

CHAPTER 2 ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the alternative actions considered for implementing the proposed passenger rail Project between Chicago, Illinois, and Iowa City, Iowa.

As discussed in Chapter 1, Purpose and Need, the Project is part of the MWRI to develop and operate a Midwest Regional Rail System (MWRRS). The MWRI envisions a rail network of more than 3,000 route-miles to serve nine states (Illinois, Minnesota, Wisconsin, Michigan, Ohio, Indiana, Iowa, Missouri, and Nebraska) with a combined population of 60 million people, a fifth of the total population of the United States. Portions of the 3,000-mile, MWRRS are part of the national High Speed Rail system designated under the Intermodal Transportation Efficiency Act of 1991 (consisting of the existing Northeast Corridor and ten major corridors identified for potential high-speed rail projects). Chicago would serve as the hub for nine corridors in the MWRRS noted in Chapter 1 and shown in Figure 1-2.

Secondary corridors and branch lines connected to these corridors would provide passenger rail service to other cities and towns including Quincy, Illinois; Green Bay, Wisconsin; Pontiac, Michigan; Grand Rapids, Michigan; Holland, Michigan; and Port Huron, Michigan. The system would provide scheduled service to other regional centers including Springfield, Illinois; Madison, Wisconsin; Kalamazoo, Michigan; Lansing, Michigan; Toledo, Ohio; Fort Wayne, Indiana; Indianapolis, Indiana; Iowa City, Iowa; Des Moines, Iowa; Omaha, Nebraska, and Jefferson City, Missouri.

A feeder passenger-bus system, with service schedules coordinated with the passenger rail service, would connect smaller towns and cities with the passenger rail corridors. With the full implementation of the MWRRS, planned passenger rail routes, and complementary feeder bus service, approximately 90 percent of the Midwest region's population would be within an hour's ride of a MWRRS rail station and /or within 30 minutes of a MWRRS feeder bus station. Passenger rail service in each of these corridors would be implemented in increments.

The proposed Chicago to Iowa City Intercity Passenger Rail Service is Phase 3 (of seven phases) of the MWRI and is part of the proposed Chicago to Omaha corridor. A feasibility study was completed by Amtrak for the corridor between Chicago and the Quad Cities of Iowa and Illinois. Subsequently, a feasibility study was completed by Amtrak for the extension of service between the Quad Cities and Iowa City. During the development of these studies, Illinois DOT, Iowa DOT, host railroads, local government representatives, and advocacy groups were consulted to develop alternatives for the passenger rail service (Franke et al., 2008a; Franke et al., 2008b).

The proposed Chicago to Iowa City Intercity passenger rail service would result in the reestablishment of intercity passenger rail service between Chicago and the Quad Cities

and to Iowa City. The Project would benefit the communities by providing transportation options and improving connectivity to Chicago. The Project would serve a market that is not currently served and provide an affordable and competitive modal option.

The MWRRI plan for service levels on the Chicago to Iowa City corridor is for five round-trip passenger TPD. However, consistent with the incremental approach adopted by the MWRRI for the development of the MWRRS, Illinois DOT and Iowa DOT propose to initiate passenger service on the corridor at two round-trip passenger TPD. Both the two round-trips per day initial service level and the five round-trips per day ultimate service level are considered in this assessment.

The evaluation of the five round-trips per day scenario is included in this Tier 1 Service Level EA because this is the ultimate service level that Illinois DOT and Iowa DOT, as well as the MWRRI, envision at some point in the future. However, since the High Speed Intercity Passenger Rail (HSIPR) grant application only requests the funding required for the initial service level, and all of the improvements required for the ultimate service level have not been fully defined, Illinois DOT and Iowa DOT recognize that this Tier 1 Service Level EA may need to be revisited before the ultimate service level of five round-trip passenger TPD is implemented. The implementation of the initial service level of two round trips per day would have independent utility and would not necessitate the ultimate service level of five round-trip TPD, nor would it foreclose any future opportunities for passenger rail service in the region.

2.2 NO-BUILD ALTERNATIVE

The No-Build Alternative would consist of operating the current trackage and operations with the present level of maintenance and no appreciable change to current track configuration or operating conditions. The No-Build Alternative would not meet the Project purpose and need because passenger rail service would not be reestablished in the Quad Cities or Iowa City, there would not be an attractive alternative to highway or airline travel, and congestion of these modes of transportation in the Chicago to Quad Cities and Iowa City area would not be reduced.

The No-Build Alternative was retained for detailed analysis to allow equal comparison to the two round-trip TPD and five round-trip TPD scenarios and to help decision-makers and the public understand the consequences of taking no action. Additionally, NEPA requires consideration of no action to serve as a baseline comparison with the proposed action and other alternatives seriously considered.

2.3 TWO ROUND-TRIP TRAINS PER DAY SCENARIO

Initial passenger service would begin with two round-trip TPD. Future passenger rail service operations could increase to five round-trip TPD; the impacts of five round-trip TPD are discussed in Section 2.4, Five Round-trip Trains per Day Scenario.

Feasibility studies were previously conducted to identify a range of potential alternative routes. Three alternatives were considered for the two round-trip TPD scenario: Route A (Amtrak-BNSF-IAIS), Route B (Amtrak-CN-Metra/Rock Island-CSXT-IAIS), and an alternative route through Chicago to New Lenox to Metra/Rock Island (Franke et al., 2008a; Franke et al., 2008b). Route C, which was eliminated from further consideration,

would use Metra's Southwest Service route from Chicago through New Lenox. A connection from the Southwest Service route to the Metra Rock Island District route would be required because these two routes are grade separated. This alternative was dismissed from further consideration because the land needed to construct the connection includes part of a public park; local officials indicated vigorous opposition to use of parkland for the proposed connection (Franke et al., 2008a)

The No-Build, Route A, and Route B alternatives were retained for detailed study. The following text identifies activities associated with both of the alternatives.

2.3.1 Preferred Alternative (Route A – Amtrak-BNSF-IAIS)

The Amtrak feasibility study indicated that the Route A Alternative (Chicago through Wyanet to Quad Cities to Iowa City) should be the Preferred Alternative because this route is currently used to provide Amtrak service on the portion of this line from Chicago through Princeton and would require fewer capital improvements than Route B Alternative (Franke et al., 2008a; Franke et al., 2008b). The Preferred Alternative consists of using the tracks of three rail carriers: Amtrak (1.6 miles), BNSF (115.3 miles), and IAIS (102.3 miles) to provide passenger rail service between Chicago and Iowa City (see Figure 1-1). The passenger rail service would use the Arsenal Bridge to cross the Mississippi River. USACE owns and operates the Arsenal bridge, but IAIS is responsible for the track and signal maintenance across the bridge.

The Project would provide two round-trip passenger TPD travelling at speeds of up to 79 mph. The Route A Alternative would provide passenger rail service from Chicago to existing Amtrak stations at La Grange Road, Naperville, Plano, Mendota, and Princeton; expanding existing passenger rail service between Chicago and Princeton and introducing passenger rail service to Geneseo, the Quad Cities, and Iowa City, where there is currently no passenger rail service.

The Chicago through Wyanet route section is currently used by Amtrak as part of the long distance California Zephyr and Southwest Chief passenger service to the west coast and for regional intercity passenger service on the Illinois Zephyr and the Carl Sandburg to Quincy, Illinois. Amtrak currently operates an average of eight TPD on the section of BNSF rail line between Chicago and Wyanet (four westbound and four eastbound). The maximum speed for passenger rail service on the BNSF rail line is currently 79 mph. The BNSF line is used by Metra commuter trains from Chicago's Union Station to Aurora, Illinois, (an average of 81 commuter TPD) and by freight trains (an average of 35 TPD between Chicago and Eola Yard in Aurora, and an average of 18.5 TPD west of the Eola Yard through Wyanet). The IAIS line from Wyanet to Iowa City is not currently used for passenger rail service, but is used by freight trains (an average of 10 TPD through Wyanet to the Quad Cities, and an average of six TPD from the Quad Cities to Iowa City).

The BNSF line is mostly double and triple track, is signalized, and is under centralized traffic control (CTC). The IAIS line is single track, is non-signalized, and operates under track warrant control (TWC).

The Route A Alternative would include track upgrade, construction of a connection track, installation of a CTC system including a wayside signal system and remote control

switches, and provision of station facilities at Geneseo¹, Illinois; the Quad Cities; and Iowa City (Franke et al., 2008a; Franke et al., 2008b).

Track Upgrades

The existing Amtrak track from Union Station in Chicago to its connection with the BNSF track (1.6 miles) and the BNSF track from Chicago to Wyanet (115.3 miles) is in excellent condition and would not require any upgrade to support train service at speeds of up to 79 mph². The IAIS track from Wyanet to Iowa City is currently a mixture of jointed rail and continuous welded rail (CWR). Approximately 9 miles of the IAIS track between Wyanet and Iowa City consists of jointed rail; this would be replaced with CWR. There are also a few joints still remaining within the CWR sections that would be welded, and worn CWR at two curve locations that would be replaced prior to implementing the proposed passenger rail service. Many of the crossties would need to be replaced and the track would need to be resurfaced (correcting the alignment of the rails to make them smooth by compacting the ballast and straightening and leveling the track). Most existing curves would require an increase in superelevation to allow higher train speeds. At-grade crossing protection would be upgraded to support the proposed 79 mph operation (Franke et al., 2008a; Franke et al., 2008b).

Most of the track rehabilitation from Chicago to Iowa City would be completed within the existing railroad grade, but some ditching, minor bridge and culvert work, elimination of mud spots in the track, and shoulder work as warranted to support speed upgrades may be required outside the existing railroad grade.

Wyanet Connection

Approximately 1 mile southwest of Wyanet, the BNSF Railway track is grade-separated over the IAIS track; there is currently no connection between the tracks. To permit straightaway train movements a connection track (approximately 4,000 feet long) would be constructed in the northwest quadrant of the intersection (see Figure 2-1). The connection would be designed to accommodate a train speed of 50 mph. Approximately 7 acres of ROW would be required for the proposed connection.

Wayside Signals and Remote Control Switches

The existing IAIS track from Wyanet to the Quad Cities and from the Quad Cities to Iowa City is non-signalized TWC territory. A CTC wayside signal system, compatible with future positive train control (PTC) overlay equipment, would be installed along these route sections. Dispatcher-controlled power switches would be installed at existing and new freight sidings for passenger service. Tree and brush clearing would be performed as needed to provide necessary sight distances for the wayside signal system. Upgrades as warranted will be implemented to the IAIS's dispatching center. Both BNSF and IAIS's dispatching offices will be automatically notified as trains from one railroad are being routed onto the other railroad.

¹ The Geneseo Station was identified in the Amtrak feasibility study and was not included in the MWRRI study. As a result, the MWRRI documents, including the MWRRI SDP, do not include a station at Geneseo.

² See Section 3.21 Indirect and Cumulative Impacts for a discussion concerning improvements required at the BNSF Eola Yard in Aurora, Illinois.

At-grade Roadway Crossings

The existing Amtrak track from Union Station in Chicago to its connection with the BNSF track and the BNSF track from Chicago to Wyanet is in excellent condition and would not require any at-grade crossing upgrade to support train service at speeds of up to 79 mph. Due to the increased speed (from 40 mph to 79 mph) on the Wyanet to Iowa City section, approximately 180 public and private at-grade crossings would be improved. Tree and brush clearing would be performed at crossings where needed to address sight distance issues. Public at-grade crossing warning devices would be upgraded to constant warning time devices (CWTD), and at a minimum, flashing light signals with gates would be provided.

Additional safety measures (for example, medians or quad gates) would be considered for locations with problematic geometric conditions or chronic accident histories. Potential crossing closures/consolidations or grade separations would be identified for areas with multiple crossings nested together within a short distance. All private at-grade crossings would be upgraded to provide, at a minimum, passive warning signage. Private industrial or other heavily used private at-grade crossings would use flashing light signals with gates where warranted by traffic volumes and site conditions. Farm and other low-volume private at-grade crossings would use passive warning signage at all locations and would also include locked gates at locations where there are multiple tracks, sight distance issues, or other significant risk factors. Crossings with humps would be graded to eliminate the potential for hanging up low-clearance equipment. Crossing improvements or closings will be evaluated in subsequent Tier 2 Project Level NEPA documents.

Station Facilities

The proposed passenger rail service would continue to use existing stations at La Grange Road, Naperville, Plano, Mendota, and Princeton, Illinois. Amtrak stations are proposed at Geneseo and Moline, Illinois; and Iowa City, Iowa (Franke et al., 2008a; Franke et al., 2008b).

A site for an Amtrak station in Geneseo has not yet been determined (see Figure 2-2). Construction and operation of the Geneseo Amtrak station will be evaluated in subsequent Tier 2 Project Level NEPA documents.

The Rock Island County Metropolitan Mass Transit District, along with the City of Moline, is planning to construct an Amtrak station near the existing bus station in downtown Moline as part of Centre Station, a transit oriented development (see Figure 2-2). The Centre Station site is also being studied for a commuter rail station and could develop into an intermodal transit facility, linking passenger rail, commuter rail, local and regional bus, water taxi, and other non-transit modes of transportation such as automobiles and bicycles (S.B. Friedman and Company, July 2009).

The potential for reacquiring and remodeling the former passenger rail service terminal in Iowa City, near Wright Street and Dubuque Street, for use as an Amtrak station is being explored (see Figure 2-3). The former station is currently being used for non-rail purposes.

An overnight train storage track location in Iowa City would be identified. A small building facility would be needed for train crews, storage of cleaning equipment, and communications. Standby power and potable water would also be required. Several sites for the storage track are being explored and will be evaluated in subsequent Tier 2 Project Level NEPA documents.

Other Infrastructure Improvements

The IAIS crossing of the BNSF line at Colona would be improved to increase the operating speed of the proposed passenger rail service trains. Currently, train speeds at this crossing are limited to 10 mph. Improvements would also be implemented at the Rock Island Yard to reduce congestion from switching operations. Relocation of the Rock Island Yard to Silvis is also under consideration (Hanson Professional Services, Inc., July 3, 2008).

Schedule

The proposed passenger rail service would provide an alternative to highway or air transportation between Chicago, the Quad Cities, and Iowa City. A typical passenger rail service train departing Chicago would arrive in the Quad Cities in approximately 3.3 hours and in Iowa City in approximately 5 hours. The typical time of travel and distances between stations, and a preliminary passenger train schedule is provided in Appendix A.

2.3.2 Route B Alternative (Amtrak-CN-Metra/Rock Island District-CSXT-IAIS)

The Route B Alternative consists of using the tracks of five rail carriers: Amtrak (1.6 miles), CN (1.0 miles), Metra/Rock Island District (39.4 miles), CSXT (54.0 miles), and IAIS (142.2 miles) to provide passenger rail service between Chicago and Iowa City. The Project would provide two round-trip passenger TPD travelling at speeds of up to 79 mph. The Metra/Rock Island line is used for Metra commuter passenger service between Chicago and Joliet (54 TPD). There is currently no passenger rail service between Joliet and Iowa City. The CSXT line is currently used for freight trains (six TPD) from Joliet to Utica, Illinois. An average of 10 freight TPD operate on the IAIS line between Utica and Moline; an average of six freight TPD operate on the IAIS line between Moline and Iowa City.

The Project would include track upgrade, installation of a wayside signal system and remote control switches, and provision of station facilities at Morris, La Salle, Geneseo, and Moline, Illinois, and Iowa City, Iowa. A station stop is also proposed for the existing Amtrak station at Joliet. A connection track would not be required near Wyanet, as the existing IAIS track continues both east and west of Wyanet.

Track Upgrades

The existing Metra/Rock Island District track from Union Station in Chicago to its connection with the CSXT track in Joliet is in excellent condition and would not require any upgrade to support train service at speeds of up to 79 mph. The CSXT track from Joliet to the IAIS track in Bureau is in various states of condition; the majority of this track is jointed rail with crossties that are insufficient to support the higher speed of the proposed passenger rail service. All of the remaining jointed rail and crossties in poor condition would need to be replaced to support the proposed passenger rail service. The

entire line from Joliet to Bureau would be resurfaced; this would include increasing the superelevation of curves for higher speed as required. With the exception of a short section of jointed rail at Bureau, the IAIS line from Bureau to Wyanet consists of CWR track. The jointed rail would be upgraded to CWR track and crossties would be replaced (Franke et al., 2008a).

The Metra/Rock Island District track is used for commuter trains from Chicago to Joliet. The Metra/Rock Island line is double track to Joliet and is controlled via CTC. The CSXT section of this route (west of Joliet) is used by freight trains. Due to a heavy concentration of industrial rail customers west of Joliet, local train traffic is heavy, with numerous turnouts and sidings. The CSXT line is single track; sidings at Rockdale and Seneca provide opportunities to pass.

Most of the track rehabilitation from Chicago to Wyanet would be completed within the existing railroad grade, but some ditching, minor bridge and culvert work, elimination of mud spots in the track, and shoulder work as warranted to support curve speed upgrades may be required outside the existing railroad grade.

The Route B Alternative would use the existing IAIS line from Wyanet to Iowa City (the same line as under the Route A Alternative). Track upgrades along this section would be the same as described under Route Alternative A.

Wyanet Connection

A connection track would not be required for the Route B Alternative, as this alternative would use the existing IAIS line from Utica, Illinois to Iowa City.

Wayside Signals and Remote Control Switches

The existing CSXT and IAIS track from Joliet to Wyanet is non-signalized. A CTC wayside signal system compatible with the future PTC overlay would be installed along these route sections. Remote controlled switches would be installed at ten siding tracks. The Amtrak feasibility study recommends conducting a train traffic flow simulation on the CSXT section to determine if additional line or switching capacity would be required (Franke et al., 2008a).

At-grade Roadway Crossings

The existing Amtrak-owned track from Union Station in Chicago to its connection with CN's St. Charles Airline (0.8 miles) and the CN section to 16th Street Tower have no at-grade highway/rail crossings. Metra's Rock Island Subdivision between 16th Street Tower and Joliet has several at-grade road crossings. The route is in excellent condition and would not require any at-grade crossing upgrade to support train service at speeds of up to 79 mph (Franke et al., 2008a). Due to the increased speed (from 40 mph to 79 mph) from Joliet to Utica on CSX's New Rock Subdivision and from Utica to Iowa City section, more than 180 at-grade public and private at-grade crossing would be improved. Tree and brush clearing would be performed at crossings where needed to address sight distance issues. Public at-grade crossing warning devices would be upgraded to CWTD and at a minimum flashing light signals with gates would be provided.

Additional safety measures (for example, medians or quad gates) would be considered for locations with problematic geometric conditions or a chronic accident history. Potential

crossing closures/consolidations and grade separations would be identified for areas with multiple crossings nested together within a short distance. All private at-grade crossings would be upgraded to provide at a minimum passive warning signage. Private industrial or other heavily used private at-grade crossings would utilize flashing light signals with gates where warranted by the traffic volumes and site conditions. Farm and other low volume private at-grade crossings would utilize passive warning signage at all locations and also include locked gates at locations where there are multiple tracks, sight distance issues or other significant risk factors. Crossings with humps would be graded to eliminate the potential for hanging up low-clearance equipment. Crossing improvements or closings will be evaluated in subsequent Tier 2 Project Level NEPA documents.

Station Facilities

The proposed passenger rail service would continue to use an existing Amtrak station at Joliet. Additional stations are proposed for Morris and La Salle on the CSX section (see Figure 2-4). Similar to the Route A Alternative, Amtrak stations are proposed at Geneseo, Moline, and Iowa City along the IAIS (see Figure 2-2 and Figure 2-3) (Franke et al., 2008a).

Similar to the Route A Alternative, Route B would require an overnight train storage track location, a small building facility for train crews, storage of cleaning equipment, and communications; and standby power and potable water.

Other Infrastructure Improvements

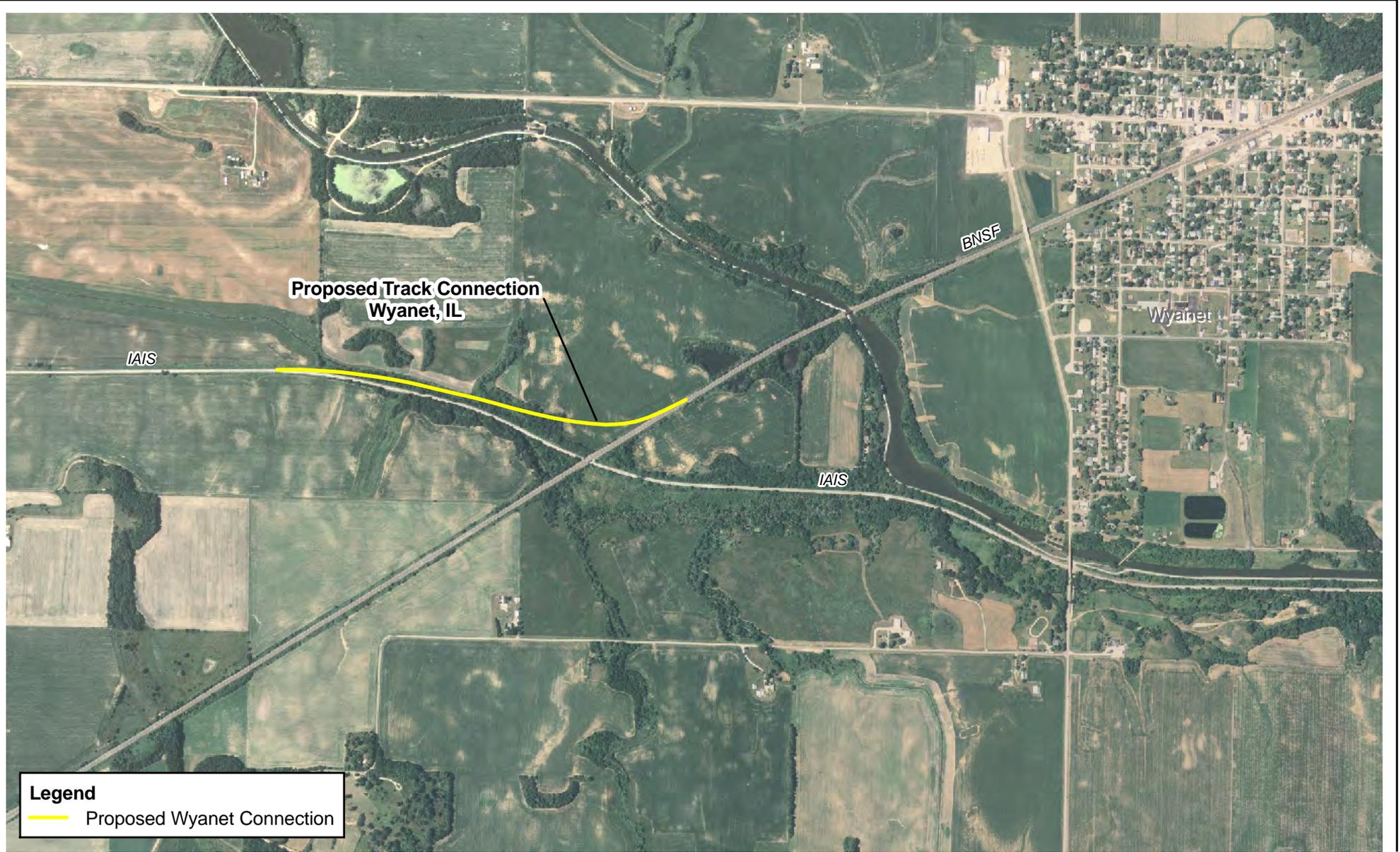
The IAIS crossing of the BNSF line at Colona and access through the Rock Island Yard area would be improved to increase the operating speed of the proposed passenger rail service trains, as discussed in the Preferred Alternative. Relocation of the Rock Island Yard to Silvis is also under consideration (Hanson Professional Services, Inc., July 3, 2008).

Table A-5 in Appendix A provides a comparison of estimated order of magnitude capital costs of Route A and B alternatives. Schedule

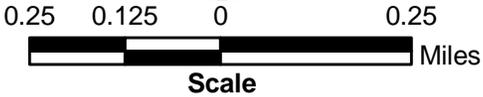
A typical passenger rail service train departing Chicago would arrive in the Quad Cities in approximately 5 hours and in Iowa City in approximately 6.5 hours. The typical time of travel and distances between stations, and a preliminary passenger train schedule is provided in Appendix A.

2.4 FIVE ROUND-TRIP TRAINS PER DAY SCENARIO

Operation of the Chicago to Iowa City intercity passenger rail service is proposed to begin with an initial service level of two round-trip TPD, as discussed in Section 2.3, Two Round-trip Trains per Day Scenario. The ultimate service level for the Chicago to Iowa City intercity passenger rail service, as specified in the MWRRI Project Notebook, is five round-trip TPD. The five round-trip TPD are anticipated to operate at 90 mph from Chicago to Wyanet on BNSF and at 79 mph from Wyanet to Iowa City on IAIS. A separate Tier 1 Service Level NEPA document and analysis would be required prior to increasing the train frequency and train speeds. The 90 mph operational speed will be addressed in that Tier 1 Service Level NEPA document.



Legend
— Proposed Wyanet Connection

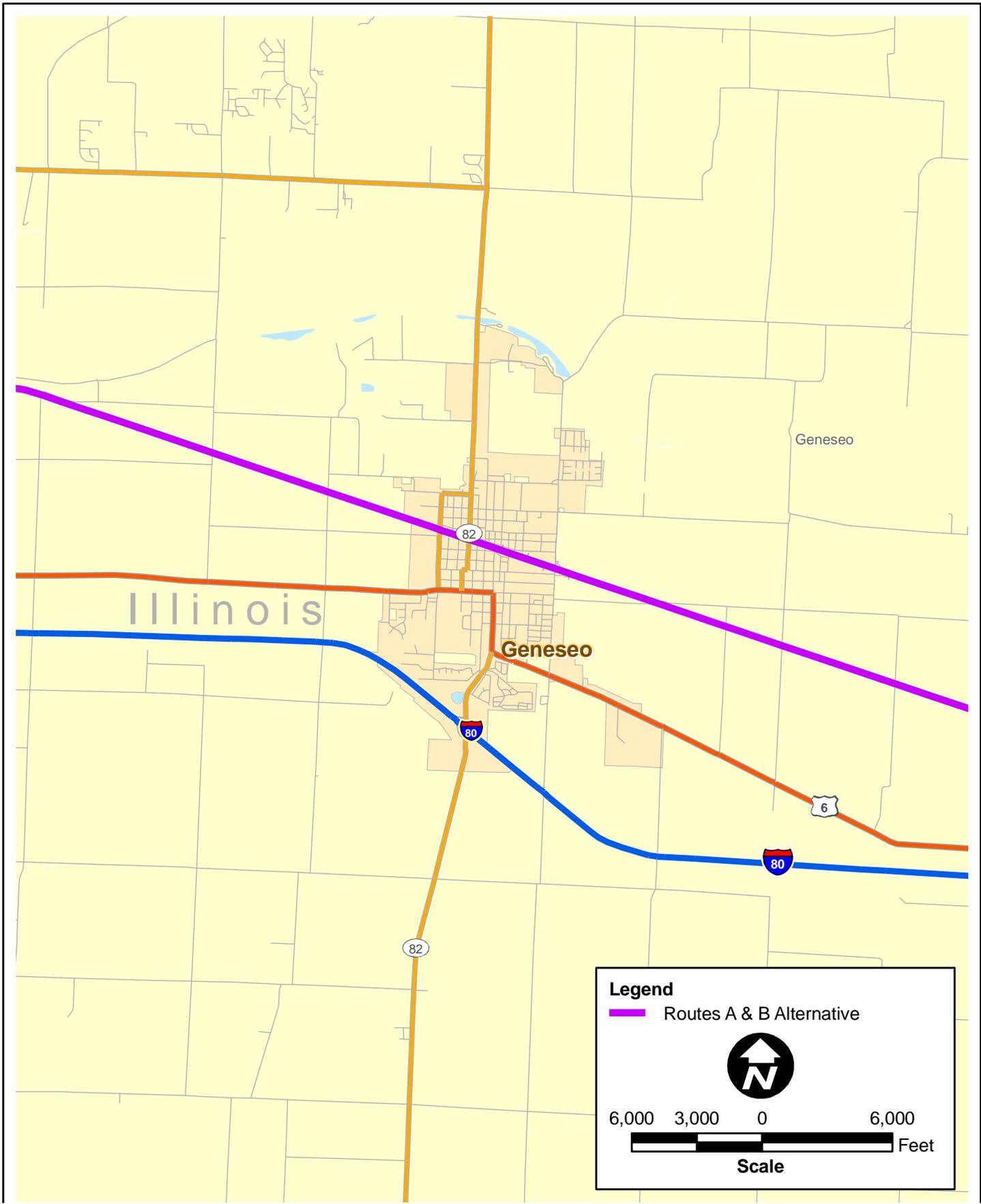


Wyanet Connection

Chicago to Iowa City Intercity Passenger Rail Service

DATE	September 2009
FIGURE	2-1

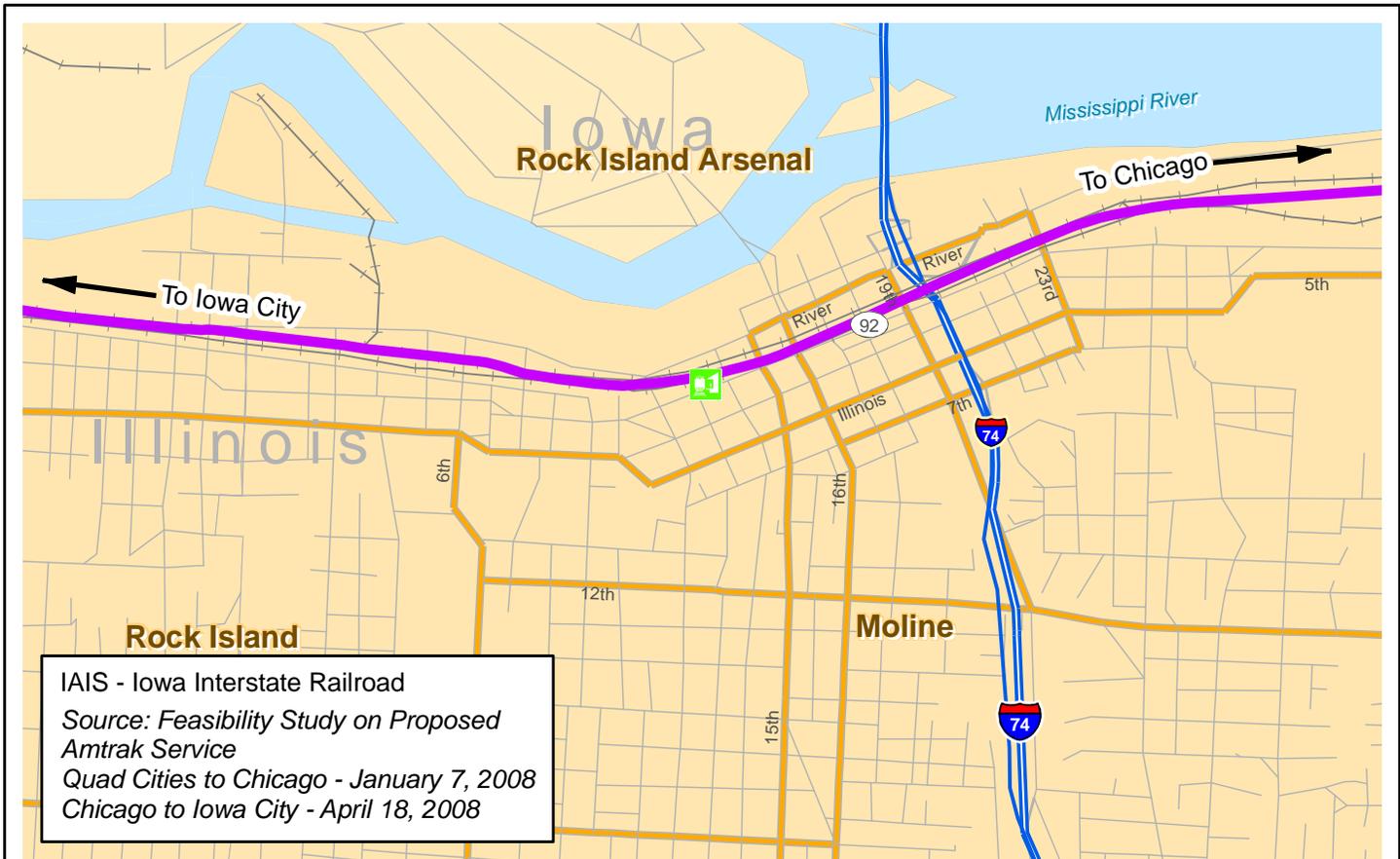
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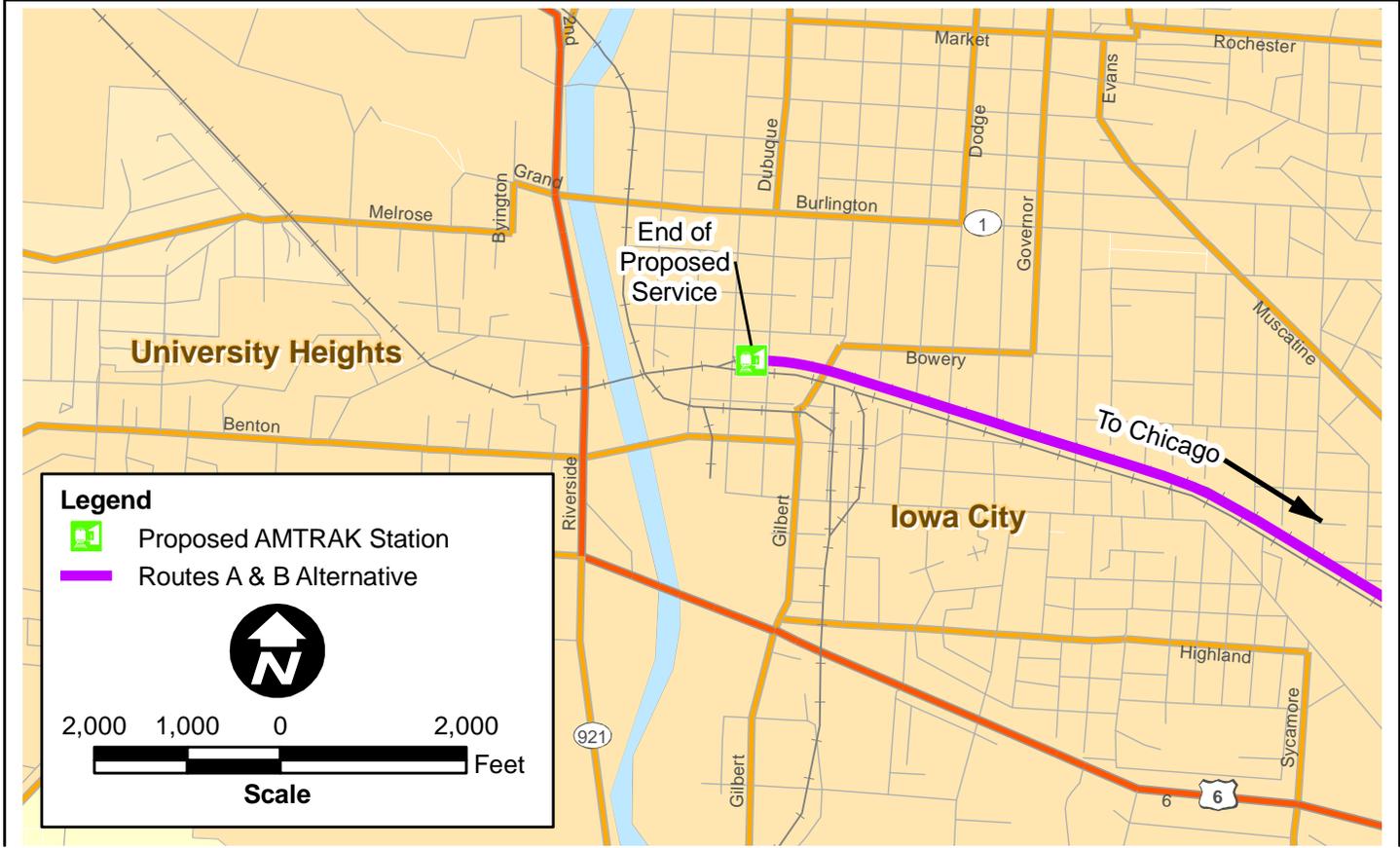
Station Locations to be Determined - Geneseo

Chicago to Iowa City Intercity Passenger Rail Service

DATE September 2009
FIGURE 2-2



IAIS - Iowa Interstate Railroad
 Source: Feasibility Study on Proposed Amtrak Service
 Quad Cities to Chicago - January 7, 2008
 Chicago to Iowa City - April 18, 2008



Legend

- Proposed AMTRAK Station
- Routes A & B Alternative

2,000 1,000 0 2,000
 Feet
 Scale

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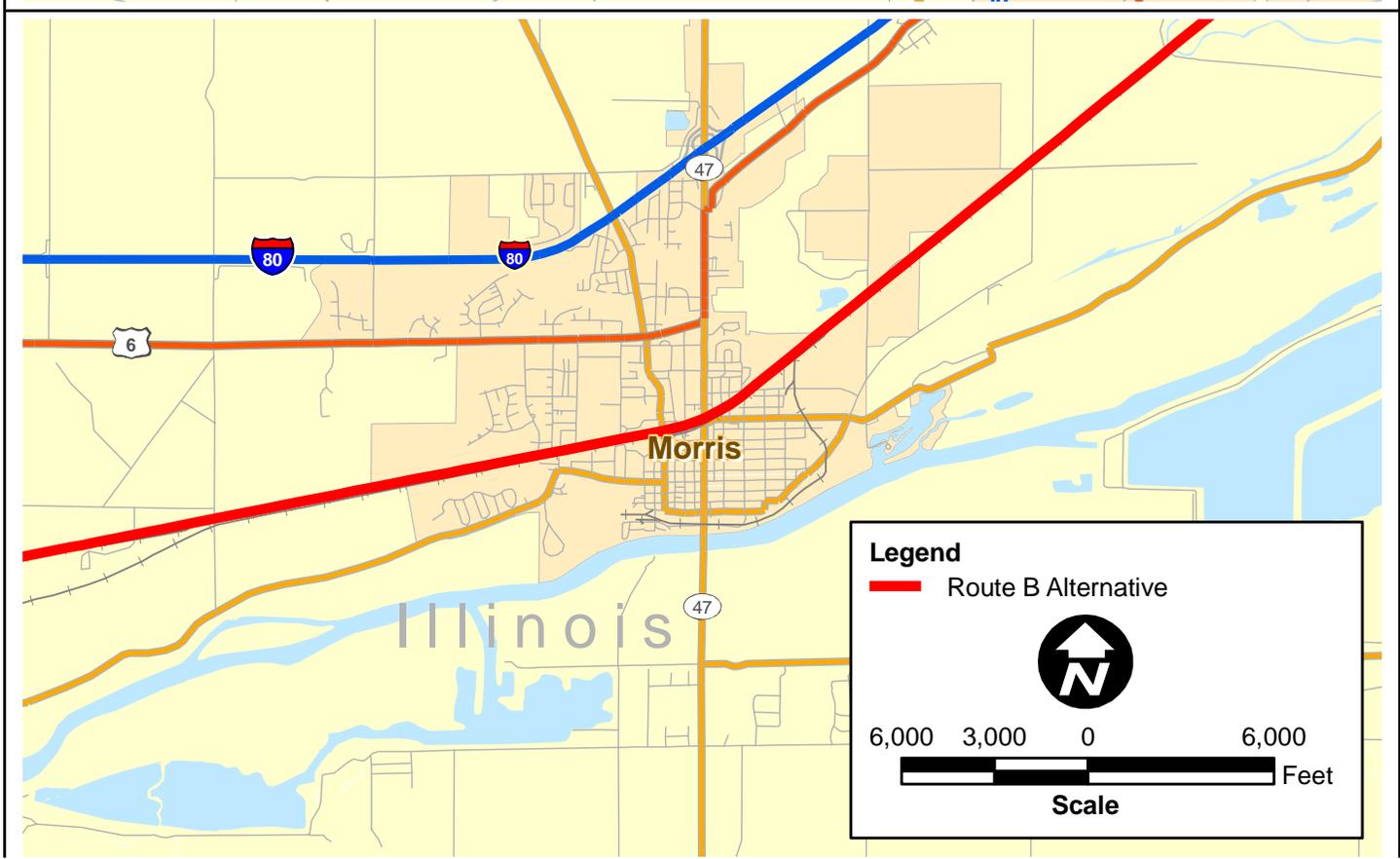
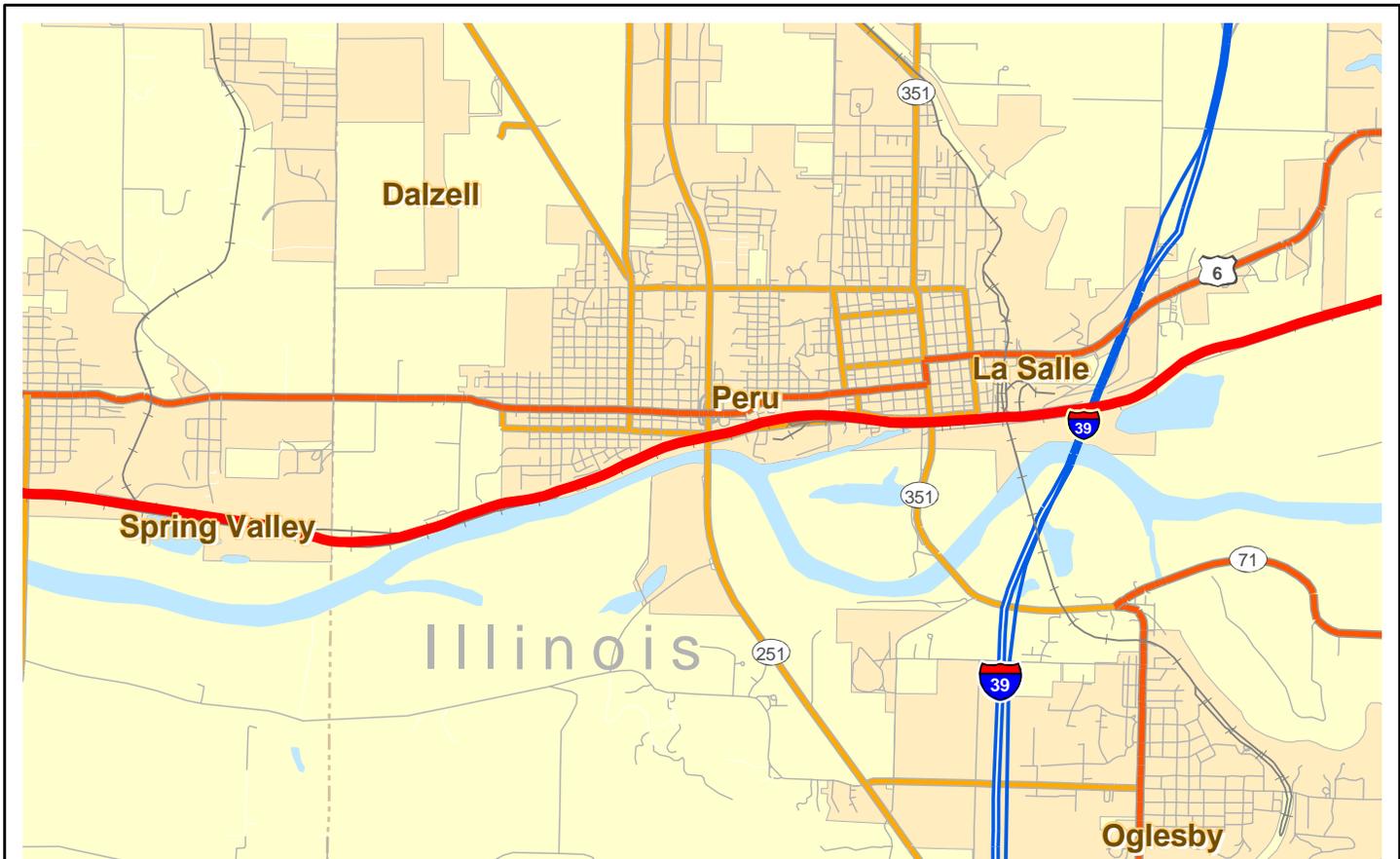


Proposed Station Locations - Moline & Iowa City

Chicago to Iowa City Intercity Passenger Rail Service

DATE	September 2009
FIGURE	2-3

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Station Locations to be Determined - Peru & Morris

Chicago to Iowa City Intercity Passenger Rail Service

DATE	September 2009
FIGURE	2-4