHI-STL	University Street	124.68	Gates	No Change	No Change
McLean	CHI-STL	Washington Street	126.50	Cantilever flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Miller Street	127.19	Gates	Close	Close
McLean	CHI-STL	Six Points Road	128.09	Gates	No Change	DTBD
McLean	CHI-STL	TR 443	133.70	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Farm	134.90	None	Close w/Frontage Road	Close
McLean	CHI-STL	Funks Grove Road	136.35	Flashing lights	Conv. Gates	DTBD
McLean	CHI-STL	Farm	136.95	None	Close	Close
McLean	CHI-STL	TR 533	139.12	Gates	No Change	DTBD

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
McLean	CHI-STL	Railroad Avenue	140.91	Gates	No Change	DTBD
McLean	CHI-STL	U.S. 136	141.16	Gates	No Change	Grade Sep.
McLean	CHI-STL	Farm	143.40	None	No Change	Close
McLean	CHI-STL	TR 38	143.74	Stop sign	Conv. Gates	Close
Logan	CHI-STL	Private	144.44	None	Elec. Lock Gates	
Logan	CHI-STL	Elm Street	145.75	Gates	No Change	Close
Logan	CHI-STL	Vine Street	145.81	Cantilever flashing lights with gates	No Change	DTBD
Logan	CHI-STL	Race Street	145.85	Cantilever flashing lights with gates	No Change	Close
Logan	CHI-STL	Lazy Row Road/ TR 51	147.60	Flashing lights	Grade Sep.	Close
Logan	CHI-STL	Main Street	149.75	Flashing lights	Conv. Gates	Close
Logan	CHI-STL	Lincoln Street	150.15	Gates	Close	DTBD
Logan	CHI-STL	TR 222	152.18	Flashing lights	Conv. Gates	Close
Logan	CHI-STL	TR 93	153.46	Gates	No Change	DTBD
Logan	CHI-STL	Burlington St. (Ped. Crossing)	155.88	None	Close	Close
Logan	CHI-STL	Keokuk Street	155.95	Cantilever flashing lights with gates	No Change	Close
Logan	CHI-STL	Peoria Street (Ped. Crossing)	156.09	None	Close	Close
Logan	CHI-STL	Tremont Street	156.16	Gates	No Change	Close
Logan	CHI-STL	Pekin Street	156.32	Gates	No Change	DTBD
Logan	CHI-STL	Broadway Street	156.38	Gates	No Change	DTBD
Logan	CHI-STL	Pulaski Street	156.45	Gates	No Change	DTBD
Logan	CHI-STL	Clinton Street	156.52	Gates	No Change	DTBD
Logan	CHI-STL	Decatur Street	156.60	Gates	No Change	Close
Logan	CHI-STL	TR 128	159.40	Gates	Veh. Arr. Barrier	DTBD
Logan	CHI-STL	TR 149A	161.30	Flashing lights	Veh. Arr. Barrier	Close
Logan	CHI-STL	Pedestrian Crossing	163.40	None	Close	Close
Logan	CHI-STL	Main Street	163.45	Gates	Veh. Arr. Barrier	DTBD
Logan	CHI-STL	Farm	166.20	None	Close w/Frontage Road	Close
Logan	CHI-STL	Oglesby Street	167.30	Cantilever flashing lights with gates	Veh. Arr. Barrier	DTBD
Logan	CHI-STL	TR 199A	168.50	Gates	Veh. Arr. Barrier	DTBD
Logan	CHI-STL	TR 50A	169.80	Gates	Close w/Frontage Road	Close
Sangamon	CHI-STL	TR 5	172.35	Flashing lights	Veh. Arr. Barrier	DTBD
Sangamon	CHI-STL	Pedestrian Crossing	172.90	None	Close	Close
Sangamon	CHI-STL	Pedestrian Crossing	172.95	None	Close	Close
Sangamon	CHI-STL	Main Street	173.00	Gates w/Median	Veh. Arr. Barrier	DTBD
Sangamon	CHI-STL	Emergency	173.30	Locked gate	Elec. Lock Gates	Close
Sangamon	CHI-STL	TR 33/ Wolf Road	176.70	Flashing lights	Veh. Arr. Barrier	Close
Sangamon	CHI-STL	Andrew Road	177.87	Gates	Veh. Arr. Barrier	DTBD
Sangamon	CHI-STL	Carter Brothers	179.60	None	Grade Sep.	DTBD
Sangamon	CHI-STL	Sand Hill Road	180.60	Gates	Veh. Arr. Barrier	Close

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Sangamon	CHI-STL	Ridgely Avenue	183.40	Flashing lights	Conv. Gates	Close
Sangamon	CHI-STL	Eighth Street	183.80	Gates	No Change	DTBD
Sangamon	CHI-STL	Converse Street	183.85	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	North Grand Avenue	184.10	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Sixth Street	184.15	Gates	No Change	DTBD
Sangamon	CHI-STL	Fifth Street	184.20	Gates	No Change	DTBD
Sangamon	CHI-STL	Fourth Street	184.40	Cantilever flashing lights	Conv. Gates	DTBD
Sangamon	CHI-STL	Union Street	184.60	Flashing lights	Close	Close
Sangamon	CHI-STL	Carpenter Street	184.68	Gates	No Change	DTBD
Sangamon	CHI-STL	Madison Street	185.00	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Jefferson Street	185.10	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Washington Street	185.21	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Adams Street	185.30	Gates	No Change	DTBD
Sangamon	CHI-STL	Monroe Street	185.32	Gates	No Change	DTBD
Sangamon	CHI-STL	Jackson Street	185.50	Cantilever flashing lights with gates	No Change	Close
Sangamon	CHI-STL	Cook Street	185.64	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Lawrence Avenue	185.70	Gates	No Change	DTBD
Sangamon	CHI-STL	Canedy Street	185.80	Cantilever flashing lights	No Change	Close
Sangamon	CHI-STL	Scarritt Street	185.90	Cantilever flashing lights	Close	DTBD
Sangamon	CHI-STL	Allen Street	186.02	Cantilever flashing lights	No Change	Close
Sangamon	CHI-STL	South Grand Avenue	186.18	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Cedar Street	186.33	Cantilever flashing lights	No Change	Close
Sangamon	CHI-STL	Laurel Street	186.50	Gates	No Change	DTBD
Sangamon	CHI-STL	Ash Street	186.70	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Iles Avenue	187.30	Gates	No Change	Close
Sangamon	CHI-STL	Hazel Dell Road	189.40	Gates	No Change	DTBD
Sangamon	CHI-STL	Woodside Road	191.10	Gates	No Change	DTBD
Sangamon	CHI-STL	Farm	193.00	None	Close w/Frontage Road	DTBD
Sangamon	CHI-STL	Farm	193.80	None	Close w/Frontage Road	Close
Sangamon	CHI-STL	Walnut Street /CR 40	194.40	Gates	No Change	DTBD
Sangamon	CHI-STL	Mulberry Street	194.50	Gates	Close	Close
Sangamon	CHI-STL	Locust Street (Pedestrian)	194.60	None	Close	Close
Sangamon	CHI-STL	Spruce Street	194.72	Gates	No Change	DTBD
Sangamon	CHI-STL	Farm	195.60	None	Elec. Lock Gates	Close
Sangamon	CHI-STL	Farm	196.40	None	Elec. Lock Gates	DTBD
Sangamon	CHI-STL	Farm	196.90	None	Elec. Lock Gates	Close

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Sangamon	CHI-STL	Covered Bridge Road/ TR 369	197.60	Flashing lights	Conv. Gates	DTBD
Sangamon	CHI-STL	TR 371	198.10	Crossbucks	Close w/Frontage Road	Close
Sangamon	CHI-STL	TR 391	198.60	Crossbucks	Conv. Gates	Close
Sangamon	CHI-STL	TR 405	199.70	Crossbucks	Conv. Gates	Close
Sangamon	CHI-STL	Washington Street	200.45	Flashing lights	Conv. Gates	DTBD
Sangamon	CHI-STL	Adams Street (Pedestrian)	200.50	None	Close	Close
Sangamon	CHI-STL	Jefferson Street (Pedestrian)	200.55	None	Close	DTBD
Sangamon	CHI-STL	Madison Street	200.60	Gates	No Change	Close
Sangamon	CHI-STL	Monroe Street (Pedestrian)	200.70	None	Close	Close
Sangamon	CHI-STL	Jackson Street	200.80	Cantilever flashing lights with gates	No Change	DTBD
Sangamon	CHI-STL	Van Buren Street (Pedestrian)	200.85	None	Close	Close
Sangamon	CHI-STL	Farm	201.20	None	Close w/Frontage Road	Close
Sangamon	CHI-STL	Farm	201.30	None	Elec. Lock Gates	Close
Sangamon	CHI-STL	Farm	201.70	None	Close w/Frontage Road	Close
Sangamon	CHI-STL	Farm	202.10	None	Close w/Frontage Road	Close
Sangamon	CHI-STL	FAS 625	202.30	Flashing lights	Conv. Gates	DTBD
Sangamon	CHI-STL	TR 445B	203.40	Crossbucks	Close	Close
Sangamon	CHI-STL	Main Street	204.40	Flashing lights	Conv. Gates	Close
Sangamon	CHI-STL	TR 7	205.40	Bell	Conv. Gates	Close
Macoupin	CHI-STL	Jackson Street	206.90	Gates	No Change	DTBD
Macoupin	CHI-STL	Residential (Pedestrian)	207.10	None	Close	Close
Macoupin	CHI-STL	Holden Street	207.20	Gates	No Change	Close
Macoupin	CHI-STL	CR 58	208.50	Gates	No Change	DTBD
Macoupin	CHI-STL	TR 67	209.50	Crossbucks	Conv. Gates	Close
Macoupin	CHI-STL	Industrial (Pedestrian)	210.70	None	Close	Close
Macoupin	CHI-STL	Center Street	210.80	Gates	No Change	DTBD
Macoupin	CHI-STL	Madison Street	210.90	Gates	Close	Close
Macoupin	CHI-STL	West South Street	211.10	Gates	No Change	Grade Sep.
Macoupin	CHI-STL	Old Rte. 4	211.80	Gates	Close	Close
Macoupin	CHI-STL	TR 105	212.70	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	Morean Street	214.51	Gates	No Change	DTBD
Macoupin	CHI-STL	TR 145	216.20	Crossbucks	Conv. Gates	Close
Macoupin	CHI-STL	TR 394	217.10	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	TR 175	218.40	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	TR 189	219.60	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	Farm	221.30	None	Close	Close
Macoupin	CHI-STL	CR 60	221.90	Flashing lights	Conv. Gates	Close
Macoupin	CHI-STL	North Broad Street	222.90	Gates	No Change	DTBD

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Macoupin	CHI-STL	Buchanen (Pedestrian)	223.20	None	Close	Close
Macoupin	CHI-STL	Nicholas Street	223.30	Gates	No Change	Close
Macoupin	CHI-STL	Residential (Pedestrian)	223.70	None	Close	Close
Macoupin	CHI-STL	Main Street/ SR 108	223.80	Gates	No Change	DTBD
Macoupin	CHI-STL	TR 249	225.30	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	Farm	226.20	Stop sign	Conv. Gates	Close
Macoupin	CHI-STL	Farm	227.50	None	Close w/Frontage Road	Close
Macoupin	CHI-STL	Farm	228.60	None	Elec. Lock Gates	Close
Macoupin	CHI-STL	TR 279	229.80	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	Farm	230.10	None	Close w/Frontage Road	Close
Macoupin	CHI-STL	TR 234	231.00	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	CR 10	234.00	Flashing lights	Conv. Gates	DTBD
Macoupin	CHI-STL	TR 238	234.60	None	Close w/Frontage Road	Close
Macoupin	CHI-STL	Farm	235.60	None	Close w/Frontage Road	Close
Macoupin	CHI-STL	Farm	236.80	None	Close w/Frontage Road	Close
Macoupin	CHI-STL	Farm	237.20	None	Elec. Lock Gates	Close
Macoupin	CHI-STL	Farm	237.40	None	Close w/Frontage Road	Close
Macoupin	CHI-STL	Keating Street	238.30	Gates	No Change	Close
Macoupin	CHI-STL	TR 385/ Prairie Dell Road	239.80	Crossbucks	Conv. Gates	DTBD
Macoupin	CHI-STL	Farm	240.60	Flashing lights	Close w/Frontage Road	Close
Macoupin	CHI-STL	TR 399/ Bachman Road	241.30	Flashing lights	Conv. Gates	Close
Macoupin	CHI-STL	TR 415	242.90	Flashing lights	Conv. Gates	DTBD
Macoupin	CHI-STL	TR 32	244.30	Flashing lights	Close w/Frontage Road	Close
Macoupin	CHI-STL	TR 427	244.90	Gates	No Change	Close
Macoupin	CHI-STL	Center Street	245.80	Cantilever flashing lights with gates	No Change	DTBD
Jersey	CHI-STL	Farm	246.90	None	Conv. Gates	Close
Jersey	CHI-STL	Terpening Lane	248.00	Flashing lights	Close w/Frontage Road	Close
Jersey	CHI-STL	TR 162A	248.50	Flashing lights	Conv. Gates	DTBD
Madison	CHI-STL	Farm	250.10	None	Elec. Lock Gates	Close
Madison	CHI-STL	Bethany Lane	250.95	Gates	No Change	DTBD
Madison	CHI-STL	Pearl Street	252.10	Cantilever flashing lights with gates	No Change	Close
Madison	CHI-STL	Tolle Road	252.55	Cantilever flashing lights with gates	No Change	DTBD
Madison	CHI-STL	Alby Street	253.25	Cantilever flashing lights with gates	No Change	DTBD
Madison	CHI-STL	Washington St./Humbert Rd.	255.60	Gates	No Change	DTBD
Madison	CHI-STL	Levee Road	258.35	None	Elec. Lock Gates	Elec. Lock Gates
Madison	CHI-STL	Industrial	262.05	None	Close	Close
Madison	CHI-STL	Evans Avenue	263.20	Gates	Close	Close

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Madison	CHI-STL	Rand Avenue	264.30	Gates	No Change	DTBD
Madison	CHI-STL	Hawthorne Street	264.85	Gates	No Change	DTBD
Madison	CHI-STL	Seventh Street	265.20	Flashing lights	Conv. Gates	Close
Madison	CHI-STL	Robins Road	265.65	None	Conv. Gates	Close
Madison	CHI-STL	Farm	266.25	None	Close w/Frontage Road	Close
Madison	CHI-STL	Canal Road	266.70	Crossbucks	Conv. Gates	Close
Madison	CHI-STL	Oldenburg Road	267.80	Crossbucks	Conv. Gates	Close
Madison	CHI-STL	Farm	268.20	None	Close w/Frontage Road	Close
Madison	CHI-STL	Maryville Road	270.70	Gates	No Change	DTBD
Madison	CHI-STL	Pontoon Road	272.70	Cantilever flashing lights with gates	Grade Sep.	DTBD
Madison	CHI-STL	25th Street	274.30	Gates	No Change	DTBD
Madison	CHI-STL	22nd Street	274.80	Gates	Close	Close
Madison	CHI-STL	20th Street	275.00	Gates	No Change	Close
Madison	CHI-STL	Niedringhaus Avenue	275.40	Cantilever flashing lights with gates	No Change	DTBD
Madison	CHI-STL	Bissell Street	277.10	Gates	No Change	DTBD
St. Clair	CHI-STL	Missouri Avenue	280.90	Gates	Close	DTBD
Cook	CHI-KANK	Private Road	30.23	Crossbucks	Warn. Sign and Lights	
Will	CHI-KANK	Stuenkel Rd./University Pkwy.	31.40	Gates	Veh. Arr. Barrier	Grade Sep.
Will	CHI-KANK	Dralle Road	32.50	Gates	No Change	Close
Will	CHI-KANK	N. Peotone Road	39.00	Gates	No Change	Close
Will	CHI-KANK	Harlem Avenue	39.85	Gates	Close	Close
Will	CHI-KANK	Crawford Avenue	40.35	Gates	No Change	Close
Will	CHI-KANK	Main Street	40.50	Gates	No Change	Close
Will	CHI-KANK	Corning Street	40.55	Gates	Close	Grade Sep.
Will	CHI-KANK	Wilson Street (Pedestrian)	40.65	None	Close	Close
Will	CHI-KANK	Peotone Road	41.15	Gates	No Change	Grade Sep.
Will	CHI-KANK	Kennedy Road	42.20	Gates	Close	Close
Will	CHI-KANK	Private Road	42.75	None	Close w/Frontage Road	Close
Will	CHI-KANK	TR 3	43.30	Crossbucks	Conv. Gates	Close
Kankakee	CHI-KANK	TR 7A	44.45	Gates	Close	Close
Kankakee	CHI-KANK	TR 11	45.55	Gates	No Change	Close
Kankakee	CHI-KANK	Third Street	46.50	Gates	No Change	Close
Kankakee	CHI-KANK	First Street (Pedestrian)	46.65	None	Close	Close
Kankakee	CHI-KANK	Division Street	46.75	Gates	No Change	Grade Sep.
Kankakee	CHI-KANK	E. Adams Street	46.90	Gates	Close	Close
Kankakee	CHI-KANK	TR 23	48.00	Gates	No Change	Close
Kankakee	CHI-KANK	TR 37	49.75	Gates	No Change	Close
Kankakee	CHI-KANK	Indian Oaks	50.80	Gates	No Change	Grade Sep.
Kankakee	CHI-KANK	McKnight Road	51.35	Gates	Close w/Frontage Road	Close
Kankakee	CHI-KANK	Robert Hall Road	51.85	Gates	No Change	Close

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Kankakee	CHI-KANK	North Street	53.85	Cantilever flashing lights with gates	No Change	DTBD
Kankakee	CHI-KANK	Bike Crossing	54.00	None	Close	
Kankakee	KANK-DWI	Entrance Avenue	101.27	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	Fifth Street	101.41	Cantilever flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	Main Street	102.66	Gates	No Change	Close
Kankakee	KANK-DWI	Private	103.90	None	Elec. Lock Gates	Close
Kankakee	KANK-DWI	CR 6/Pipeline Road	104.43	Flashing lights	Conv. Gates	Close
Kankakee	KANK-DWI	Private Road	104.90	None	Close w/Frontage Road	Close
Kankakee	KANK-DWI	Private Road	105.10	None	Elec. Lock Gates	Close
Kankakee	KANK-DWI	4000W/TR 96	105.69	Flashing lights	Conv. Gates	Close
Kankakee	KANK-DWI	Private Road	106.20	None	Close w/Frontage Road	Close
Kankakee	KANK-DWI	SR 17	106.59	Gates	Grade Sep.	Grade Sep.
Kankakee	KANK-DWI	Private Road	107.13	None	Elec. Lock Gates	Close
Kankakee	KANK-DWI	Irwin Road/TR 80A	107.46	Flashing lights	Conv. Gates	Close
Kankakee	KANK-DWI	Private Road	108.20	None	Close w/Frontage Road	Close
Kankakee	KANK-DWI	Lehigh	108.49	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	Huber Road/8000W	109.25	Crossbucks	Conv. Gates	Close
Kankakee	KANK-DWI	Private Road	110.00	Crossbucks	Close w/Frontage Road	Close
Kankakee	KANK-DWI	9000W/TR 60	110.12	Crossbucks	Close	Close
Kankakee	KANK-DWI	Goodrich Road/10000W	111.30	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	11000W	112.32	Crossbucks	Close	Close
Kankakee	KANK-DWI	Herscher Road/12000W	113.33	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	13000W/TR 36	114.36	None	Close	Close
Kankakee	KANK-DWI	14000W	115.32	Flashing lights	Close	Close
Kankakee	KANK-DWI	Union Hill	115.96	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	15000W	116.33	Crossbucks	Close	Close
Kankakee	KANK-DWI	Buckingham/16000W	117.34	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	17000W	118.34	Crossbucks	Close	Close
Kankakee	KANK-DWI	18000W	119.35	Flashing lights	Conv. Gates	DTBD
Kankakee	KANK-DWI	Private Road	119.70	None	Close w/Frontage Road	Close
Kankakee	KANK-DWI	19000W/TR 6	120.36	Crossbucks	Close	Close
Livingston	KANK-DWI	SR 17/ Shelley Avenue	121.42	Flashing lights	Conv. Gates	DTBD
Livingston	KANK-DWI	TR 282	122.60	Crossbucks	Close	
Livingston	KANK-DWI	TR 280	123.17	Crossbucks	Conv. Gates	Close
Livingston	KANK-DWI	CR 3	124.43	Flashing lights	Conv. Gates	DTBD
Livingston	KANK-DWI	TR 268	125.44	Crossbucks	Close	Close
Livingston	KANK-DWI	3100 East	126.45	Crossbucks	Conv. Gates	Close
Livingston	KANK-DWI	TR 250	127.24	Crossbucks	Close	Close
Livingston	KANK-DWI	Private Road	128.30	None	Elec. Lock Gates	Close
Livingston	KANK-DWI	Private Road	129.55	None	Elec. Lock Gates	Close
Cook	CHI-RID	Private Road	0.61	None	Close	Not Evaluated

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Cook	CHI-RID	Private Road	1.10	None	Close	Not Evaluated
Cook	CHI-RID	Private Road	6.70	None	Close	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	9.76	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	9.77	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	9.78	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Private Road	9.79	None	Close	Not Evaluated
Cook	CHI-RID	Private Road	9.81	None	Close	Not Evaluated
Cook	CHI-RID	Private Road	10.00	None	Close	Not Evaluated
Cook	CHI-RID	95th Street	10.80	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	97th Street	11.10	Flashing lights	Conv. Gates	Not Evaluated
Cook	CHI-RID	99th Street	11.40	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	102nd Place	11.80	Gates	No Change	Not Evaluated
Cook	CHI-RID	103rd Street	11.90	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	11.92	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	11.94	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	11.96	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	11.98	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	11.99	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	104th Street	12.00	Gates	No Change	Not Evaluated
Cook	CHI-RID	105th Street	12.20	Gates	No Change	Not Evaluated
Cook	CHI-RID	107th Street	12.40	Gates	No Change	Not Evaluated
Cook	CHI-RID	111th Street	12.90	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	Monterey Street	13.10	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	115th Street	13.50	Gates	No Change	Not Evaluated
Cook	CHI-RID	119th Street	14.00	Gates	No Change	Not Evaluated
Cook	CHI-RID	Vermont Street	15.70	Gates	No Change	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	15.72	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	15.74	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	15.76	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	15.78	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Grove Street	15.80	Gates	No Change	Not Evaluated

County	Alignment	Street	Milepost	Existing Devices	Suggested Action	1994 Study
Cook	CHI-RID	139th Street	17.00	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	18.38	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	147th Street	18.40	Gates	No Change	Not Evaluated
Cook	CHI-RID	Crawford Ave./Pulaski Road	18.80	Cantilever flashing lights with gates	No Change	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	20.40	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	20.41	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	20.44	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Central Avenue	21.70	Gates	No Change	Not Evaluated
Cook	CHI-RID	167th Street	21.90	Gates	No Change	Not Evaluated
Cook	CHI-RID	Private Road	22.40	Crossbucks	Close	Not Evaluated
Cook	CHI-RID	Private Road	22.80	Crossbucks	Close	Not Evaluated
Cook	CHI-RID	66th Court	23.30	Gates	No Change	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	23.48	None	Ped. Bell and Flashers	Not Evaluated
Cook	CHI-RID	Oak Park Avenue	23.50	Gates	No Change	Not Evaluated
Cook	CHI-RID	Station Platform (Pedestrian)	25.15	Ped. Bell and Flashers	No Change	Not Evaluated
Cook	CHI-RID	80th Avenue	25.20	Gates	No Change	Not Evaluated
Will	CHI-RID	Station Platform (Pedestrian)	27.23	None	Ped. Bell and Flashers	Not Evaluated
Will	CHI-RID	Station Platform (Pedestrian)	27.27	None	Ped. Bell and Flashers	Not Evaluated
Will	CHI-RID	191st Street	28.00	Gates	No Change	Not Evaluated
Will	CHI-RID	School House Road	29.20	Gates	No Change	Not Evaluated
Will	CHI-RID	Mokena Street	29.60	Gates	No Change	Not Evaluated
Will	CHI-RID	Station Platform (Pedestrian)	29.70	None	Ped. Bell and Flashers	Not Evaluated
Will	CHI-RID	Wolf Road	29.80	Gates	No Change	Not Evaluated
Will	CHI-RID	Hamilton/Francis Road	30.20	Gates	No Change	Not Evaluated
Will	CHI-RID	Anderson Road	32.50	Crossbucks	Conv. Gates	Not Evaluated
Will	CHI-RID	Private Road	33.80	Locked gate	Close	Not Evaluated
Will	CHI-RID	Station Platform (Pedestrian)	33.90	None	Ped. Bell and Flashers	Not Evaluated
Will	CHI-RID	Cedar Road	34.00	Gates	No Change	Not Evaluated
Will	CHI-RID	Vine Street	34.40	Gates	No Change	Not Evaluated
Will	CHI-RID	Old Hickory Road	35.30	Gates	No Change	Not Evaluated
Will	CHI-RID	Gougar Road	36.10	Gates	No Change	Not Evaluated
Will	CHI-RID	Private Road	39.25	None	Close	Not Evaluated

DEFINITION OF TERMS

1. County

County in which the referenced crossing is located.

2. Alignment

Segment of Chicago - St. Louis route in which the referenced crossing is located.

CHI-STL = Chicago to Joliet to St. Louis
CHI-KANK = Chicago to Kankakee
KANK-DWI = Kankakee to Dwight
CHI-RID = Chicago to Joliet - Rock Island District

3. Street

The name of the street on which the referenced crossing is located.

4. Milepost

The number associated with each at-grade crossing along the alignment that indicates distance along the railroad in miles. Mileposts are listed in ascending order from Chicago to East St. Louis for the Illinois Central/Union Pacific alignment. Other segments — Chicago to Kankakee (Illinois Central Mainline), Kankakee to Dwight (Norfolk Southern), and Chicago to Joliet (Rock Island District) — are also presented in ascending order from north to south or east to west, as appropriate.

5. Existing Devices

The current grade crossing warning device or devices, if any, at the referenced crossing:

None = No warning device present.

Crossbucks = Warning signs posted at crossing.

Bell = Audible signal warns of approaching train.

Ped. Bell and Flashers = Flashing lights and a warning bell that sounds when trains approach.

Flashing Lights = Flashing lights at crossing that warn of approaching train.

Locked Gate = Non-mechanical locked gate blocks passage over tracks.

Gates = Retractable gates that are deployed when train approaches crossing.

Electric Lock Gates = Gates that can be opened by request of user to railroad dispatcher.

Cantilevered Flashing Lights with Gates = Retractable gates with flashing lights that are deployed when train approaches crossing.

6. Suggested Action and 1994 Study

Close = Closure is suggested for existing grade crossing at identified location (street, road or pedestrian crossing).

Close w/Frontage Road = Closure is suggested for existing grade crossing at identified location with a service road provided.

No Change = Existing grade crossing has active warning device; no new equipment is proposed, although upgrading of some components or reprogramming of current control mechanism may be necessary.

Ped. Bell and Flashers = Flashing lights and a warning bell that sounds when trains approach is suggested for a pedestrian crossing proposed to remain open.

Warn. Sign and Lights = Warning signs, flashing lights, and a warning bell that sounds when trains approach is suggested for a private residential crossing proposed to remain open.

Conv. Gates = Conventional gates that lower when trains approach. These gates block vehicle passage onto the tracks for the approach travel lanes. Flashing lights with constant warning time (CWT) capabilities would also be provided with conventional gates. At some locations, such as multi-lane highways or areas with restricted sight distance conditions, auxiliary flashing lights can be mounted on cantilevered structures extending across the roadway. Where auxiliary lights are suggested, this is indicated in the Safety Analysis and Considerations comments section for each individual crossing.

Elec. Lock Gates = A gate that is locked with an electronic lock mechanism that signals oncoming trains to stop if the gate is unlocked.

Veh. Arr. Barrier = Vehicle Arresting Barrier; positive protection using a net or screen that prevents vehicles from entering the crossing.

Grade Sep. = New grade separated crossing is suggested at this location.

DTBD = Device to be Determined; used in the 1994 Study, an active warning device was suggested for the referenced crossing. Specific types and/or model of warning devices included flashing lights, two and four quadrant gates, and cantilevered gates.

Not Evaluated = Used for crossings on the Rock Island District (RID) Line when referring to 1994 study recommendations. The RID was not evaluated as part of the 1994 Financial and Implementation Plan.

Appendix C
AGENCY COORDINATION

Number **Page**

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Illinois Historic Preservation Agency

1 Old State Capitol Plaza • Springfield, Illinois 62701–1507 • (217) 782–4836 • TTY (217) 524–7128

January 7, 1997

Mr. Jere J. Hinkle, P.E.
Manager, Transportation Planning
DeLeuw Cather & Company
525 West Monroe Street
Chicago, Illinois 60661

Dear Mr. Hinkle:

In 1966, portions of the Illinois Michigan Canal under the ownership of the Illinois Department of Conservation were designated by the National Park Service as a National Historic Landmark and placed on the National Register of Historic Places.

In the intervening years, it has been acknowledged that there exist several segments of the I&M Canal that meet the criteria of significance and integrity that were not included within the designation, nor have the original boundaries ever been amended.

For segments of the Canal to be considered eligible for the National Register of Historic Places, they must have at least as much authenticity of materials evident as those portions currently listed. As an example, there are several segments in Will and Cook counties that have their original stone walls, profile and towpath still evident. These would be considered eligible.

At least one such portion, that portion between 135th Street and Lemont, meets this criterion of integrity and may be affected by the proposed High Speed Rail project. If this were the case, an opinion of eligibility from our office and a concurrence by the U.S. Department of Transportation would trigger the same environmental review as if that portion were formally designated.

If you have any further questions, please feel free to contact me.

Sincerely,

Anne E. Haaker
Deputy State Historic
Preservation Officer

Printed on Recycled Paper

Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

ARI
2956 Acres
10 sites
Corcon 6 sites to
Phase 2
ME

December 17, 1998

Cook, Will, Kankakee, Grundy, Livingston
McLean, Logan, Sangamon, Macoupin, Jersey
Madison and St. Clair Counties

Chicago to St. Louis High Speed Rail Corridor

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

Dear Ms. Haaker:

Enclosed are two copies of an Archaeological Report and Phase I documentation completed by Archaeological Research, Inc. personnel concerning archaeological properties and sites potentially to be impacted by the proposed project referenced above. Archaeological survey in the 283 mile, 2950 acre project area resulted in the recommendation for subsurface testing at two of the 450 crossings (Maryville Road and TR 234). Construction of the crossing areas to be tested may impact portions of archaeological sites Ms-30, 50, 75, 76, and 1472, as well as site Mp-468. No further archaeological work is required in the remaining proposed crossings, frontage roads, or grade separations. Further survey will be required if additional right-of-way is required as planning proceeds.

In accordance with the established procedure for coordination of Illinois Department of Transportation projects, we request the concurrence of the State Historic Preservation Officer in our determination that no archaeological properties, other than the potentially eligible sites in the Maryville and TR 234 crossings, subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, will be impacted by the proposed construction.

Very truly yours,

William T. Sunley, Engineer of
Design and Environment

By: John A. Walthall
Cultural Resources Unit

CONCUR

By: Anne E. Haaker
Deputy State Historic Preservation Officer

Date: 12-18-98

Illinois Historic Preservation Agency

1 Old State Capitol Plaza • Springfield, Illinois 62701-1507 • (217) 782-4836 • TTY (217) 524-7128

March 21, 2000

Statewide
High Speed Rail Project
IHPA Log.#.9910120052WSW

Mr. W. T. Sunley
Engineer of Design and Environment
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62704

Dear Mr. Sunley:

We have reviewed the information provided concerning the referenced project. Our review is required pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

While it is true that no historic structures will be demolished by the project, which proposes to convert existing rail to use by high speed trains, there may be visual impacts to historic structures by the addition or conversion of safety gates at several locations. These locations include but are not limited to Lemont, Lockport, Dwight and Carlinville. Visual impacts may also occur as a result of fencing adjacent to historic structures in populated areas as well as along the Illinois-Michigan Canal. In addition, effects may occur as the result of a grade separation structure along the I & M Canal in Will County.

In our opinion, a "no adverse effect finding" can be accomplished through compliance with the recommended approaches of the Secretary of the Interior's Standards for Historic Preservation Projects. We look forward to consulting with your office to that end as planning continues.

Sincerely,

Anne E. Haaker
Deputy State Historic Preservation Officer

the Commission of any written comments received by NSCC.

III. Date of Effectiveness of the Proposed Rule Chance and Timing for Commission Action

Within thirty-five days of the date of publication of this notice in the Federal Register or within such longer period (i) as the Commission may designate up to ninety days of such date if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the self-regulatory organization consents, the Commission will:

(A) By order approve such proposed rule change or

(B) institute proceedings to determine whether the proposed rule change should be disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing. Persons making written submissions should file six copies thereof with the Secretary, Securities and Exchange Commissin, 450 Fifth Street N.W., Washington, D.C. 20549. Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with provisions of 5 U.S.C. 552, will be available for inspection and copying in the Commission's Public Reference Room in Washington, D.C. Copies of such filing will also be available for inspection and copying at the principal office of NSCC. All submissions should refer to File No. SR-NSCC-95-03 and should be submitted by May 5, 1995.

For the Commission by the Division of Market Regulation, pursuant to delegated authority.

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 95-9231 Filed 4-13-95; 8:45 am]

BILLING CODE 8010-01-M

SMALL BUSINESS ADMINISTRATION

Hartford District Advisory Council Meeting; Public Meeting

The U.S. Small Business Administration Hartford District Advisory Council will hold a public meeting on Monday, May 15, 1995 at 8:30 a.m. at 2 Science Park, New Haven, Connecticut 06511, to discuss matters as may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, write or call Ms. Jo-Ann Van Vechten, District Director, U.S. Small Business Administration, 330 Main Street, Hartford, Connecticut, (203) 240-4670.

Dated: April 10, 1995.

Dorothy A. Overal,

Director, Office of Advisory Council.

[FR Doc. 95-9280 Filed 4-13-95; 8:45 am]

BILLING CODE 8025-01-M

Casper District Advisory Council Meeting; Public Meeting

The U.S. Small Business Administration Casper District Advisory Council will hold a public meeting on Thursday, May 4, 1995 from 2:00 p.m. to 5:00 p.m. which will be a training session, and Friday, May 5, 1995, 8:00 a.m. to 3:00 p.m., regularly scheduled meeting at the Parkway Plaza, 123 West "E" Street, Casper, Wyoming, to discuss matters as may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, write or call Mr. James P. Gallogly, District Director, U.S. Small Business Administration, 100 East "B" Street, P.O. Box 2839, Casper, Wyoming 82602-2839, (307) 261-5761.

Dated: April 10, 1995.

Dorothy A. Overal,

Director, Office of Advisory Council.

[FR Doc. 95-9281 Filed 4-13-95; 8:45 am]

BILLING CODE 8025-01-M

DEPARTMENT OF STATE

[Public Notice 2190]

Advisory Committee on Historical Diplomatic Documentation; Notice of Meeting

The Advisory Committee on Historical Diplomatic Documentation will meet May 11 and 12, 1995, in the Department of State, in Conference Room 1105.

The Committee will meet in open session from 9:00 a.m. on the morning of Thursday, May 11, 1995, until 12:00 noon. The remainder of the Committee's session until 1:00 p.m. Friday, May 12, will be closed in accordance with Section 10(d) of the Federal Advisory Committee Act (P.L. 92-463). It has been determined that discussions during these portions of the meeting will involve consideration of matters not subject to public disclosure under 5 U.S.C. 552b(c)(1), and that the public interest requires that such activities will be withheld from disclosure.

Questions concerning the meeting should be directed to William Z. Slany, Executive Secretary, Advisory Committee on Historical Diplomatic Documentation, Department of State, Office of the Historian, Washington, DC 20520, telephone (202) 663-1123.

Dated: April 7, 1995.

William Z. Slany,

Executive Secretary.

[FR Doc. 95-9207 Filed 4-13-95; 8:45 am]

BILLING CODE 4710-11-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Cook Will, Kankakee, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Jersey, Madison, and St. Clair Counties, IL

AGENCY: Federal Highway Administration, DOT.

ACTION: Notice of intent.

SUMMARY: The Federal Highway Administration (FHWA) is issuing this notice to advise the public that an Environmental Impact Statement (EIS) will be prepared for the development of high speed rail (HSR) passenger operations between Chicago, Illinois, and St. Louis, Missouri. The proposed project study area will extend from downtown Chicago on the north to downtown St. Louis on the south.

FOR FURTHER INFORATION CONTACT:

Mr. Dennis W. Johnson, Environmental Engineer, Federal Highway Administration, Illinois Division, 3250 Executive Park Drive, Springfield, Illinois 62703, Telephone (217) 492-4625

or:

Mr. Merrill L. Travis, Chief, Bureau of Railroads, Illinos Department of Transportation (DOT), 2300 South Dirksen Parkway, Room 302, Springfield, Illinos 62764, Telephone (217) 782-2835

or:

Mr. Michael E. Stead, High Speed Rail Manager, Illinois Department of Transportation (DOT), 2300 South Dirksen Parkway, Room 302, Springfield, Illinois 62764, Telephone (217) 785-8498

SUPPLEMENTARY INFORMATION: The proposed action is to develop a high speed rail passenger operation between Chicago and St. Louis. The proposed

project study area will extend from downtown Chicago on the north to downtown St. Louis on the south.

Joint lead agencies, FHWA and IDOT, will prepare an EIS on a proposal to develop high speed rail passenger service between Chicago, Illinos and St. Louis, Missouri. The proposed project involves upgrading an existing 282-mile rail corridor to allow the operation of high speed passenger trains at speeds up to 125 mph. The proposed project also would plan to have high speed passenger trains share the existing railroad right-of-way with existing rail freight service in the Chicago-St. Louis corridor.

Alternatives under consideration include no action and three alternate routes. The alternate routes include Chicago-St. Louis, via Joliet; Chicago-Peotone-St. Louis, via Kankakee; and, Chicago-Peotone-St. Louis, via Wilmington. The Joliet alternate is the current route used by Amtrak for existing intercity passenger rail service. The two Peotone route alternates would allow the State of Illinois to provide high speed intercity rail passenger service to the proposed South Suburban (Third) Airport in south suburban Chicago.

The Joliet and Peotone-Kankakee route alternatives would utilize existing railroad right of way for the entire corridor. The Peotone-Wilmington alternate would utilize existing railroad right of way, but would also include construction of a new railroad alignment between Peotone and Wilmington, approximately 20 miles in length.

The proposed project is intended to increase safety by providing a rail facility with improved equipment, an improved track structure, and other improved design elements; to provide additional capacity for increasing ridership volume; to improve rail passenger operations and better serve the transportation needs of communities in the Chicago-St. Louis corridor; and to help to support the economic development of the region.

Existing ridership is over 300,000 passengers per year in the Chicago-St. Louis corridor. The proposed project is expected to attract over 1 million passengers to this corridor. High speed rail would afford an alternative to other modes of travel that would be less affected by adverse weather, reduce congestion at airports and on highways, and meet transportation needs in a time-saving, fuel-efficient manner. Current Amtrak passenger trains provide 5 hour 30 minute service between Chicago and St. Louis. The proposed project would reduce the overall trip time to 3 hours 30 minutes. In addition, the proposed project would increase the trip frequencies between Chicago and St. Louis from three daily round trips to eight round trips per day.

The scoping process undertaken as part of this proposed project will include distribution of a scoping information packet, coordination with appropriate Federal, State, and local agencies, and review sessions as needed. A formal scoping meeting is scheduled to be held at the IDOT Central Office Auditorium, 2300 South Dirksen Parkway, Springfield, Illinois, on Monday, April 24, 1995, beginning at 1 p.m. Further details of the proposed project and a scoping information packet may be obtained from the IDOT contact persons listed above.

To ensure that the full range of issues related to the proposed project are addressed and all significant issues identified, a comprehensive public involvement program will be undertaken. Public meetings will be held in the study area prior to the public hearing. Public notice will be given of the time and place of the meetings and hearing. The Draft EIS will be available for public agency review and comment prior to the public hearing. In addition, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the IDOT contact persons.

Issued on: April 3, 1995.

Dennis W. Johnson,

Environmental Engineer.

[FR Doc. 95-9244 Filed 4-13-95; 8:45 am]

BILLING CODE 4910-22-M

Environmental Impact Statement: Wexford, Grand Traverse, and Kalkaska Counties, Michigan

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an Environmental Impact Statement will be prepared for the proposed improvements of US-131 from north of Manton to north of Kalkaska in Wexford, Grand Traverse and Kalkaska Counties, Michigan.

FOR FURTHER INFORMATION CONTACT: Mr. Norman Stoner, Program Operations Engineer, FHWA, 315 W. Allegan Street, Room 207, Lansing, Michigan, 48933, Telephone: (517) 377-1880; or Mr. Ronald S. Kinney, Manager, Environmental Section, Bureau of Transportation Planning, Michigan Department of Transportation, P.O. Box 30050, Lansing, Michigan, 48909, Telephone: (517) 335-2621.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Michigan Department of Transportation (MDOT), is preparing an Environmental Impact Statement (EIS) for the proposed improvements of US-131 from north of Manton to north of Kalkaska in Wexford, Grand Traverse, and Kalkaska Counties, Michigan. The purpose of the improvements is to complete the freeway system serving the western half of the northern lower peninsula. The freeway will provide a high speed non-stop facility which will make the region's markets, resources, and employment base accessible to more clients and customers. The completion of this 45 kilometer (28 mile) project is important to other economic development efforts in this region. Alternatives under consideration include: (1) No Action, (2) Low Capital Improvements, and (3) Freeway Alternatives.

The Low Capital Alternative proposes the possibility of passing relief lanes, intersection and interchange improvements, and other minor traffic safety modifications.

The Freeway Alternative is a four-lane divided, controlled access freeway with a median. A number of freeway alignments are being studied and are described as follows;

Line 1 crosses the Manistee River east of the existing structure, and continues northeasterly around the communities of Fife Lake, South Boardman, and Kalkaska. Potential interchange locations for access to these communities are located at Coster Road, Boardman Road, and M-72.

Line 2 follows the same path as Line 1 from the Manistee River to the community of South Boardman, where it curves westerly to interchange with existing US-131 halfway between South Boardman and Kalkaska. Another potential interchange location is at M-72 northwest of Kalkaska. This alignment also proposes to extend M-72 across US-131 on the south side of town where an interchange would be located to serve traffic going into and east of Kalkaska.

Line 3 crosses the Manistee River west of the existing structure. Interchanges are proposed at M-186, Boardman Road, extended M-72 south of Kalkaska, and existing M-72 north of Kalkaska. Approximately 14.5 kilometers (nine miles) from the northern limits of Kalkaska, this alternative merges east to existing US-131.

Planning Resources

P9501-00

Memorandum

To: Mike Stead - IDOT Bureau of Railroads
Charlie DeWeese - DeLeuw Cather
Dave Petersen - Sverdrup Civil, Inc.
Jere Hinkle - DeLeuw Cather
David Keene - Archaeological Research, Inc.
Maxine Mitchell - Applied Real Estate Analysis, Inc.

From: Lan Richart - Planning Resources Inc.

Date: May 8, 1995

Subject: Agency Scoping Meeting
April 24, 1995 at 1:00 p.m. in the auditorium
of the Illinois Department of Transportation Building
Springfield, Illinois

Attendance: See attached list.

Agenda and Handouts: See attached

Introduction and Presentation:

1. Jere Hinkle of DeLeuw Cather and Company began the meeting by introducing IDOT representatives and consultants participating in the study.

2. Mike Stead, Project Manager for the Bureau of Railroads, provided a short summary of the alignments under consideration. Mr. Stead noted the locations of stops under consideration and the fact that the alignment involved 11 counties and 30+ legislative districts.

3. Jere Hinkle presented an overview of the project and alternatives including the AMTRAK Chicago-St. Louis main line, airport connections, 15-20 miles of double track bypass at an expected five to six locations and grade crossings at 300 locations. Jere noted that a previous study had identified approximately 160-170 potential areas where crossings could be closed. These recommendations will be reviewed during the course of the EIS preparation. The public involvement program for the project will seek additional information regarding the issue of grade crossings.

Planning Resources Inc.
615 West Front Street
Telephone: (708) 668-3788
Wheaton, Illinois 60187

4. Jere requested that attendees submit their comments in writing by May 8. Comments should be sent to the project manager, Charlie DeWeese at DeLeuw Cather's Springfield office. Jere then invited questions or comments from the scoping participants.

Comments:

1. **Tom Palzer, Planning Director, K3 Regional Planning Commission** — Mr. Palzer stated that a west side highway bypass of Kankakee is under investigation. He suggested that our study consider the possible combination of the rights-of-way of the road and the high speed rail alignment.

2. **Terry Savko, Illinois Department of Agriculture** — Ms. Sarko made the following requests:

   a. Access should be maintained to all farm fields currently being cropped;
   b. Minimize adverse travel distance for farming operations;
   c. Minimize loss of farmland to new railroad right-of-way;
   d. Maintain existing drainage patterns and do not aggravate or increase ponding and flooding on private properties;
   e. Provide adequate safety measures to protect vehicles, farm equipment and pedestrians crossing the tracks in rural areas; Of special concern were rural facilities such as grain elevators, fertilizer/pesticide dealers and agricultural retail products specialists whose businesses and operations were closely associated with, and often in close proximity to the railroad and its right-of-way.

   The Illinois Department of Agriculture contact will be Chet Boruff, Deputy Director, Division of Natural Resources and Agricultural Industry Resources, (217) 785-4233.

3. **Ann Hintze, Executive Director of the Lockport Area Development Commission** — Ms. Hintze stated that the City of Lockport had an extensive area of the community listed on the National Register of Historic Places. The previous study had noted the potential of the closing six of eight of existing Lockport grade crossings. Ms. Hintze strongly objected to this action. She was concerned that barrier devices previously discussed by IDOT would not work in the situations found in Lockport due to spatial and geometric constraints.

   She said that within the last 10 years there have been 12 auto/train accidents. Most of these have occurred because large trucks coming down the hill to the railroad tracks are in low gear and occasionally stall on the tracks.

   Jere Hinkle noted that one element of the scope of this study will be the investigation of crossing protection devices with site specific applications. Merrill

Travis, Chief, Bureau of Railroads, also noted that IDOT is pursuing information from a separate demonstration project on advanced signalization technology. IDOT also is following up on research that is underway at the University of Connecticut investigating ways to detect vehicles stalled on tracks with sufficient warning time to permit trains to stop.

Ms. Hintze said that the Illinois-Michigan Canal runs through Lockport and is a National Landmark, warranting a more elevated status of protection than the National Register of Historic Places. She is concerned about the aesthetic effects of a high speed rail line passing through or near the historic district and the Canal.

Ms. Hintze believes that the Santa Fe alignment alternative should be considered in the Lockport area, since it involves only one at-grade crossing.

Merrill indicated that IDOT had evaluated and would be further evaluating the Santa Fe track alignment, but that this alignment would cross the canal twice, necessitating new bridges and triggering the need for 4(f) statement preparation.

4. **Kevin Rund, Director of Local Government, Illinois Farm Bureau** — Mr. Rund voiced concern over the value of traffic counts presented in the feasibility study and the need to use current data to support crossing treatment decisions.

   He also noted that if the high speed rail stops were provided in communities other than the six proposed, it would greatly enhance the image of the Chicago to St. Louis project and provide rural communities with a share of the high speed rail benefits.

5. **Donna Day, Senior Transportation Analyst with the East-West Gateway Plan Commission** — Ms. Day raised two questions. 1) Are IDOT and its consultants the only contacts for this project or are there parallel groups working in Missouri with the St. Louis connections?; and 2) What alignment is proposed in St. Louis?

   Jere noted that IDOT was responsible for the entire study. Merrill discussed the two options in St. Louis: 1) the current AMTRAK primary alignment crossing the Mississippi River and following the river front in St. Louis, passing under the Gateway Arch and then heading west to the downtown station; and 2) following the Southern Pacific along the riverfront in East St. Louis, crossing the Mississippi River at the MacArther bridge and then travelling directly into the downtown station. The latter is the St. Louis access route identified for high speed rail service.

6. **Steve Hamer, Illinois Department of Conservation** — Mr. Hamer emphasized the importance of considering threatened and endangered species protection and also requested that the project protect the integrity of the Illinois and Michigan Canal.

Conclusion of the Meeting:

Jere Hinkle asked if there were any more questions. There being none, he concluded the meeting with a request that agencies provide their responses in writing, addressing the information requested in the hand-out. The meeting concluded at 2:00 p.m.

LRR:smc
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Agenda

Agency Scoping Meeting
High Speed Rail, Chicago-St. Louis

April 24, 1995

I. Introduction

- Project Representatives
  - Illinois Department of Transportation
  - Consultant Team
- Purpose of the Meeting

II. Project

- Project Description
  - Alignment
  - Airport
  - By Pass Tracks
  - Grade Crossings
- Preliminary Identification of Issues

III. Request for Written Response

- Annotated List of Key Issues and Concerns
- Permits, Certification and Approvals
- Designated Contact

De Leuw, Cather & Company
Illinois High Speed Rail
Scoping Meeting
April 24, 1995
Sign-In

Name	Title	Agency	Phone No.	Fax No.
Ros Van Guilder	Vice Pres	TAMS Cons.	(312) 819 - 4045	(312) 819-4040
R Van Guilder	Tech. Assist.	TAMS Cons	(312) 819-4045	(312) 819-4040
Dave Peterson	Secretary Dept. Proj Mgr.	Sverdrup Civil	(217) 525-4070	(217) 525-4073
Terry Sanko		IL Dept of Agriculture	(217) 782-6297	(217) 524-4882
Mark Goldberg			(309) 662-6367	(309) 662-0787
Jerre J Hinkle		DeLeuw Cather & Co	(312) 930-5149	(312) 930-0010
Donna Day	Sr. Trans. Analyst	East West Gateway	(314) 421-4220	(314) 231-6120
Brian Billingsley	Trans Planner	K3 Co. Regional Plan	(815) 937-2940	(815) 937-2974
Tom Palzer	Plnng. Dir.	" " " "	(") " "	(") " "
Mike Lenning	Trans Planner	" " "	(") " "	(") " "
Ed Moente	Hyperion Township	Lee Center Twp	(815) 992-1764	( )
Ann G. Hintze	Exec. Dir.	Rockport Area Dev. Comm	(815) 838-9500	(815) 838-9498
Kevin B. Rund	Dir. Local Gov't.	IL Farm Bureau	(309) 557-3274	(309) 557-2559
Tracey A. Scully	IL Historic Pres. Agency →		(217) 785-3977	(217) 524-7525
Cheryl Kelley	EPS	IEPA	(217) 524-4947	(217) 524-4710
Jeffrey Blair	Railroad Specialist	ICC	(217) 785-8421	(217) 785-1448
Merrill Travis	Chief, Bur. of ARs	IDOT	(217) 782-2835	(217) 524-1889
Charles Kalbfleisch	Unit Chief-Des	IDOT	(217) 782-7651	( )
Steve Hamer	Trans Prog Review	IDOC	(217) 785-5500	( )
Stacey Hollo	Asst. Chief Counsel	IDOT	(217) 782-3215	( )
Gary Moore	Resource Cons.	Sangamon SWCD	(217) 492-4015	( )
Rusty Simes	Safety & Traffic Ops Engr	FHWA	(217) 492-4630	(217) 492-4628
Tim Pfaffenbarger	Airport Planner	IDOT	(217) 785-8118	( )

De Leuw, Cather & Company
Illinois High Speed Rail
Scoping Meeting
April 24, 1995
Sign-In

Name	Title	Agency	Phone No.	Fax No.
Jim Mohr	Associate	Hanson Eng	(217) 788-2450	(217) 788-2503
ROB GIBLASON	ASSOCIATE	HANSON ENG	(217) 788-2450	(217) 788-2503
Dan Heffern		IDOT - Div. of Aero	(217) 785-4255	( )
MIKE MCCUE		ILL DOT OP & P	(217) 782-0698	( )
Lan Richart	Vice President	Planning Resources Inc.	(708) 668-3788	(708) 668-4125
John Coombe	Sr. V.P.	Hanson Eng. Inc.	(217) 788-2450	(217) 788-2503
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U.S. Department of Transportation

United States Coast Guard

Commander
Ninth Coast Guard District(obr)

1240 East Ninth Street
Cleveland, OH 44199-2060

Phone:(216) 522-3993

16591
Ser. B-71/cdm
18 April 1995

Mr. Merrill L. Travis
Chief, Bureau of Railroads
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

Dear Mr. Travis:

I am writing in response to your correspondence of 31 March 1995 concerning a high speed rail line between Chicago, Illinois and St. Louis, Missouri.

We regret that we will not be able to have a representative at your 24 April 1995 meeting.

The project description attached to your letter did not specify whether or not navigable waterways of the United States will be crossed. If a Coast Guard Bridge Permit is needed, our input and permit requirements will be primarily focused upon navigational clearances. We will, also, expect that your NEPA documents will enable us to discharge our environmental responsibilities. Please advise us if there will be any waterway crossings.

The southern part of your proposed alignment is under the jurisdiction of our Second Coast Guard District. A copy of your letter was forwarded to the Bridge office in St. Louis for their comments.

Should you have any further questions, please contact Carolyn Malone at the above address and telephone number.

Sincerely,

Robert W. Bloom

ROBERT W. BLOOM, JR.
Chief, Bridge Branch
By direction of Commander,
Ninth Coast Guard District

BUREAU OF RAILROADS				
Recieved 4/24/95	INFO	ACTION	DATE	INITIALS
Bureau Chief	✓			
Program Planning		✓		
Rail Freight				
Rail Passenger				

U.S. Department of Transportation
United States Coast Guard

Commander
Second Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: (ob)
Phone: 314-539-3724

16590
8 June 1995

Mr. Merrill L. Travis, Chief
Bureau of Railroads
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, IL 62764-

Subj; HIGH SPEED RAIL LINE BETWEEN CHICAGO, IL AND ST. LOUIS, MO

Dear Mr. Travis:

Please refer to your letter of 31 March 1995.

We were unable to attend the initial scoping meeting held on the subject project because the ~~letter was sent to our office in~~ Cleveland, OH rather to St. Louis. The time delay in forwarding the letter precluded our attendance.

In the future please address all correspondence concerning this project to:

Commander (ob)
Second Coast Guard District
1222 Spruce Street
St. Louis, MO 63103

Our concern in the project is restricted to the bridges crossing navigable waterways between Chicago and St. Louis. If any river is crossed, we need to determine if a bridge permit or a bridge permit amendment will be required. Please provide a list of river crossings and whether a new bridge will be constructed or an existing bridge modified. We will review the list and identify which crossings will require permit action.

BUREAU OF RAILROADS				
Rockwell 6/12/95	INFO	ACTION	DATE	INITIALS
Bureau Chief	✓		✓	✓
Program Planning		✓		
Rail Freight				
Rail Passenger				
Secretary				
Remarks				

16590
8 June 1995

Subj; HIGH SPEED RAIL LINE BETWEEN CHICAGO, IL AND ST. LOUIS, MO

If any bridge permits are required, they must be supported with an appropriate environmental document. Therefore we request to be a cooperating agency in the preparation of the Environmental Impact Statement (EIS). In addition, please notify if a federal agency which has been identified as the "lead federal agency" for preparing the EIS.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

State of Illinois
DEPARTMENT OF AGRICULTURE
State Fairgrounds / P.O. Box 19281 / Springfield 62794-9281 TDD: 217/524-6858

Bureau of Environmental Programs
217/ 785-2427

Bureau of Farmland Protection
217/ 782-6297

Bureau of Soil and Water Conservation
217/ 782-6297

April 25, 1995

Mr. Charles DeWeese
Project Manager
421 South Grand Avenue West
Suite 2A West
Springfield, Illinois 62704

Re: High Speed Rail
Scoping Process Comments

Dear Mr. DeWeese:

The Illinois Department of Agriculture submitted verbal comments at the April 24, 1995 scoping meeting regarding the potential development of High Speed Rail from Chicago to St. Louis.

Enclosed are the Illinois Department of Agriculture's written comments regarding the potential issues which directly and indirectly affect the agricultural community. We appreciate the opportunity to provide input and look forward to continued coordination with the Illinois Department of Transportation's High Speed Rail initiative.

Sincerely,

Teresa J. Savko

Teresa J. Savko
Bureau of Farmland Protection

TJS:mdg

Enclosure

TESTIMONY OF THE
ILLINOIS DEPARTMENT OF AGRICULTURE
ON THE
HIGH SPEED RAIL LINE
BETWEEN CHICAGO AND ST. LOUIS, MISSOURI

April 24, 1995

The Illinois Department of Transportation (IDOT) has requested comments from the Department of Agriculture regarding the possible development of a high speed rail line between Chicago and St. Louis, Missouri.

The primary route would run from Chicago to St. Louis, a distance of 282 miles, and use the existing tracks of the Illinois Central Railroad from Chicago to Joliet, the Southern Pacific from Joliet to East St. Louis, and the Terminal Railroad Association of St. Louis the last few miles into St. Louis.

The existing Chicago-St. Louis AMTRAK line has more than 300 grade crossings. Closure and grade separation - the two preferred methods of minimizing risk at crossings - do not always meet the needs of the public living and working near these crossings.

The Illinois Department of Agriculture (IDOA) has three major concerns with the High Speed Rail initiative. Of primary importance is access to the farm fields. Farmers who are unable to access their property are unable to maintain their livelihood of cultivating and harvesting the land. We are concerned that access be maintained to all fields which are presently being cropped at this point in time and adverse travel be minimized. Utmost consideration should be given to the farmers so that farm machinery and related agricultural traffic can safely cross these high speed tracks.

Our second concern pertains to reducing the amount of farmland which will be converted for the development of new corridors and to service the proposed Peotone airport. We ask that land acquisition efforts be held to a minimum as Prime farmland is a finite natural

resource which deserves the same respect and considerations given other natural resources. Should wetlands be disturbed and mitigation be required, the IDOA stresses the need for IDOT to utilize land other than Prime farmland for this use. In addition to minimizing land acquisition for the new double track, it is IDOT's responsibility to maintain the natural drainage patterns which presently exist so that adjacent landowners do not receive additional flow or ponding on their properties as a result of the construction.

And finally, we are concerned with the rural community's safety regarding high speed travel when passing agricultural facilities, i.e., grain elevators and loading facilities, fertilizer and pesticide warehouses, and combination agricultural retail centers. The higher speed of trains passing along side or between these types of agricultural operations, when combined with normal work-related actions and sighting judgments of both the employees and general public, could result in disastrous consequences. We ask that safety studies for agricultural operations also be assessed from this perspective.

The IDOA looks forward to future coordination with IDOT on this initiative. Our agricultural contact is Chet Boruff, Deputy Director of the Division of Natural Resource and Ag Industry Regulation, State Fairgrounds, Springfield, Illinois, 62794-9281; 217-785-4233.

Illinois Department of Conservation
LINCOLN TOWER PLAZA • 524 SOUTH SECOND STREET • SPRINGFIELD 62701-1787 CHICAGO OFFICE • ROOM 4-300 • 100 WEST RANDOLPH • CHICAGO 60601
Brent Manning, Director John W. Comerio, Deputy Director Bruce F. Clay, Assistant Director

April 28, 1995

Mr. Charles DeWeese
Project Manager
421 South Grand Ave. West
Suite 2A West
Springfield, IL 62704

Re: High Speed Rail Proposal - Chicago to St. Louis

Dear Mr. DeWeese:

The Illinois Department of Conservation has reviewed the materials provided on the project referenced above and submits the following comments.

In preparing the Environmental Impact Statement the following issues should be addressed for resource concerns.

1. We would expect that all state statues would be complied with; i.e. Endangered Species Protection Act and the Interagency Wetlands Act.

2. That the integrity of the I & M Canal (National Heritage Corridor Landmark) be preserved should any construction activities take place in the vicinity.

If any change in the project scope should occur, then the Illinois Department of Conservation should be notified for re-evaluation of possible resource impacts.

If you have any questions concerning the above, feel free to contact me at 217-785-5500.

Sincerely,

Steve Hamer

Steve Hamer
Transportation Review Program
Impact Analysis Division

DE LEUW, CATHER & CO
MAY 1 0 1995
SPRINGFIELD, ILLINOIS

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office (ES)
4469 - 48th Avenue Court
Rock Island, Illinois 61201

COM: 309/793-5800
FAX: 309/793-5804

IN REPLY REFER TO:

April 28, 1995

BUREAU OF RAILROADS

Received 5/1/95	INFO	ACTION	DATE	INITIALS
Bureau Chief	✓			
Program Planning		✓		
Rail Freight				
Rail Passenger				
Secretary				

Illinois Department of Transportation
Bureau of Railroads
Mr. Merrill L. Travis, Chief
2300 South Dirksen Parkway
Springfield, Illinois 62746

Dear Travis:

This responds to your letter of March 31, 1995, requesting our comments concerning the development of a high-speed rail line between Chicago, Illinois and St. Louis, Missouri. The information provided by the U.S. Fish and Wildlife Service will be used in the preparation of an Environmental Impact Statement for the proposed rail line. We have reviewed the information provided with your letter and have the following comments.

These comments provide technical assistance only and do not fulfill the requirements under Section 7 of the Endangered Species Act of 1973, as amended. Pursuant to Section 7 of the Endangered Species Act of 1973, as revised, it is the responsibility of the Federal action agency (agency), that licenses, permits, or funds the proposed activity, to use the species list and habitat descriptions we have provided to determine if any listed threatened or endangered species or designated critical habitats are present.

Accordingly, for your review we have enclosed a list of the federally listed endangered species that occur in the State of Illinois. This list also provides a description of the habitats that these species are known to utilize. In the counties where new construction is proposed, it will be necessary to consult this list to determine what species occur in those counties as well as the types of habitats they utilize. If the habitats described in the list are located within the new right-of-way, it will be necessary to conduct a survey to determine the presence of any endangered species.

If listed species or designated critical habitats are present, the agency must determine if the project will or will not affect them. This determination and supporting documentation or rationale should be made in writing to this office for review and concurrence.

If the agency determines that the project will not affect any listed species or will not modify or destroy designated critical habitat, and this office concurs with that finding, then the requirements of Section 7 of the Act will have been fulfilled. However, if this office does not concur with the agency's finding of no effect, then the agency should initiate consultation with the Service.

If the agency determines that the project may affect a listed species or modify or destroy designated critical habitat, then the agency must initiate consultation with the Service. The agency has the option of preparing a biological assessment, or of requesting informal discussions with the Service in order to determine if formal consultation is necessary.

If the proposed actions does utilize new right-of-ways, we would also be concerned that it may adversely impact other fish and wildlife resources, especially wetlands. During the planning process these areas should be identified and impacts minimized by avoiding wetland habitats and clearing of forested areas. Under Section 404 of the Clean Water Act, as amended, impacts to wetland areas will need to be coordinated with the U.S. Army Corps of Engineers, Regulatory Functions Branch for issuance of the proper permit.

We appreciate the opportunity to provide our comments early in the coordination process. If you have additional questions or concerns, please contact Mr. Tim Romanski of my staff at (309)793-5800.

Sincerely,

Richard C. Nelson
Field Supervisor

Enclosure

cc: IDOC (Glosser)

TR:am

DISTRIBUTION OF FEDERALLY-LISTED THREATENED (T), ENDANGERED (E), AND PROPOSED (P) SPECIES
ILLINOIS

Revised March 10, 1995

BIRDS	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Peregrine falcon *Falco peregrinus*	E	Breeding	Cook	Rock Island	
Bald eagle *Haliaeetus leucocephalus*	E/PT	Breeding	Adams, Alexander, Bond, Calhoun, Carroll, Fayette, Green, Jo Daviess, Mason, Pike, Pope, Randolph, St. Clair, Union, Williamson	Hancock, Jasper	
		Wintering	Adams, Alexander, Brown, Bureau, Calhoun, Carroll, *Cass, Christian, Clinton, De Witt, Fayette, Franklin, *Fulton, Greene, Grundy, Hancock, *Henderson, Jackson, Jasper, Jefferson, *Jersey, Jo Daviess, Johnson, LaSalle, Madison, Marshall, Mason, McHenry, Menard, *Mercer, Monroe, *Morgan, Moultrie, Ogle, Peoria, Pike, Pulaski, *Putnam, Randolph, *Rock Island, Sangamon, *Schuyler, Scott, Shelby, St. Clair, Tazewell, Union, Wabash, White, *Whiteside, Will, Winnebago, Williamson, Woodford *** Counties with night roosts**		
Least tern *Sterna antillarum*	E	Bare aluvial and dredged spoil islands	Alexander, Jackson (Mississippi River)	Gallatin, Hardin, Massac, Pope, Pulaski (Ohio River); Wabash, White, (Wabash River); Madison (Mississippi River)	Cook, Gallatin, Lake, Madison, Pope
Piping Plover *Charadrius melodus* (Great Lakes drainage)	E	Lakeshore beaches	EXTIRPATED	Lake, Cook (Lake Michigan shoreline)	

FISH	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Pallid sturgeon *Scaphirynchus albus*	E	Rivers	Randolph (Mississippi River)	Mississippi River downstream of its confluence with the Missouri River; Ohio River below Dam #53	

DISTRIBUTION OF FEDERALLY-LISTED THREATENED (T), ENDANGERED (E), AND PROPOSED (P) SPECIES
ILLINOIS

MAMMALS	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Gray bat *Myotis grisescens*	E	Caves	Alexander, Hardin, Johnson, Pike, Pope, Pulaski	*	Adams, Jersey, Madison
Indiana bat *Myotis sodalis*	E	Caves, mines; small stream corridors with well developed riparian woods; upland forests	Adams, #Alexander, Bond Ford, Hardin, Henderson, #Jackson, Jersey, Johnson, #LaSalle, Macoupin, McDonough, #Monroe, Pike, #Pope, Pulaski, Saline, Schuyler, Scott, #Union	Statewide *	Cook, Christian, JoDaviess, Madison Morgan

 # Counties with hibernacula. **Critical Habitat: Blackball Mine, Lasalle County.**
*** Search for bats prior to any cave-impacting project, particularly in southern and southwestern Illinois.**

REPTILES	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Copperbelly watersnake *Nerodia erythgaster neglecta*	PT	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods	Edwards, Gallatin, Hardin, Johnson, Lawrence, Massac, Pope, Richland, Saline, Wabash, White		

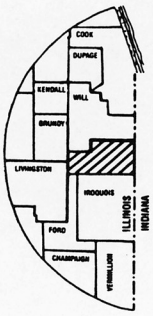
INVERTEBRATES	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Iowa pleistocene snail *Discus macclintocki*	E	North-facing algific talus slopes	Jo Daviess		
Karner blue butterfly *Lycaeides melissa samuelis*	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.	Lake	Carroll, Iriquois, Jo Daviess, Kankakee, Lee, Ogle, Winnebago	
Hines emerald dragonfly *Somatochlora hineana*	PE	Spring fed wetlands, wet meadows & marshes	Cook, Will, DuPage (Des Plaines River drainage)		

DISTRIBUTION OF FEDERALLY-LISTED THREATENED (T), ENDANGERED (E), AND PROPOSED (P) SPECIES
ILLINOIS

MUSSELS	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Fanshell mussel *Cyprogenia stegaria* (=*C. irrorata*)	E	Rivers	White (Wabash River)	Gallatin (Wabash River)	
Fat pocketbook pearly mussel *Potamilus capax*	E	Rivers	*Hancock, *Pike (Mississippi River); White, Gallatin (Wabash River)		
			*** Transplanted populations**		
Higgins' eye pearly mussel *Lampsilis higginsi*	E	Rivers	Jo Daviess, Rock Island, Mercer, Henderson (Mississippi River); Rock River below Steel Dam at Milan	Adams, Carroll, Hancock Pike, Whiteside (Mississippi River upstream of Lock and Dam 22)	
		Essential Habitat: Rock Island (Sylvan Slough)			
Pink mucket pearly mussel *Lampsilis orbiculata* (=*P. abrupta*)	E	Rivers	Massac (Ohio River)	Alexander, Gallatin Hardin, Pope, Pulaski (Ohio River)	
Tuberculed-blossom pearly mussel *Epioblasma torulosa torulosa*	E	Rivers	EXTIRPATED		Clark, Crawford, Lawrence, Wabash (Wabash River)
Orange-footed pearly mussel *Plethobasis cooperianus* (=*P. striatus*)	E	Rivers	Pulaski (Ohio River)	Alexander, Massac, Pope Ohio River below mouth of Cumberland River)	
White warty-back pearly mussel *Plethobasis cicatricosus*	E	Rivers	EXTIRPATED	Clark, Gallatin, White (Wabash River)	
Clubshell *Pleurobema clava*	E	Rivers	EXTIRPATED	Vermilion County (N.Fork Vermilion River)	Clark, Crawford Lawrence,Vermilion Wabash (Wabash R.)
Rough pigtoe *Pleurobema plenum*	E	Rivers	EXTIRPATED		Wabash River and Lower Ohio River
Ring pink *Obovaria retusa*	E	Rivers	EXTIRPATED		Wabash River and Lower Ohio River

DISTRIBUTION OF FEDERALLY-LISTED THREATENED (T), ENDANGERED (E), AND PROPOSED (P) SPECIES
ILLINOIS

PLANTS	STATUS	HABITAT	CURRENT DISTRIBUTION	POTENTIAL HABITAT	HISTORICAL RECORDS
Small whorled pogonia *Isotria medeoloides*	T	Dry woodland	Randolph		
Prairie bush-clover *Lespedeza leptostachya*	T	Dry to mesic prairies with gravelly soil	Cook, DuPage, Lee, Ogle, McHenry, *Winnebago * = introduced	**Search for this species whenever prairie remnants are encountered**	
Running buffalo clover *Trifolium stoloniferum*	E	Disturbed bottomland meadows	NONE		St. Clair, Tazewell Williamson
Lakside daisy *Hymenoxis herbacea*	T	Dry rocky prairies	*Tazewell, *Will * = introduced		
Mead's milkweed *Asclepias meadii*	T	Virgin prairies	*Ford, Saline * = introduced	**Search for this species whenever prairie remnants are encountered**	Cook, Fulton, Hancock, Henderson, Peoria
Decurrent false aster *Boltonia decurrens*	T	Disturbed alluvial soils	St. Clair (Mississippi River floodplain); Bureau, Fulton, Jersey, Madison, Marshall, Mason Morgan, Peoria, Pike, Putnam, Schuyler, Scott, Tazewell, Woodford (Illinois River floodplain)	Brown, Calhoun, Cass, Green, Grundy LaSalle, Pike, (Illinois River floodplain); Alexander, Jackson, Monroe, Randolph, St. Clair (Mississippi River floodplain)	Logan, Menard
Eastern prairie fringed orchid *Platanthera leucophaea*	T	Mesic to wet prairies	Cook, DuPage, Grundy, Henry, Iriquois, Kane Lake, McHenry	**Search for this species whenever prairie remnants are encountered**	Adams, Champaign, DeKalb Fayette, Fulton, Ford, Hancock, Henderson, Jo Daviess, Kankakee, Knox, Lee, Macon, Macoupin, Madison, McDonough, McLean, Menard, Ogle, Peoria, Stark, Stephenson, Will, Winnebago, Union
Price's potato bean *Apios priceana*	T	Wet floodplain forests, shrubby swamps	EXTIRPATED		Union
Leafy prairie clover *Dalea foliosa*	E	Prairie remnants on thin soil over limestone	Will (Des Plaines River floodplain)		Boone, Kane, LaSalle Kankakee, Ogle
Dune thistle *Cirsium pitcheri*	T	Lakeshore dunes	Lake (introduced)		Cook

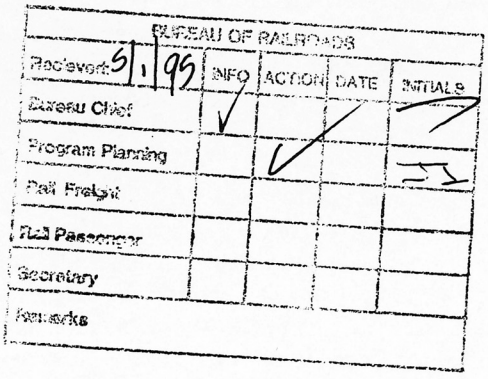


County OF *Kankakee*

Planning Department

189 East Court Street • Kankakee, IL 60901
815-937-2940 • FAX 815-937-2974

Thomas E. Palzer
Planning Director



April 28, 1995

Mr. Merrill Travis, Chief
Bureau of Railroads
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

Attn: Mike Stead

Dear Mike:

The Kankakee County Regional Planning Department is maintaining a continuing interest in the possible development of a high speed rail line between Chicago and St. Louis, Missouri. The Conrail alignment, between Dwight and Kankakee, would run through the west and north side of Kankakee County, therefore, I would like to offer the following related to environmental impacts.

Kankakee County's foremost concern is rail grade closures and their effect on local traffic patterns and emergency services. Six proposed closures in the first study: Rd 4000W; County Highway 6; and Main Avenue on the Conrail route; and Robert Hall Road; McNight Road; and Third Street in Manteno on the Illinois Central route must remain open. The first three roads along the Conrail route are experiencing high residential growth rates. Main Avenue is needed for emergency access to the Riverside Medical Center. Likewise, a high growth rate in residential, commercial, and industrial development exists in the northern corridor of the County along the Illinois Central route.

Other concerns are vehicular safety and farmland access. Illinois Route 17 runs parallel with the Conrail alignment. Illinois Route 50 runs parallel with the Illinois Central alignment. The closing of several crossings in rural areas of Kankakee County will force farm equipment onto major rural arterial, consequently, increasing the chance of vehicular accidents. We need to further examine the effects closing rural crossings has on the farmland access. Should the State close rural crossing, it should be responsible for building frontage and/or access roads along the proposed route so that farm equipment and machinery can safely access farmland.

Concern has been expressed at public information meetings with regard to environmental impacts at the intersection of the Conrail R.R. and Illinois Central R.R., in Kankakee. There is uncertainty as to what type of method will be used to safely move the HSR from one set of tracks to the other. These lines intersect at an approximate right angle, far from the preferred high speed rail alignment.

It is Kankakee County's intention to enhance intermodal transportation. Presently, Kankakee County is involved in various planning phases of a south suburban airport, a western by-pass and upgrading it's existing transportation system. If a route utilizing Conrail was chosen, it is suggested that consideration be given to aligning the proposed HSR route within the by-pass route wherever feasible. This would allow grade separations to serve both the rail and by-pass, and possibly lessen the negative impacts of closures, and involve one land aquisition rather than two.

Finally, I would like to conclude with the positive results a high speed rail intermodal station would have serving the Kankakee metropolitan area. I think a principal stop in Kankakee, or a potential to add stops on selected trains would benefit the high speed rail and the people of Kankakee County. A location at the Kankakee River State Park would enhance the use of the Park, construction of a lodge at the Park, and place the station within close proximity to the path of local development occurring north and west of the Kankakee metropolitan area.

Please refer to the attached map. The alignments shown are not intended to represent a consensus of a group established locally by the County Board Chairman to study the issue. This group was created last week, and is comprised of the chief elected officials of each of the local units of government effected by a possible route right-of-way. The alignments shown represent some preliminary ideas of the Planning Department. The results of the group recommendations will be forwarded to you as they are received.

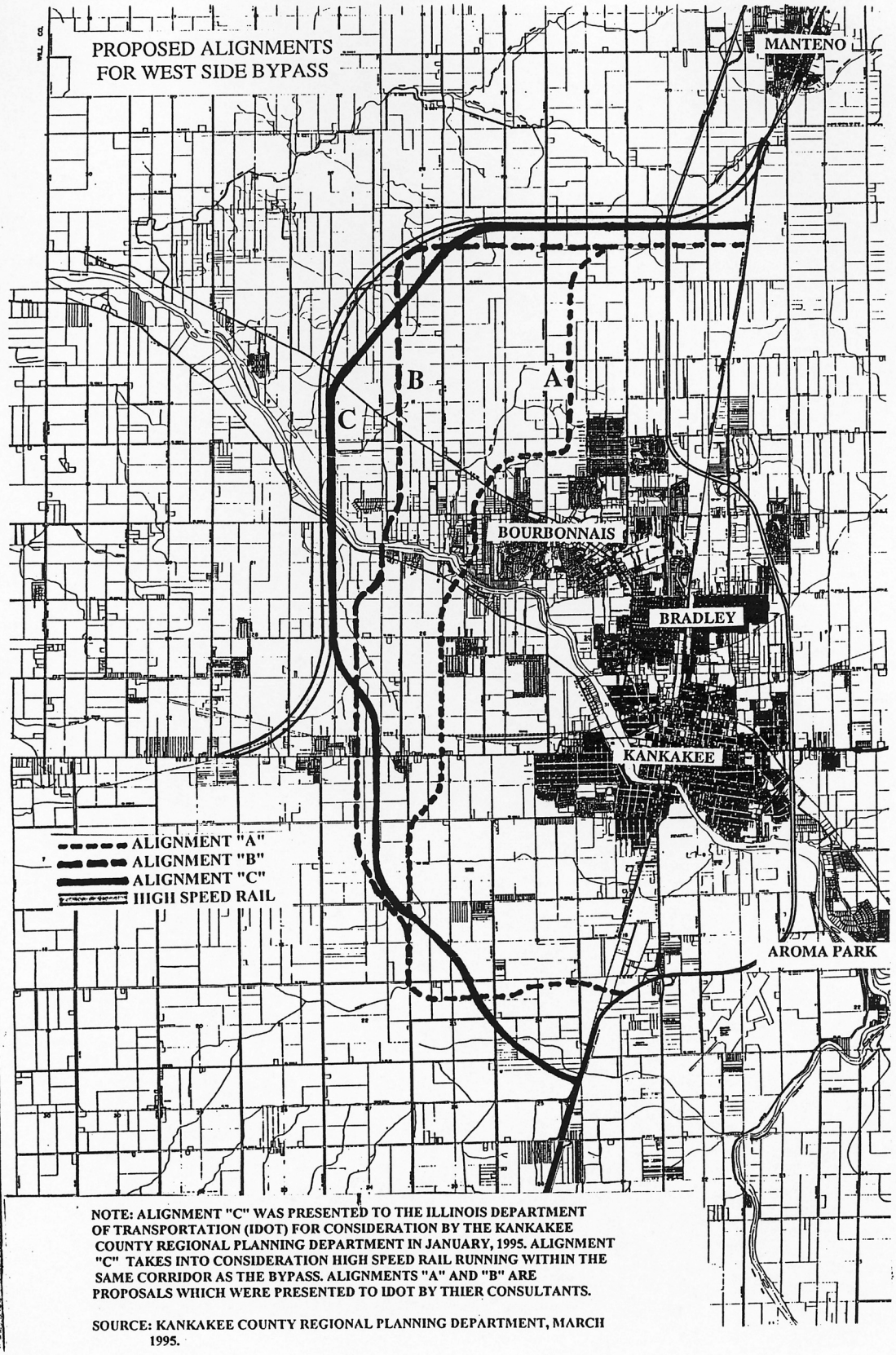
Additional comments may follow pending the results of consideration from local organizations and individuals with respect to both urban and rural crossings. Should you have any questions or wish to discuss the contents of this letter, please do not hesitate to contact me or Brian Billingsley at the number listed above.

Sincerely,

Thomas E. Palzer
Executive Director

TEP/BKB:ng

cc: J. Piekarczyk
S. Arnold
B. York



NOTE: ALIGNMENT "C" WAS PRESENTED TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) FOR CONSIDERATION BY THE KANKAKEE COUNTY REGIONAL PLANNING DEPARTMENT IN JANUARY, 1995. ALIGNMENT "C" TAKES INTO CONSIDERATION HIGH SPEED RAIL RUNNING WITHIN THE SAME CORRIDOR AS THE BYPASS. ALIGNMENTS "A" AND "B" ARE PROPOSALS WHICH WERE PRESENTED TO IDOT BY THIER CONSULTANTS.

SOURCE: KANKAKEE COUNTY REGIONAL PLANNING DEPARTMENT, MARCH 1995.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217-782-0547

May 3, 1995

Mr. Merrill L. Travis, Chief
Bureau of Railroads
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

Re: Environmental Impact Scoping Process
High Speed Rail Line

Dear Mr. Travis:

Thank you for providing information regarding the environmental impact scoping process for the possible development of a high speed rail line between Chicago and St. Louis, Missouri. This information has been reviewed by our Agency and we would like to offer the following comments:

The Bureau of Water has no additional issues to add to the list provided for consideration in the EIS scoping process. Permits and approvals which would be needed for the project include NPDES storm water permits for areas of construction disturbing five acres or more, and water quality certifications for construction in wetlands or waterways.

The Bureau of Land suggests that all contracts for the work contain language that requires proper treatment, storage, or disposal of all wastes generated.

Sincerely,

Bernard P. Killian

Bernard P. Killian
Deputy Director

BUREAU OF RAILROADS				
Recieved: 5/5/95	INFO	ACTION	DATE	INITIALS
Bureau Chief				
Program Planning	✓			
Rail Freight				
Rail Passenger				
Secretary				
Remarks				

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Great Lakes Region
Illinois, Indiana, Michigan,
Minnesota, North Dakota,
Ohio, South Dakota,
Wisconsin

2300 East Devon Avenue
Des Plaines, Illinois 60018

May 4, 1995

Mr. Merrill L. Travis, Chief
Bureau of Railroads
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

Dear Mr. Travis:

At this time, the FAA has no formal comments to provide to your office regarding the possible high speed rail line between Chicago and St. Louis, Missouri. We are aware that you're continuing engineering and environmental studies and we would appreciate being kept abreast of these planning activities.

In the future, please direct all correspondence to Melissa Wishy at the Federal Aviation Administration - Chicago Airports District Office, 2300 E. Devon Avenue, Des Plaines, Illinois, 60018.

Thank you for providing us an opportunity to comment on your project.

Sincerely,

Melissa S. Wishy
Community Planner
Chicago Airports District Office

BUREAU OF RAILROADS

Received: 5/8/95	INFO	ACTION	DATE	INITIALS
Bureau Chief	✓			
[illegible]		✓		JJ
[illegible]				
[illegible]				
Secretary				
Remarks				

U.S. Department of Housing and Urban Development
Environmental Staff
Midwest Office
77 W. Jackson Blvd.
Chicago, Illinois 60604-3507

BUREAU OF RAILROADS

	Received 5/8/95	INFO	ACTION	DATE	INITIALS
Bureau Chief		✓			
Program Planning			✓		
Rail Freight					
Rail Passenger					
Secretary					
Remarks	Draft response, pls				

May 5, 1995

Merrill L. Travis, Chief
Bureau of Railroads
Illinois Department of Transportation
2300 S. Dirksen Parkway
Springfield, IL 62764

Dear Mr. Travis:

Subject: EIS scoping for High speed rail line between Chicago & St. Louis

Thank you for the opportunity to comment on the scoping for the proposed project. HUD supports the pursuit of this proposal, since it promises to provide quality transportation links between these two great cities and points along its corridor in a fashion that will minimize adverse noise and energy impacts associated with air and auto transportation. We wish you good luck in this endeavor.

In line with your request for comments, we suggest that the EIS include analysis of the following issues:

1) Comparison between air and auto transportation, especially relative to energy consumption and noise impacts.

2) Consideration of what would be needed to provide even faster speeds between the two cities and how this would relate to cost and ridership. Would faster speeds, such as those routinely obtained in Europe and Japan, attract greater ridership? Does this improvement fit into a pattern of incremental improvements, so that we could bring the maximum speed up to 125 MPH now and not have to start all over to achieve speeds in excess of 200 MPH?

3) If an alignment to the proposed Peotone airport is being considered, are similar alignments to O'Hare and/or Midway airports being considered? How would these links affect ridership? Where have studies shown that the riders will come from: downtown Chicago, existing rail connections, or existing air connections? Midway seems to fall close to one of the proposed alignments and O'Hare is an existing transportation hub that would seem to provide many rail riders if th e link was relatively painless. Perhaps the train could leave from Midway, with separate spurs to

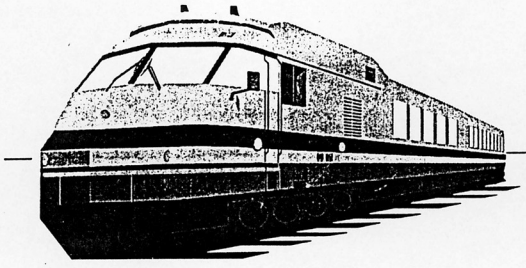
O'Hare, downtown and a third airport all feeding into a Midway terminus.

4) What stops are proposed for the service? Will the EIS examine the indirect impacts associated with providing stops at these locations?

We look forward to further communication on this effort, including receipt of the Draft EIS. Once again, good luck on this important effort.

Very truly yours,

Eugene Goldfarb
Midwest Environmental Officer



Chicago-St. Louis High Speed Rail

Public Officials Workshops Summer 1996

Meeting Purpose & Format

Thank you for attending this workshop for local officials. The principal purpose of this workshop is to present ideas for grade crossing treatments to local elected and appointed officials who have jurisdiction over the areas potentially affected by the project. The project newsletters have described the process which has been followed and the many ways the team has obtained local information to guide them in the development and evaluation of these ideas. Representatives of IDOT and the consultant team are on hand to answer questions you may have or to discuss alternatives or concerns. You may record your ideas and opinions on the comment forms which are available at the entrance. These may be left in the box as you leave or mailed within the next few weeks after you have had time to consider the proposals in more detail.

There will be a short presentation on the status of the project and a summary of the treatment ideas followed by informal small group discussions of specific locations and areas of concern.

Project Highlights

The purpose of the Chicago to St. Louis High Speed Rail Project is to provide improved passenger rail service along the proposed corridor.

The proposed high speed rail service is projected to reduce travel time between Chicago and St. Louis by about two hours, from approximately 5 1/2 hours to 3 1/2 hours. This would provide an attractive alternative to flying for business and personal trips. Construction and operation would create jobs throughout the state. In addition, high speed rail service would enhance access to the economic, cultural, educational and medical opportunities along this corridor.

The project would also improve safety at rail/highway grade crossings along the corridor. Options for enhancing the safety of grade crossings include construction of over or underpasses, upgrading existing warning and protective devices and consolidating grade crossings. These capital improvements would be supplemented by a public education program to increase awareness of train operations and the hazards created when persons attempt to "beat the train" or cross the tracks in unprotected (undesignated) areas.

Environmental Impact Statement

The project team is now preparing an Environmental Impact Statement (EIS) that determines and evaluates the positive and negative consequences that would be associated with the high speed rail project. This EIS preparation is being produced independently of the 1994 Feasibility Study, which examined the financial feasibility of high speed rail service along the Chicago-St. Louis corridor. The EIS is different from the 1994 study because it requires a much more comprehensive and detailed documentation of the existing conditions and preparation of a more refined definition of train operations and crossing treatments. The comments and concerns generated in response to the 1994 study have been carefully considered as part of the current study.

Alternative Routes

The primary high speed rail alignment extends 282 miles from Union Station in downtown Chicago to downtown St. Louis. For the most part, the route follows the existing Amtrak service between Chicago and St. Louis. This alternative would use existing track of the Illinois Central Railroad (IC) from Chicago to Joliet, the Southern Pacific line (SP) from Joliet to Granite City, and the Terminal Railroad Association of St. Louis tracks for the last few miles into downtown St. Louis. Between Chicago and Springfield, the corridor generally follows I-55 and Old Route 66. It passes through metropolitan areas, small agricultural communities, the state capitol, and several regional centers, including Pontiac, Bloomington-Normal, Lincoln, Carlinville, and Alton. Station stops for all trains are proposed in Chicago, Joliet, Bloomington-Normal, Springfield, Alton and St. Louis, with eight round-trips daily. Other stops are being considered for some trains with alternate station stops to provide service to additional communities.

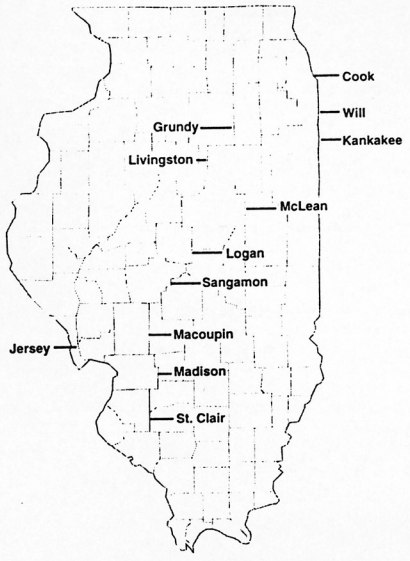


Fig 1: High Speed Rail Corridor Counties

Two alternative alignments have been developed at the northern end of the corridor to respond to the potential development of the South Suburban Airport (SSA) south of Chicago, near Peotone, Illinois. Both alternatives would provide access to downtown Chicago along the Illinois Central main line (IC).

One alternative would use existing Conrail tracks between Dwight and Kankakee as the east-west link to the SP tracks. The second alternative, designated the "Green Grass" alignment, would provide access to the SP tracks between Peotone and Wilmington. Implementation of the "Green Grass" alignment would require construction of about 20 miles of new railroad on new right-of-way approximately 600 feet south of Wilmington-Peotone Road. Both the Conrail and the Green Grass alignments will be evaluated, regardless of the outcome of the proposed airport project.

Grade Crossing Improvement Ideas

Throughout the summer and fall of 1995, the project team met with transportation and planning officials within each of the 12 counties along the high speed rail corridor. The purpose of these meetings was to gather information on land use, development trends and traffic patterns which might influence rail/highway grade crossing treatments. County engineers and representatives from regional planning commissions provided the team with technical data concerning traffic counts and physical roadway limitations, as well as land use and zoning-related information. Private crossing owners were interviewed to determine the current and future uses of their crossings. Throughout the data collection process, the team also made contact with school superintendents, municipal planners, county farm bureau managers and emergency service administrators. The information collected was organized and used to perform a comprehensive evaluation of each rail crossing to determine appropriate treatments.

The Chicago-St. Louis rail corridor has more than 325 existing public and private grade crossings. To make these safe for the increased speed of the trains, most of the crossings will have to be improved. Examples of four types of grade crossing safety improvement ideas are described below and illustrated in **Figure 2**.

Grade Separations

The most effective safety solution for rail crossings are grade separations, which include underpasses and overpasses. However, these structures can cost millions of dollars and may require business and residential relocations due to the land area required for construction.

Vehicle Arresting Barriers (VABs)

Where train speed exceeds 110 mph, a vehicle arresting barrier (VAB) is one alternative to a grade separation. A VAB is a steel mesh net that is automatically lowered with the warning gates to block the road and catch a vehicle that fails to stop. VABs are currently used at draw bridges, ferry slips and reversible highway lanes. Their application at grade crossings will be tested at three existing crossing locations along the Chicago-St. Louis corridor, beginning early next year.

Four-Quadrant Gates

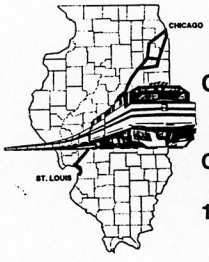
Four quadrant gates (quad gates) block all roadway lanes on both sides of a grade crossing. This device would minimize any chance for motorists to ignore warning lights and drive around lowered crossing gates. Overhead flashing lights can be added as appropriate to increase visibility. Quad gates require additional warning time for proper operation, which increases the time that gates are down at a crossing before a train arrives at the crossing. This could add to traffic delays on heavily traveled roadways.

Electric Lock Gates

Electric lock gates could be considered for private crossings with very low traffic volume. Normally, the gate would be closed and locked. Crossing users would contact the railroad dispatcher from a special call box or cellular phone to unlock the gate.

Consolidation of Crossings

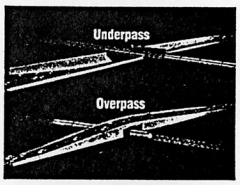
Where grade crossings are closely spaced, consolidation is an option if it does not interface with local emergency vehicles or community access. Frontage roads can be constructed to provide access from property that might otherwise be landlocked with a private crossing closure.



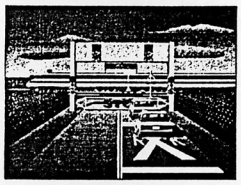
Questions? Comments?

Call the Project Information Line

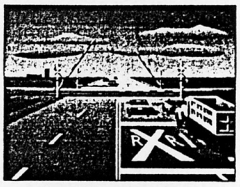
1-800-555-3672



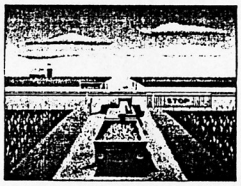
Grade Separations



Vehicle Arresting Barriers



Four-Quadrant Gates



Electric Lock Gates

Fig 2: Crossing Treatment Types

Public Involvement

The project team has conducted an extensive public involvement program since March 1995. This program was structured to provide opportunities for all interested and concerned individuals and groups to voice opinions and concerns related to high speed rail implementation along the Chicago-St. Louis corridor. Opportunities for public involvement have included a toll-free project information line (1-800-555-3672), newsletters, and comment forms. The project newsletter is currently distributed to over 3,700 individuals. These newsletters are event-driven and provide information regarding project developments and upcoming activities. Hundreds of comment forms have been returned to the project team and recorded into a project database, where they are associated with a specific rail crossing or area.

Earlier in the project, a comment form was distributed in the *Fast Track* newsletter. It asked the readers to rank the issues they thought were most important to consider as the high speed rail program was being developed and evaluated. The most important issue was the maintenance of access between residential areas and community services, such as schools, businesses and recreational areas. The second most important factor was the maintenance of access for farm operations, including movement of farm vehicles between fields and to agricultural facilities. The third priority was safety of movement across the tracks, and minimizing noise and vibration.

The public officials workshops are a part of the EIS process. Your input will guide the project team in refining these preliminary ideas for crossing treatments. After incorporating comments from today's workshop, follow-up meetings will be scheduled with local officials before the ideas are taken to the general public. Our objective is to obtain substantive local input and, ultimately, consensus on the most appropriate grade crossing strategy for each community in the proposed high speed rail corridor.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 Mary A. Gade, Director

217 524-4343

February 1, 1999

Mr. Tony Pakeltis
De Leuw, Cather & Company
525 West Monroe, 10th Floor
Chicago, IL 60661

Dear Mr. Pakeltis:

We appreciate the opportunity to provide you comments on the "Draft Air Quality Technical Report" for the Chicago to St. Louis High Speed Rail Project. Our comments are few and, for the most part, recommend that further information or documentation be provided on some of the assumptions made and conclusions drawn. They deal with both the microscale carbon monoxide (CO) emissions analysis as well as the volatile organic compound (VOC) and oxides of nitrogen (NOx) emissions analyses used for addressing general conformity.

Regarding the CO analysis, the modeling assessment projects that the largest CO emission impacts from the proposed High Speed Rail (HSR) Project will occur at crossings which have more than 100 vehicles per day diverted to them due to the closing of an adjacent crossing. The modeling completed predicts only a slight increase in the 1-hour and 8-hour CO concentrations with the highest concentrations, 7.4 and 4.0 parts per million, respectively, still well below the ambient standards. However, to more completely characterize the study we recommend that a description and source of such parameters as the background CO concentration used and the "worst-case" meteorology used in running the CAL3QHC model be included.

In addition, intuitively, it would seem that there is the potential for increased CO emissions at intersections near train stations where traffic is stopped for a longer period due to passenger boardings. In this case, CO emissions from the idling train engine would also be a factor. A discussion regarding the expected emissions in this situation, and how they compare to the analyses of the intersections chosen would be helpful.

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Regarding the determination of conformity with the Metro-East NOx emissions threshold, we recommend that further documentation be supplied regarding the emission reductions generated from the diversion from other modes of travel. The 15 tons per year of reduction cited is crucial to remaining below the 100 ton per year NOx conformity threshold level under the Turbomeca engine usage scenario. Detailed information quantifying the amount of annual vehicle miles of travel in the Metro-East area diverted and the vehicle emissions factors used to estimate the diversion reduction would lend more credibility to the estimate. Similarly, more detailed area-specific information on the additional VMT resulting from the crossing closures would be helpful.

If you have any questions regarding these comments please contact Mike Rogers at 217 524-4343.

Sincerely,

Dennis A. Lawler, Manager
Division of Air Pollution Control

cc: Susan Stitt, IDOT - OP&P

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Marion Illinois Suboffice (ES)
8588 Route 148
Marion, IL 62959
(618) 997-3344
(618) 997-8691 Fax

July 7, 1999

Mr. Peter J. Frantz, Chief of Environment
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

Dear Mr. Frantz:

We have reviewed the wetland, native prairie, and threatened and endangered species reports prepared for the Chicago to St. Louis High Speed Rail Project. These documents are technical reports that will be utilized in the preparation of the project's Environmental Impact Statement (EIS).

In evaluating the endangered species report, we note that a number of federally listed species have not been addressed. Therefore, we are providing the following complete list of species that have ranges that include the concerned area. The EIS should address potential impacts to each of these species.

Classification	Common Name	Scientific Name	Habitat	County
Threatened	Bald eagle	*Haliaeetus leucocephalus*	Breeds and winters along major rivers and large reservoirs	Grundy, Jersey, Madison, Sangamon, St. Clair, Will
Endnagered	Least tern	*Sterna antillarum*	Bare alluvial and dredge spoil islands	Cook, Madison
Endangered	Indiana bat	*Myotis sodalis*	Caves, mines; small stream corridors with well developed riparian woods; upland forests	Statewide

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Classification	Common Name	Scientific Name	Habitat	County
Endangered	Gray bat	*Myotis grisescens*	Caves, feeding over rivers/reservoirs adjacent to forests	Madison
Endangered	Pallid sturgeon	*Scaphirhynchus albus*	Rivers	Madison, St. Clair
Endangered	Illinois cave amphipod	*Gammarus acherondytes*	Karst caves and streams	St. Clair
Endangered	Hines emerald dragonfly	*Somatochlora hineana*	Spring fed wetlands wet meadows and marshes	Cook, Will, Dupage
Threatened	Decurrent false aster	*Boltonia decurrens*	Disturbed alluvial soils	Madison, St. Clair,
Threatened	Eastern prairie fringed orchid	*Platanthera leucophaea*	Mesic to wet prairies	Search for this species whenever prairie remnants are encountered
Endangered	Leafy prairie	*Dalea foliosa*	Prairie remnants on thin soils over limestone	Will

There is no designated critical habitat in the project area at this time.

The decurrent false aster is a floodplain species that prefers disturbed alluvial areas. Seeds of this plant species are distributed by flooding. Consequently, new populations have become established along the Illinois River and in the American Bottoms of Madison and St. Clair Counties due to recent flood events. Wetlands in these areas which may be impacted by the High Speed Rail Project should be surveyed for decurrent false aster.

According to the information provided, native prairie impacts range from 5.01 to 36.91 acres depending on the alternative utilized. As noted above, these areas should be surveyed for the presence of eastern prairie fringed orchid.

Thank you for the opportunity to provide these comments.

Sincerely,

Joyce A. Collins
Assistant Field Supervisor

cc: IDNR (Hamer)
USACE (Hornamen)
USFWS (RIFO, CIFO)

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
111 NORTH CANAL STREET
CHICAGO, ILLINOIS 60606-7206

JUL 08 1999

REPLY TO
ATTENTION OF:

Construction-Operations Division
Regulatory Branch
199900819

SUBJECT: Wetland, Native Prairie, and Threatened and Endangered Species Reports for the Proposed Chicago to St. Louis High Speed Rail Project in Illinois

Illinois Department of Transportation
Attn: Peter Frantz
Chief of Environment
2300 South Dirksen Parkway
Springfield, Illinois 62764

Dear Mr. Peter Frantz:

This is to acknowledge receipt of your May 24 1999 letter and the March 1999 Wetland, Native Prairie, and Threatened and Endangered Species Reports (Reports) regarding the above-referenced project. Based on our review of the Reports, an individual Department of the Army permit under Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403) and/or Section 404 of the Clean Water Act (33 U.S.C. 1344) is required for the project.

The Reports referenced a number of high quality natural resources including wetlands, native prairies, and Federally and state listed endangered and threatened species. It appears that many of these sites are eligible for protection or dedication under the Illinois Nature Preserves Law. The Chicago District recommends preservation of these sites in addition to any proposed compensatory mitigation. Wetland value is based on its inherent quality, function and value. The project's Environmental Impact Statement should note that these sites are valuable public resources.

Part of the Department of the Army's permit review process involves an evaluation of your proposal for compliance with the Section 404(b)(1) Guidelines. A preliminary evaluation of your project indicates that the discharge of fill material into the

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wetlands is a "non-water dependent" discharge and may not be in compliance with these guidelines. Unless clearly demonstrated by the applicant, it is presumed that there are practicable alternatives available which do not require a discharge to an aquatic site or wetland, or which are less damaging to the aquatic ecosystem. Non-compliance with these guidelines can be grounds for denying a permit. This office strongly recommends you carefully examine alternatives to your project. More information will be necessary to determine compliance with the Section 404(b)(1) Guidelines.

Our office will confirm the jurisdictional areas of waters of the United States including wetlands upon further review of your Wetland Report(s) and additional information such as aerial photographs and County Soil Survey maps of the proposed project.

If you have any questions, please contact Mr. Brian Smith of the Regulatory Branch by telephone at (312) 353-6428, extension 4031, or email at brian.l.smith@usace.army.mil.

Sincerely,

Mitchell A. Isoe
Chief, Regulatory Branch

Copies Furnished:

United States Environmental Protection Agency (Pierard)
United States Fish & Wildlife Service (Rogner)
Illinois Department of Natural Resources (Schanzle)
Illinois Department of Transportation (Niemann)

DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT. CORPS OF ENGINEERS
CLOCK TOWER BUILDING – P.O. BOX 2004
ROCK ISLAND. ILLINOIS 61204-2004

REPLY TO ATTENTION OF:

July 16, 1999

Planning, Programs, and
Project Management Division

Mr. William T. Sunley, P.E.
Engineer of Design and Environment
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

Dear Mr. Sunley:

I received your letter dated May 24, 1999, concerning the proposed Chicago to St. Louis high-speed rail project. Rock Island District staff reviewed the information you provided and have the following comments:

a. The lands involved are within the geographic boundaries of the Corps of Engineers' Rock Island District, Chicago District, and St. Louis District. You should also coordinate with these other Districts, if you have not already done so. Their addresses are as follows:

District Engineer
U.S. Army Engineer District, Chicago
111 North Canal Street, Suite 600
Chicago, Illinois 60606-7206

District Engineer
U.S. Army Engineer District, St. Louis
1222 Spruce Street
St. Louis, Missouri 63103-2833

b. As proposed, your project will likely impact wetlands. Any placement of fill or dredged material into waters of the United States (including wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. A Section 404 permit will likely be required for this project. When detailed information is available, please complete and submit an application packet to the Rock Island District for processing. The application should include determinations of wetlands and other waters of the United States, size estimations of impacts to those areas, and wetland types and relative functions.

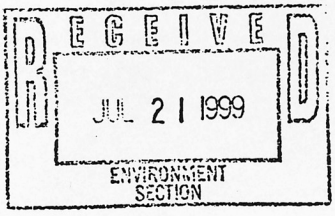
c. The responsible Federal agency for the project should coordinate with the Illinois State Historic Preservation Officer, Old State Capitol, Springfield, Illinois 62701 to determine impacts to historic properties.

d. The Rock Island Field Office of the U.S. Fish and Wildlife Service should be contacted to determine if any federally listed endangered species are being impacted and, if so, how to avoid or minimize impacts. The Rock Island Field Office address is: 4469 - 48th Avenue Court, Rock Island, Illinois 61201. Mr. Rick Nelson is the Field Supervisor. You can reach him by calling 309/793-5800.

No other concerns surfaced during our review. Thank you for the opportunity to comment on your proposal. If you need more information, please call Mr. Randy Kraciun of our Environmental Analysis Branch, telephone 309/794-5174.

Sincerely,

Kenneth A. Barr
Chief, Environmental Analysis Branch



ILLINOIS
DEPARTMENT OF
NATURAL RESOURCES

524 South Second Street, Springfield 62701-1787

George H. Ryan, Governor ● Brent Manning, Director

July 30, 1999

Mr. William Sunley
Illinois Dept. Of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

RE: High Speed Rail
Chicago to St. Louis

ATTN: Pete Frantz

Dear Mr. Sunley:

The Department of Natural Resources has reviewed the threatened and endangered species, native prairie, and wetland reports provided on the project referenced above. These technical reports will be the basis for the project's Environmental Impact Statement.

Threatened and Endangered Species Report Comments

The report did not assess for impacts to the Illinois endangered Indiana Bat. The potential for impacts in the southern portion of the project could potentially have impacts. We feel this issue should be addressed.

There are several plants that were looked for during the survey, but the exact timing for optimum conditions may have been missed and therefore the plant not found. There are three plants at issue that should be reviewed for when the survey was completed. The **ear-leaved foxglove** (page 19) was surveyed in the summer. Late August and early September is a good time to look for it. Was it looked for during this time? Another plant that may have been missed is the **glade quillwort** (page 24). The optimum time for looking for this plant is May and June. Again, when was this plant surveyed for? A third plant that may have been over looked due to the timing of the survey is the state threatened **prairie trout lily** (Erythronium mesochoreum) found in Macoupin county. The ideal time for finding this plant is the first two weeks of April. We suggest a review of these surveys and make another attempt at finding these plants.

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The population of the Hine's emerald dragonfly at the Long Run Seep Nature Preserve is not known at this time, except is thought to be small. It seems that the population should be determined prior to any decision on using this railroad corridor. Should this population be small, even one additional train during the peak times can have a significant impact if additional dragonflies are killed. Added to the potential of some threat during non-peak times on a small population and there could very well be significant adverse impacts.

In the Threatened and Endangered Species Report in Exhibit 6, they show an occurrence of Erythonium mesochoreum east of Plainview near milepost 234.00. Unless the Natural Heritage Biologist is mistaken, that occurrence record is for Liatris scariosa var. niewlandii at Combes Cemetery.

Native Prairie Report Comments

The Native Prairie Report discusses on Page 9 the use of herbicides during maintenance activities as not having an impact on the prairies. These are not the results as observed by IDNR personnel. These maintenance activities have either damaged or completely destroyed prairies. These type of activities should be addressed on the future maintenance of the railroad and included in the establishment of mitigation measures.

The mention of Best Management Practices on Page 9 briefly mention these as measures to reduce impacts from vegetation clearing . These BMPs need to be spelled out so that these practices (BMPs) do not become problematic in that they also cause impacts.

In the prairie reports, one report describes the impacted Macoupin County prairie site milepost 212.5 to 218.5 as being around 1+ acre of grade B quality while its described as C+ prairie elsewhere.

The overall discussion focuses on the loss of C+ or better prairie and de-emphasizes the actual total loss of prairie acreage which needs to be taken into account. These prairies of less quality are holding the potential for becoming higher quality so long as they are not adversely impacted.

On page 15 paragraph two–prairies are so rare and construction so difficult that the losses will not be offset by preservation of existing prairies or restoration of degraded prairies.

This corridor is, and will be for the foreseeable future, under constant development pressure. Therefore, we recommend implementation of a strategy with the railroad and potential developers to forestall the cumulative impacts of the many small projects that occur along this linear alignment. An example of a current secondary use/impact would be the fiber optic cables laid that destroy prairie remnants.

Page 16, last paragraph under Prairie Impact Minimization; The plants used for vegetation need to be identified and agreed to by prairie ecologist. It doesn't identify what plants they have in mind that will be aggressive enough to keep out weeds, yet not aggressive enough to hamper natural succession.

Mitigation should include three parts: 1)Enhancement—A commitment to manage to maintain and restore all (not just some) remaining grade C+ and better prairies on the railroad line.
2) Funding Existing/Proposed Project-----Protection of offsite prairie areas of C+ or greater at a ratio of at least 10 to 1 and 20 to 1 (see above; page 15 paragraph two). This has to be protection of additional prairie that is threatened ; funding of research or helping to manage an existing protected prairie is not adequate. 3) Creation-----This should only occur after the previous two and only on areas that are being destroyed. This is least desirable mitigation.

Mitigation for endangered and threatened species habitat destruction or taking of listed species is not addressed. A system of mitigation must be developed for areas having listed species. This mitigation should be as close to the existing site if possible.

Wetland Report

The comments for the Wetland Report will be forwarded by the Wetlands Program Manager at a later date. This was discussed with Charles Perino on 7-30-99.

If you have any questions on the above, please contact me at 217-785-5500.

Sincerely,

Steve Hamer

Steve Hamer
Transportation Review Program
Division of Natural Resource Review and Coordination

Copy to BRR & CP

Illinois
Department of
Natural Resources

524 South Second Street • Springfield, Illinois 62701-1787

http://dnr.state.il.us

George H. Ryan, Governor • Brent Manning, Director

October 15, 1999

Charles H. Perino, Manager
Wetlands Unit
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62701-1787

RE: Chicago to St. Louis
High Speed Rail Project (HSR)
Environmental Impact Statement Preparation

Dear Dr. Perino:

The Wetland Report for the HSR Environmental Impact Statement referenced above has been evaluated for compliance with the Illinois Wetland Policy Act of 1989 [20 ILCS 830] and the Department has the comments to offer:

- The Wetland Report complies with 17 Ill. Adm. Code. CH. I, Sec. 1090.60 b) 3). The Applicant has made a reasonable attempt to avoid and minimize wetland impacts associated with the development of the proposed alternatives. Of the three alignments being studied, the preferred alignment under the IWPA rules is the Rock Island Alignment because it would impact the fewest wetland acres.

- The Department concurs with the Applicant's intent to maximize wetland impact avoidance by using existing railroad embankments for the new construction, by restricting construction within existing ROW, by using land contiguous to the existing ROW and utilizing the existing railroad embankment to access the construction sites.

- The Department concurs with the Applicant's intent to minimize wetland impacts by the area of disturbance which involve wetlands, the implementation of strict erosion control measures during construction and the commitment to continue to address minimization of wetland impacts during the final design phase of the project.

- The Department concurs with the Applicant's prioritization for wetland mitigation as listed in the Compensatory Wetland Mitigation Plan.

- The Department requests a clarification of the proposed wetland compensation ratios as described on pages 37 and 38 of the Wetland Report. If high quality wetland (those with

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an FQI > 20) are impacted the compensation ratio is to be 5.5:1 in all cases rather than the 2:1 suggested in the report.

Thank you for the opportunity to provide comments on the Wetland Report that will become part of the project's EIS. The Department will continue to work with the Department of Transportation throughout the development of this project to insure compliance with the IWPA rules. Please contact me at 217/785-5500 if you have any questions concerning my comments on this report.

Sincerely,

Patrick A. Malone, Manager
Interagency Wetland Program
Division of Natural Resource Review and Coordination

cc: Steve Hamer

U.S. Department of Transportation

United States Coast Guard

Commandant
United States Coast Guard
BRIDGE BRANCH

1222 SPRUCE STREET
ST. LOUIS, MO 63103
Staff Symbol: (OB)
Phone: 314 539-3900 EXT 378
FAX: 314 539 3755

16590
09/21/99

Mr. Frank Hartl
Illinois Department of Transportation
High Speed Rail Manager
Bureau of Railroads
2300 South Dirksen parkway
Springfield, IL 63103-2832

Subj: DEIS – CHICAGO – ST. LOUIS HIGH SPEED RAIL PROJECT

Dear Mr. Hartl:

Please refer to your letter dated 14 September 1999 that forwarded the DEIS – Chicago-St. Louis High Speed Rail project for our review and comment.

Overall the DEIS was well prepared and addressed the majority of issues. However, the document did omit the following key issues:

1. Navigable waterways. Page 2-68 lists several waterways that are identified as navigable. Two major navigable in fact waterways that were omitted are the Illinois River and the Des Plaines River. Together these are part of the Illinois Waterway that extends from the Mississippi River near St. Louis, MO to Chicago, IL. The Illinois Waterway is one of the major commercial waterways of the United States.
2. Bridges used by the proposed project for crossing the Illinois Waterway and the Mississippi River were not identified. This is especially important if the bridges involved are drawbridges. Based on the drawings, it appears the route will cross navigable waterways in the Chicago and Joliet, IL areas and St. Louis, MO. The bridges should be identified.
3. Impacts of high speed trains on drawbridge operations. If the trains will use existing drawbridges, the impact of these trains on the operation of drawbridges must be discussed.
4. Bridge permits. The DEIS states that no new bridges will be constructed to support the proposed rail operation. However, alteration of existing bridges, such as widening and adding new piers, could require Coast Guard Bridge Permits or Permit amendments.

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Subj: DEIS – CHICAGO – ST. LOUIS HIGH SPEED RAIL PROJECT

If a bridge permit or amendment is required we can only use the DEIS to support the permit action if the Coast Guard has been designated as a cooperating agency. Bridge permits upstream of Lockport Lock and Dam should be submitted to the Commander (obr), Ninth Coast Guard District, 1240 East Ninth Street, Cleveland, OH 44199-2090; Bridge permits downstream of Lockport Lock and Dam must be submitted to this office. Please contact me if you need additional information.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

Copy: CCGD9(obr)

Missouri
Department
of Transportation

MoDOT

Henry Hungerbeeler, Director

105 West Capitol Avenue
P.O. Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.state.mo.us

October 28, 1999

Mr. Frank Hartl
High Speed Rail Manager
Bureau of Railroads
2300 South Dirksen Parkway
Springfield, IL 62764

Dear Mr. Hartl:

Attached are comments from our Preliminary Studies Division concerning the environmental assessment for the Chicago to St. Louis High Speed Rail Corridor.

Sincerely,

Mel Sundermeyer, Director
Multimodal Operations Division

ck

Attachment

MEMORANDUM

Missouri Department of Transportation
Preliminary Studies Division
Second Floor, Support Center

TO: Mel Sundermeyer
Director, Multimodal Operations

FROM: Mark S. Kross *Mark*
Assistant to the Division Engineer - Environment
Preliminary Studies Division

DATE: October 28, 1999

SUBJECT: Chicago to St. Louis High Speed Rail Corridor
Preliminary Draft Environmental Impact Statement
Review Comments

I have reviewed the preliminary Draft Environmental Impact Statement (pDEIS) for the proposed Chicago to St. Louis High Speed Rail (HSR) Corridor. The document is comprehensive and well written. The corridor itself will have little effect on Missouri.

I do have three coments:

1. Page 5-43, 1st paragraph Text mentions that the study is undergoing a merged process for the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act. If this is a merged effort, then the project proponents need to assure that the U.S. Army Corps of Engineers is invited to participate in the public hearings for the HSR so that the Corps can satisfy its public interest review requirements concurrently with the NEPA effort.

2. Page 7-1, Distribution of the Draft EIS The approved Draft EIS also should be circulated to Missouri U.S. Senators Bond and Ashcroft. U.S. Representative William L. Clay of Missouri also should receive a copy.

3. Page 7-2, Distribution of the Draft EIS The approved Draft EIS also should be circulated to the appropriate Missouri State Senators and State Representatives. The name of our agency should be changed from "Missouri Highway and Transportation Department" to "Missouri Department of Transportation". The Missouri Department of Natural Resources should be added to the distribution list. Its address is P.O. Box 176, 205 Jefferson Street, Jefferson City, MO 65102. Mr. Stephen Mahfood is the director of that agency.

I have no other comments. I am returning the pDEIS to you.

msk

J:/krossm/chstrail.sem

Our mission is to provide preliminary engineering support for Missouri's transportation system while [illegible] environmental and cultural resources