APPENDIX A

ALTERNATIVES ANALYSIS REPORT

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Iowa Connections

Get on Board

Final Alternatives Analysis Report

Chicago to Council Bluffs-Omaha

Regional Passenger Rail System Planning Study

October 30, 2012

Iowa Department of Transportation

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CHAPTER 1
INTRODUCTION

The Iowa Department of Transportation (Iowa DOT), in conjunction with the Federal Railroad Administration (FRA) and Illinois Department of Transportation (Illinois DOT), is evaluating alternatives for the expansion of intercity passenger rail service from Chicago, Illinois, through Iowa, to Council Bluffs, Iowa, and Omaha, Nebraska (the Project). Iowa DOT's evaluation will be documented in the Chicago to Omaha Regional Passenger Rail System Planning Study (the Study) Tier 1 Service Level Environmental Impact Statement (EIS).

This report describes the initial range of route alternatives proposed for consideration for the Study, the screening methodology and criteria used to evaluate these route alternatives, the results of the alternatives analysis, and agency and public input on the alternatives analysis. Through a two-step screening process, preliminary service planning elements were analyzed to identify the range of route alternatives that will be considered in the Tier 1 EIS, which will be prepared to comply with the National Environmental Policy Act of 1969 (NEPA). The Tier 1 EIS will evaluate potential impacts of route alternatives carried forward from the screening process for detailed analysis and comparison. In addition, a No-Build Alternative will be retained for analysis in the Tier 1 EIS to allow equal comparison to the route alternatives carried forward and to help decision makers and the public understand the consequences of taking no action. Ultimately, Iowa DOT, Illinois DOT, and FRA will select one route alternative based on the detailed evaluation in the Tier 1 EIS and input from resource agencies and the public.

This report is organized as follows:

- Chapter 1, Introduction – Defines the purpose of and need for the Study, describes the Study Area, and provides an overview of the alternatives analysis review process.
- Chapter 2, Description of the Proposed Service – Describes the proposed passenger rail service to be provided by the selected route alternative.
- Chapter 3, Identification of a Range of Route Alternatives – Describes the previously established passenger rail routes in the Study Area and the range of route alternatives to be evaluated using the screening methodology discussed in Chapter 4.
- Chapter 4, Screening Methodology – Describes the screening criteria and the screening process for both coarse- and fine-level screening.
- Chapter 5, Coarse-Level Screening – Presents the results of coarse-level screening and identifies the route alternatives carried forward for fine-level screening.
- Chapter 6, Fine-Level Screening – Presents the results of fine-level screening and identifies the route alternatives carried forward for evaluation in the Tier 1 EIS.
- Chapter 7, Reasonable and Feasible Alternatives Carried Forward – Summarizes the route alternatives carried forward from coarse- and fine-level screening for detailed evaluation in the Tier 1 EIS.

- Chapter 8, Comments and Coordination – Describes opportunities for agency and public input and summarizes input received.
- Chapter 9, References – Provides detailed information on the sources used to prepare this Final Alternatives Analysis Report.

1.1 STUDY AREA

The Chicago to Omaha corridor (the Corridor) extends from Chicago Union Station, in downtown Chicago, Illinois, on the east to a terminal in Omaha, Nebraska, on the west. The Study Area consists of the five previously established passenger rail routes between Chicago and Omaha that pass through the states of Illinois and Iowa (see Figure 1-1). The Study Area for each route is approximately 500 miles long and 500 feet wide. In Illinois, the Study Area runs generally west from Chicago Union Station, which is the hub for the Midwest Regional Rail Initiative (MWRRI) to the Mississippi River and, depending on the route, is a distance of between 150 and 250 miles. In Iowa, the Study Area runs west from the Mississippi River for approximately 300 miles across the entire state of Iowa to the Missouri River. In Nebraska, the Study Area terminates in Omaha, which is located at the Missouri River, the eastern border of the state. The general location for the terminal in Omaha will be identified as part of this Study. For each route, the counties that are traversed in Illinois, Iowa, and Nebraska are listed east to west in Table 1-1.

Table 1-1. Counties Traversed by Routes in the Study Area

State	Route 1	Route 2	Route 3	Route 4	Route 5
Illinois	Cook DuPage Kane DeKalb Boone Winnebago Stephenson Jo Daviess	Cook DuPage Kane DeKalb Ogle Lee Whiteside	Cook DuPage Kane DeKalb Ogle Carroll	Cook Will Grundy La Salle Bureau Henry Rock Island	Cook DuPage Kane Kendall DeKalb La Salle Bureau Henry Knox Warren Henderson
Iowa	Dubuque Delaware Buchanan Black Hawk Butler Franklin Hardin Hamilton Webster Calhoun Sac Crawford Harrison Pottawattamie	Clinton Cedar Linn Benton Tama Marshall Story Boone Greene Carroll Crawford Harrison Pottawattamie	Jackson Clinton Jones Linn Benton Tama Marshall Story Boone Dallas Guthrie Carroll Crawford Shelby Harrison Pottawattamie	Scott Muscatine Cedar Johnson Iowa Poweshiek Jasper Polk Dallas Madison Guthrie Adair Cass Pottawattamie	Des Moines Henry Jefferson Wapello Monroe Lucas Clarke Union Adams Montgomery Mills Pottawattamie
Nebraska	Douglas	Douglas	Douglas	Douglas	Douglas

1.2 PURPOSE OF AND NEED FOR THE STUDY

1.2.1 Study Background

The existing rail lines that are proposed to be used to provide passenger service from Chicago, Illinois, through Iowa, to Omaha, Nebraska, were all in place by 1871 (Colton, 1871) and are among the oldest rail lines in the region. The railroads were initially constructed to carry passengers and to haul a variety of freight and have evolved into very busy railroads (Hudson, 2005). Most of the passenger service along these routes began in the 1850s, 1860s, and 1870s (Young, 2005). By the 1880s, commuter rail service in Chicago had been developed in a hub-and-spoke[1] pattern, extending 30 to 40 miles in 15 different directions from downtown Chicago (Conzen, 2005). This hub-and-spoke system is still operating today as Chicago's Metra (Young, 2005). Intercity passenger rail service generally was terminated by the 1970s, when railroad passenger service declined nationally, and was consolidated into Amtrak (Hudson, 2005). In the Chicago metropolitan area, the section between Chicago and Naperville, Illinois, carries the heaviest volume of commuters (Hudson, 2005).

The MWRRI was established in 1991 as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (Public Law [PL] 102-240) and its reauthorization in 1998 with the Transportation Equity Act for the 21st Century (TEA-21) (PL 105-178). ISTEA and TEA-21 included a broader national effort to support high-speed rail investment. Nine transportation agencies across the Midwest, along with Amtrak, sponsored the MWRRI:

- Illinois Department of Transportation
- Indiana Department of Transportation
- Iowa Department of Transportation
- Michigan Department of Transportation
- Minnesota Department of Transportation
- Missouri Department of Transportation
- Nebraska Department of Roads
- Ohio Rail Development Commission
- Wisconsin Department of Transportation

As a result of the MWRRI and the national high-speed rail initiative, numerous corridors were identified and refined, with Chicago as the hub. Between 1996 and 2004, a single transportation plan was developed that included all of these corridors; this plan is known as the Midwest Regional Rail System. Meanwhile, numerous studies were completed with regard to bus service integration with the MWRRI; financial, economic, market, and transportation analysis; infrastructure and capital costs; operating costs; and institutional and organizational issues. These efforts culminated in 2004, when the MWRRI issued the *Midwest Regional Rail Initiative Project Notebook* (MWRRI, June 2004) and the *Midwest Regional Rail System: A Transportation Network for the 21st Century, Executive Report* (MWRRI, September 2004).

[1] A hub-and–spoke passenger rail system provides transportation to a central location. From this central location (the hub), one can travel to various other destinations (the spokes).

Since 2004, efforts have progressed to develop the various corridors. In 2006, the *Midwest Regional Rail Initiative Project Notebook*, Chapter 11, Benefit Cost and Economic Analysis, was updated to reflect economic conditions at that time (MWRRI, November 2006). The nine passenger rail corridors in the Midwest Regional Rail System are:

- Chicago to Detroit/Grand Rapids/Port Huron, Michigan
- Chicago to Cleveland, Ohio
- Chicago to Cincinnati, Ohio
- Chicago to Carbondale, Illinois
- Chicago to St. Louis, Missouri
- St. Louis, Missouri, to Kansas City, Missouri
- Chicago to Quincy, Illinois
- Chicago to Omaha, Nebraska
- Chicago to Milwaukee, Wisconsin, and to St. Paul, Minnesota/Green Bay, Wisconsin

In 2009 and 2010, Iowa DOT and Illinois DOT, in conjunction with FRA, evaluated alternatives for the corridor extending from Chicago Union Station to Iowa City, Iowa, with the completion of the Chicago to Iowa City Intercity Passenger Rail Service Tier 1 Service Level Environmental Assessment. On October 28, 2010, FRA awarded Iowa DOT and Illinois DOT a grant of $230 million to proceed with the Chicago to Iowa City corridor Tier 2 Project Level studies and construction activities.

In 2010 and 2011, additional studies were completed for the MWRRI prior to commencement of the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. These studies included MWRRI corridor alternatives analysis, capital cost updates, operating equipment configurations and performance standards, advanced train control, and public outreach (MWRRI, 2011). The Chicago to Omaha corridor was included in these studies.

The MWRRI includes many high-speed (that is, 110 miles per hour [mph]) passenger rail corridors, but the MWRRI initially identified the service between Chicago and Omaha for conventional-speed (that is, 79 mph) and not high-speed service. The 2010 and 2011 studies expanded the analysis to include five round-trips per day to Des Moines and four round-trips per day to Council Bluffs-Omaha (MWRRI, 2011). Subsequent to these studies, Iowa DOT and FRA concluded that analysis for speeds up to 110 mph is warranted for the Chicago to Omaha Corridor. The Project includes a maximum of seven round-trips per day at maximum authorized track speeds of up to 110 mph between Chicago and Council Bluffs-Omaha.

As stated in the *Midwest Regional Rail Initiative Project Notebook* (MWRRI, June 2004), full implementation of the MWRRI would significantly improve Midwest passenger rail service by:

- Upgrading existing rail lines to permit frequent, reliable, high-speed passenger train operations
- Accommodating operation of a hub-and-spoke passenger rail system that provides through-service and connectivity in Chicago to locations throughout the Midwest region

- Introducing modern train equipment that offers improved amenities operating at speeds of up to 110 mph
- Providing multimodal connections and feeder bus systems to improve access to the rail system
- Introducing a contracted rail operation that improves efficiency, reliability, and on-time performance

With full implementation (estimated to occur in 2025), the Midwest Regional Rail System would encompass approximately 3,000 route miles in the sponsor states and would attract approximately 13.6 million passengers annually. Approximately 90 percent of the Midwest region's population would be within an hour's ride of a Midwest Regional Rail System rail station and/or within 30 minutes of a Midwest Regional Rail System feeder bus station (MWRRI, September 2004).

On October 14, 2011, FRA agreed to a phased implementation approach for the Chicago to Iowa City corridor. Illinois DOT is proceeding with the Tier 2 studies and construction activities for the portion of the corridor extending from Chicago to Quad Cities (East Moline, Moline, and Rock Island, Illinois, and Davenport and Bettendorf, Iowa) with a terminus in Moline, Illinois. Iowa DOT would conduct Tier 2 studies for the portion of the corridor from the Quad Cities to Iowa City.

While the Chicago to Iowa City service and Chicago to Council Bluffs-Omaha service may ultimately use the same corridor from Chicago to Iowa City for implementation, the level of service under consideration is different. From Chicago to Iowa City, service was evaluated for Tier 1 at a maximum of 5 round-trip trains per day at speeds up to 79 mph, while the Chicago to Council Bluffs-Omaha service is being evaluated for a maximum of 7 round-trip trains per day at speeds up to 110 mph. The higher maximum speed and frequency of service for the Chicago to Council Bluffs-Omaha service would result in additional impacts, and, therefore, require additional study. For analysis purposes in this Tier 1 EIS, the passenger rail service from Chicago to the Quad Cities is assumed to be constructed and in operation.

1.2.2 Purpose

The Project and the Midwest Regional Rail System are intended "to meet current and future regional travel needs through significant improvements to the level and quality of passenger rail service," as defined by the MWRRI in its Midwest Regional Rail System Executive Report (MWRRI, September 2004). The Chicago to Omaha Regional Passenger Rail System would provide competitive passenger rail transportation between Chicago and Omaha to help meet future travel demands in the Study Area. The Project would create a competitive rail transportation alternative to the available automobile, bus, and air service and would meet needs for more efficient travel between major urban centers by:

- Decreasing travel times
- Increasing frequency of service
- Improving reliability
- Providing an efficient transportation option
- Providing amenities to improve passenger ride quality and comfort

- Promoting environmental benefits, including reduced air pollutant emissions, improved land use options, and fewer adverse impacts on surrounding habitat and water resources

1.2.3 Need

The need for the Project stems from the increasing travel demand resulting from population growth and changing demographics along the Corridor as well as the need for competitive and attractive modes of travel (MWRRI, June 2004).

1.2.3.1 Travel Demand

Travel demand is the total demand for travel services in the Corridor. Between 2000 and 2010, the Chicago and Omaha/Council Bluffs metropolitan statistical areas (MSAs) have seen growth of 3.3 and 20.7 percent, respectively (U.S. Census Bureau, 2010). As shown in Table 1-2, the combined population in Illinois, Iowa, and Nebraska has increased by 14.8 percent between 1970 and 2010 (U.S. Census Bureau, March 27, 1995, and 2010). Not only is population increasing in the area, but it is also becoming more urbanized, with expanded access to and demands for public transportation (Iowa DOT, December 27, 2010). For example, Iowa has historically had a mostly rural population; however, in 2003, that trend shifted, and 60 percent of the population is projected to live in urban areas by 2030 (Iowa DOT, December 27, 2010).

Table 1-2. Population Change

State	Total Population			Percent Increase Between 1970 and 2010
	1970	2000	2010	
Illinois	11,113,976	12,419,293	12,830,632	15.4
Iowa	2,824,376	2,926,324	3,046,355	7.9
Nebraska	1,483,493	1,711,263	1,826,341	23.1
Total	**15,421,845**	**17,056,880**	**17,703,328**	**14.8**

Sources: U.S. Census Bureau, March 27, 1995, "County Population Census Counts 1900-90," retrieved on December 5, 2011, http://www.census.gov/population/www/censusdata/cencounts/index.html.
U.S. Census Bureau, 2010, Census 2010, Summary File 1, Table P12: SEX BY AGE - Universe: Total population, generated by Kelly Farrell using American FactFinder, retrieved on December 19, 2011, http://factfinder2.census.gov/main.html.

The predominant mode of travel in the region is the automobile. Highway access between Chicago and Omaha is provided through Interstate 80 (I-80) and Interstate 88 (I-88), portions of which are toll road, as well as a number of federal and state highways. Table 1-3 shows the total trips estimated by mode within the Corridor for the year 2000.

Table 1-3. Total Trips by Mode for the Year 2020

Mode of Travel	Total Trips[a]	Percent of Total
Automobile	72,883,000	97.7%
Air	1,233,000	1.7%
Bus	359,000	0.4%
Passenger Rail	113,000	0.2%
Total	**74,588,000**	**100%**

Source: AECOM Ridership, Diversion, and Modal Split Forecast for Year 2020

Note:

[a] *Excludes short trips of less than 100 miles.*

The population is also aging and is increasingly seeking alternative modes of transportation. As shown in Table 1-4, between 2000 and 2010, the population of individuals who are 65 years of age and over in Illinois, Iowa, and Nebraska has increased by 7.3, 3.8, and 6.2 percent, respectively (U.S. Census Bureau, 2000 and 2010). Within the Chicago and Omaha MSAs, the growth of the population of individuals who are 65 years of age and over, a population segment who tend to rely more on public transportation, is 8.2 and 25.9 percent higher, respectively, in 2010 compared to 2000 (Iowa DOT, 2012; Iowa DOT, December 27, 2010; U.S. Census Bureau, 2000 and 2010).

Table 1-4. Population 65 Years of Age and Over

State	Total Population 65 Years of Age and Over (Percentage of Total Population)		Percent Increase Between 2000 and 2010
	2000	2010	
Illinois	1,500,025 (12.1)	1,609,213 (12.5)	7.3
Iowa	436,213 (14.9)	452,888 (14.9)	3.8
Nebraska	232,195 (13.6)	246,677 (13.5)	6.2
Total	**2,168,433 (12.7)**	**2,308,778 (13.0)**	**6.5**
Chicago MSA	998,464 (10.9)	1,079,893 (11.4)	8.2
Omaha MSA	76,345 (10.6)	96,098 (11.1)	25.9

Source: U.S. Census Bureau, 2010, Census 2010, Summary File 1, Table P12: SEX BY AGE - Universe: Total population, generated by Kelly Farrell using American FactFinder, retrieved on December 19, 2011, http://factfinder2.census.gov/main.html.

1.2.3.2 Competitive and Attractive Travel Modes

Introducing intercity passenger rail service connecting major urban centers in the Corridor, which are the proposed station stops, would provide a competitive modal option for travel in the Corridor. The travelling public selects travel modes based on a combination of trip time, cost, and convenience. As shown in Table 1-3, approximately 98 percent of travel between city pairs in the Study Area is estimated to occur by automobile, with air, bus, and passenger rail travel making up the remainder.

Intercity passenger rail service would provide an option to highway and air travel between major urban centers in the face of a growing and aging population and increasing congestion on Midwest highways and at Midwest airports. For example, highway vehicle miles traveled in Iowa have increased 37 percent since 1990, and I-80 in Chicago, Des Moines, and Omaha currently experience peak-period congestion and capacity issues. Chicago O'Hare International Airport is the second busiest airport in the nation (Iowa DOT, 2012; U.S. DOT, January 2012).

Travel modes available to the public along the Corridor include automobile, air, bus, and conventional-speed long-distance passenger rail. The primary automobile travel route is Interstate 88 (I-88) between Chicago and East Moline, approximately 160 miles, and Interstate 80 (I-80) between East Moline and Downtown Omaha, approximately 313 miles. From southern Chicago, the entire route along I-80 from Chicago to Omaha is approximately 470 miles. A one-way trip by automobile between Chicago and Omaha along either of these routes at posted interstate speeds would take about 8 hours during off-peak hours. Using the current IRS standard of $0.555 per mile, the cost of driving round-trip between Omaha and Chicago with one day of parking in either Omaha ($5) or Chicago ($35) is $547.10 and $577.10, respectively (Attachment B).

I-80 is also a major truck route in the region. Between 2010 and 2030, vehicle miles traveled in Iowa on I-80 are expected to increase by more than 65 percent. If no capacity improvements are made, nearly 75 percent of I-80 in Iowa would be bordering on unstable traffic flow, at or beyond capacity (Iowa DOT, January 24, 2012). In Chicago, Des Moines, and Omaha, I-80 currently has peak-period congestion and capacity issues due to a volume/service flow ratio[2] greater than 0.95 that results in stop-and-go traffic conditions (FHWA, November 2010). The remainder of the Corridor is not currently experiencing substantial traffic congestion. By 2040, if no capacity improvements are made, the I-80 corridor between Chicago and Omaha with the exception of rural parts of Illinois will be experiencing peak-period congestion issues due to a volume/service flow ratio greater than 0.95 with stop-and-go traffic conditions (FHWA, November 2010).

Air service is currently available between major cities in the Study Area. Commercial air service is provided in Chicago (Chicago O'Hare International Airport and Chicago Midway International Airport), Moline (Quad Cities International Airport), Des Moines (Des Moines International Airport), and Omaha (Eppley Airfield). Direct flight service between Chicago and Omaha is served by American Airlines, Southwest Airlines, United Airlines, and U.S. Airways. Typical flight times range from 1 hour and 20 minutes to 1 hour and 40 minutes. Direct flight service between Chicago and Des Moines is served by American Airlines, Southwest Airlines, United Airlines, and U.S. Airways. Typical flight times range from 1 hour and 15 minutes to 1 hour and 25 minutes. Direct flight service between Chicago and the Quad Cities is also served by American Airlines, United Airlines, and U.S. Airways. Typical flight times range from 52 minutes to 56 minutes. There is no direct service between Moline and Omaha or between Des Moines and Omaha; typical connections go through Chicago or Minneapolis. Between February 2011 and February 2012, the 17 daily flights

[2] The volume/surface flow ratio represents the relationship between actual traffic volumes and the maximum capacity of the roadway. No roadway congestion is present when the volume/surface flow ratio is 0.0. Roadways are considered congested when the volume/surface flow ratio is between 0.75 and 0.95. A roadway with a volume/surface flow ratio of 0.95 to 1.0 has traffic volumes approaching or equal to the surface flow is considered to be highly congested, and experiences stop-and-go traffic conditions.

between Chicago and Omaha were reliable an average of 79 percent of the time, with the other 21 percent of flights either delayed 15 minutes or more or cancelled (Attachment B). Tickets purchased with 2 weeks advanced notice typically cost between $210 and $1,400 (Attachment B).

Bus service is provided in a majority of mid-to-large sized cities, with intermittent service in smaller towns. Service between Chicago and Omaha, with multiple stops, was provided by Greyhound. Typical bus service includes two trips per day: one in the early morning and one in the late evening. Typical travel time by bus between Chicago and Omaha ranges from 9 hours and 15 minutes for "Express" service to 9 hours and 40 minutes for regular service (Greyhound, July 2012). On August 15, 2012, Burlington Trailways took over the Greyhound routes from Omaha (though Greyhound is still maintaining the terminals), including the route from Omaha to Chicago, which features stops in Des Moines, Iowa City, Davenport, and Moline. Bus ticket prices vary from $40 to $126 (Attachment B).

Megabus.com, a subsidiary of Coach USA, is a low-fare express bus service that recently added daily service between Chicago and Omaha with stops in Iowa City and Des Moines. Megbus.com provides two round-trips per day: one in the morning and one in the late evening. The full one-way trip from Chicago to Omaha takes 8 hours and 50 minutes. In addition to low fares, Megabus.com offers competitive amenities including Wi-Fi service, power ports at each seat, and on-board restrooms. However, Megabus.com does not always provide traditional sheltered station stops. In Chicago, the station stop is located adjacent to Union Station. In Omaha, the station stop is adjacent to the parking garage at Crossroads Mall (Megabus.com, undated).

Current passenger rail service from Chicago to Omaha is part of Amtrak's long-distance service on the California Zephyr, which does not provide travel times that are competitive with other modes in the Study Area. Travel time from Chicago to Omaha on the current Amtrak long-distance, conventional-speed, service is approximately 8 hours and 55 minutes and travel time from Omaha to Chicago is approximately 9 hours and 36 minutes (Amtrak, November 7, 2011). Long-distance trains are designed for long-distance passengers and are often inconvenient for regional travelers. Tickets purchased with 2 weeks advanced notice typically cost $69 to travel from Chicago to Omaha and $108 to travel from Omaha to Chicago (Attachment B). In addition, the arrival and departure times in Omaha are late at night or early in the morning, which is not consistent with convenient intercity travel. The only major metropolitan community in Iowa that currently has access to passenger rail is Council Bluffs via the once-a-day Amtrak *California Zephyr* (Iowa DOT, December 27, 2010).

Inclement winter weather in the Study Area often creates conditions that impact both highway and air travel, creating a need for an alternative mode that is less prone to winter service interruptions. For example, winter storms (storms lasting 4 or more hours with snowfall rates of 0.20 inch per hour or more) in Iowa reduce traffic volumes by an average of 29 percent (ranging from 16 to 47 percent) depending on total snowfall and wind speeds (Knapp, Kroeger, and Giese, February 2000).

1.3 ALTERNATIVES ANALYSIS REVIEW PROCESS

Iowa DOT, in conjunction with FRA, hosted an online, open-house meeting in early 2012 for the public to discuss the scope of the Study and the initial range of route alternatives. In addition, agency scoping meetings were held in early 2012 to obtain comments from the federal and state resource agencies on potential purpose and need elements and the initial range of route alternatives.

After the two-step screening process was completed, a second public meeting was held in May 2012 at three locations to obtain input from resource agencies and the public on preliminary results from the route alternatives screening. These meetings are described in more detail in Chapter 8.

Another opportunity for resource agencies and the public to review route alternatives and the potential impacts associated with their implementation will be during the public comment period after the Tier 1 Draft EIS is published.

N

0 12.5 25 50 Miles

Scale

Legend

- Route 1 (Canadian National Railway, former Illinois Central)
- Route 2 (Union Pacific Railroad, former Chicago & North Western)
- Route 3 (Canadian Pacific Railway and BNSF Railway, former Milwaukee Road)
- Route 3 Abandoned Portion
- Route 4 (Iowa Interstate Railroad and CSX Transportation, former Rock Island)
- Route 5 (BNSF Railway, former Chicago, Burlington & Quincy)

Iowa Department of Transportation

Iowa Connections

Get on Board

Chicago to Council Bluffs-Omaha
Previously Established Routes

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
1-1

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CHAPTER 2
DESCRIPTION OF THE PROPOSED SERVICE

Regardless of which route alternative is selected, the proposed passenger rail service between Chicago and Omaha would have several similar characteristics—speed and travel time, stations, frequency, infrastructure, and phased implementation.

2.1 SPEED AND TRAVEL TIME

The initially proposed maximum speed of the passenger rail service is between 79 and 110 miles per hour (mph). Operation of a passenger train at a maximum speed of 90 mph, with reductions in speed for curvature, bridges, urban areas, and other existing features, would result in scheduled travel times between Chicago and Omaha of approximately 7 to 8 hours. An automobile or bus requires between 8.5 and 10 hours to drive the approximately 470 miles between Chicago's downtown area and Omaha's downtown area. Air service between Chicago and Omaha is approximately 1 hour and 15 minutes flying time, and a total downtown-to-downtime travel time of approximately 4 hours, 40 minutes (see Attachment B for detail on travel times of personal auto and commercial bus and airline service). Direct air service is available only between Chicago and Omaha and Chicago and some of the intermediate cities, but not from intermediate city to intermediate city.

The passenger rail service would be designed for an on-time performance of 90 percent or better to provide a competitive option with personal automobile and commercial bus and airline service, which may have a lower reliability due to inclement weather and highway traffic congestion. The proposed Chicago terminus is Chicago Union Station, which is located in Chicago's downtown core and is the hub station for Amtrak's long-distance service and much of Chicago's commuter-rail service, within walking distance of Chicago's heavy-rail rapid-transit system, and served by Chicago's bus system. Chicago Union Station is also the proposed hub for the Midwest Regional Rail System. The rapid-transit system provides direct service to Chicago's two airports. Therefore, rail passengers would have direct access to Chicago's downtown, and convenient direct connections to Chicago's airports, shopping districts, universities, hospitals, and suburban areas. Several of the previously established rail routes pass through the downtown cores of the intermediate cities between Chicago and Omaha.

2.2 STATIONS

The stations at the endpoints of the proposed passenger rail service are Chicago and Omaha. The proposed station in Chicago is Chicago Union Station, which is the current hub for Amtrak intercity and regional trains serving Chicago, and the proposed hub for the Midwest Regional Rail System. A station location at Omaha has not yet been identified. Intermediate station stops are located on each route alternative at the largest intermediate cities, or as close as possible to the largest intermediate cities, in order to attract and serve the largest possible ridership. The intermediate station stops are different for each route alternative, as the route alternatives are geographically separated except at the endpoints of the Corridor. The number of station stops was identified with recognition that too many stops would make the overall travel time unacceptably long and less competitive with automobile travel times, thus reducing ridership. Likewise, station dwell times were kept to a minimum, to reduce overall travel times, which is common on corridor-type services where many travelers are making day-trips and most travelers tend to carry less baggage.

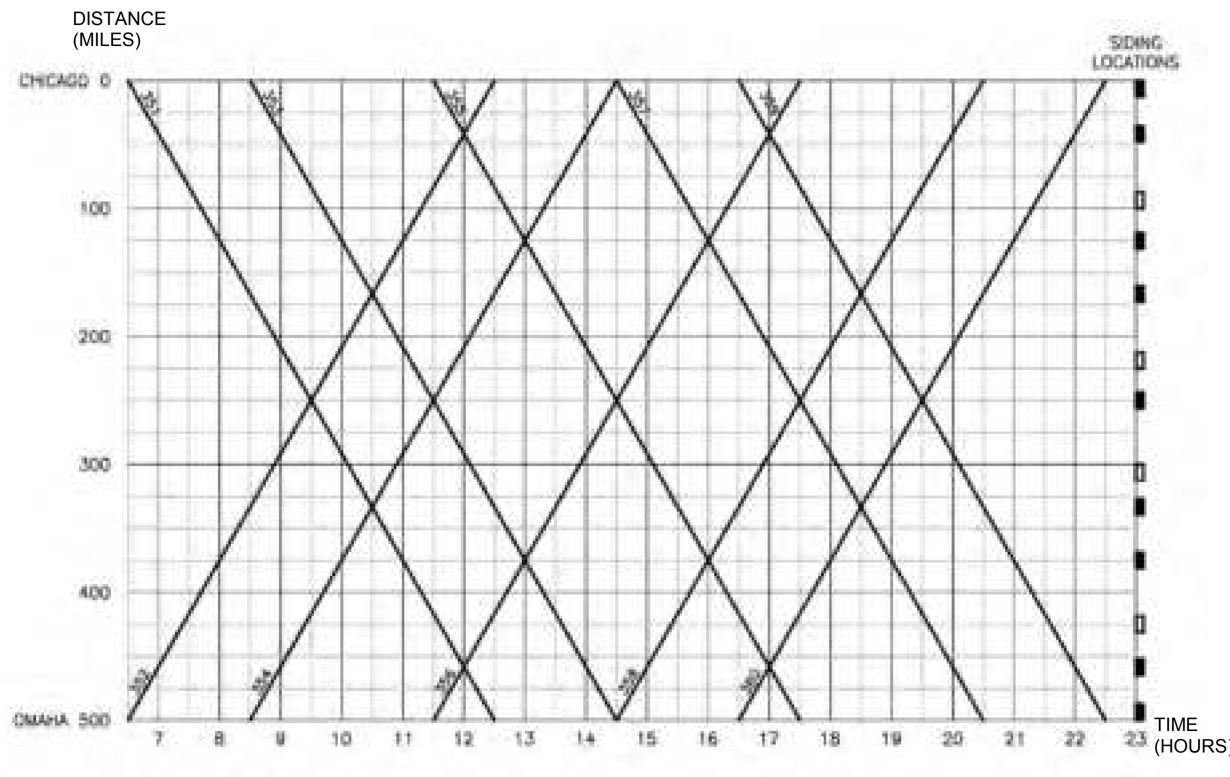
2.3 FREQUENCY

The frequency of the proposed passenger rail service has been initially defined as five daily round trips between Chicago and Omaha. Experience with other similar corridor services in Illinois, Wisconsin, Missouri, California, and Washington has shown that more round trips increase ridership because passengers have more options for departure and arrival times; the increased convenience corresponds to increased ridership (Berger, March 1, 2012). The number of daily round trips also influences the technical complexity of the infrastructure required because more trains require more line capacity. For example, Figure 2-1 illustrates the locations where the five passenger trains in each direction must meet passenger trains traveling in the opposite direction. This figure shows mileage between Chicago and Omaha on the left vertical axis, siding locations on the right vertical axis, and hours in a day on the horizontal axis. Sidings must be constructed at the locations where trains meet if sidings or a second main track are not currently at the designated meet-pass locations and are not otherwise required for the capacity and reliability of existing freight train traffic or likely future freight train traffic.

2.4 INFRASTRUCTURE

Although the proposed passenger rail service would use existing infrastructure, additional track, signal, and structure infrastructure is likely to be necessary, to varying degrees, for each route alternative to provide adequate main track capacity and track quality for passenger trains to operate reliably and consistently at a speed as near to the proposed maximum speed as possible, and to mitigate any potential loss in existing freight capacity and freight capacity expansion potential. Sidings where passenger trains moving in opposite directions can meet and pass each other are likely to be required if existing sidings or double-track is insufficient, not at the required locations for the passenger-train meet/pass events, or needed for freight trains.

A representation of the requirement for sidings is illustrated by the intersections of the lines representing a sample passenger train schedule in Figure 2-1. This figure shows the minimum locations where infrastructure would be needed for meet/pass events (where the diagonal lines intersect) for only passenger trains. The minimum distance is established by the spacing and aspect progression between railroad wayside signals, which, to help ensure safe operation of trains, controls how closely one train can follow another. The distance between signals is typically approximately 2 miles. The minimum practical distance between two unimpeded trains is typically not less than 8 miles; any closer distance, and the train behind must reduce speed according to the wayside signal aspects in the wake of the leading train. As shown in Figure 2-1, the *black* siding locations are the minimum needed for scheduled passenger train meet/pass events; the *open* siding locations are potential locations where sidings could be provided to accommodate meet/pass events for a passenger train that is running behind schedule, which would avoid additional wait times of one hour or greater for a meet/pass event for the late-running train. Maintenance facilities and station tracks at some or all stations are also likely infrastructure requirements. Additional track, signal, and structure infrastructure may expand the footprint of the existing track, signal, and structure infrastructure. Expansion of footprint was identified and informed the identification of impacts on environmental, socioeconomic, and cultural resources.



Notes: *Black siding= scheduled passenger train meet location*
Open siding= delayed passenger train meet location

Figure 2-1. Chicago to Council Bluffs-Omaha Illustrative Passenger Train Stringline

2.5 PHASED IMPLEMENTATION

The proposed passenger rail service may be implemented in phases. These phases could incrementally extend the corridor geographically westward, add frequency of service, increase train speed, or add intermediate station stops within the Chicago to Omaha Corridor. Improvements required to implement phases could include:

- Construction of track, signaling, structures and stations
- Improvements to track and signaling to enable higher train speeds
- Acquisition of additional equipment (locomotives and passenger cars)
- Implementation of amenities at stations or on-board trains.

Phased implementation of the passenger rail service would also allow Iowa DOT, Illinois DOT, and FRA to provide incremental benefits of the service by taking advantage of funding as it becomes available.

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CHAPTER 3
RANGE OF ROUTE ALTERNATIVES

The Study evaluated potential route alternatives for the Corridor based on reviews of previous studies and also the ideas or concepts that were suggested by resource agencies or the public during the scoping process.

The range of route alternatives includes the No-Build Alternative and existing or former freight-only or freight-passenger routes that may have been previously identified by the MWRRI and other studies, as opposed to entirely new construction on new ROW (that is, a greenfield route). The No-Build Alternative is included to provide a basis of comparison to the other route alternatives (40 CFR 1502.14; 64 Federal Register (FR) 28545). Although greenfield routes may offer the ability to provide much higher speeds than use of existing railroad alignments, development of greenfield routes can be much more expensive and more disruptive to the environment and to communities than adding capacity or improvements to existing rail routes. Greenfield route alternatives are thus unreasonable due to the cost of new ROW and the challenge of timely acquisition of property. Additionally, the environmental impacts of grading entirely new ROW, rather than expanding as needed along existing ROW, would cause more impact on the natural environment (and likely also on the human environment) than on-alignment route alternatives. The MWRRI previously determined that population densities in the Corridor were not sufficiently high to develop the ridership that might leverage the potentially higher cost of greenfield route alternatives.

Potential route alternatives for the Corridor were identified by the MWRRI and the *Iowa DOT 10 Year Strategic Passenger-Rail Plan* (Iowa DOT, December 27, 2010). These previously established passenger rail routes in the Corridor are described in Section 3.2. In addition, combinations of these routes were considered, as discussed in Section 3.3. These combinations or "hybrid" routes are possible where two other routes cross; at the crossing point, a connection would be established between the routes.

3.1 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.

3.2 PREVIOUSLY ESTABLISHED ROUTES

The previously established passenger rail routes in the Corridor, listed from north to south, are the Illinois Central, Chicago & North Western, Milwaukee Road, Rock Island, and Burlington (see Figure 1-1). In this Study, these five previously established passenger rail routes have been identified by a designator number, as shown in Table 3-1.

Table 3-1. Previously Established Passenger Rail Routes

Route Number	Original Operator	Current Operator and Route
1	Illinois Central	Canadian National Railway via Rockford, Illinois, and Dubuque, Waterloo, and Fort Dodge, Iowa
2	Chicago & North Western	Union Pacific Railroad via Clinton, Cedar Rapids, and Ames, Iowa
3	Milwaukee Road	Canadian Pacific Railroad from Chicago to Sabula, Iowa, and BNSF Railway from Bayard, Iowa, to Omaha, and abandoned except for several small stubs in between
4	Rock Island	CSX Transportation from Chicago to Utica, Illinois, and Iowa Interstate Railroad via Moline, Illinois, and Iowa City and Des Moines, Iowa
5	Burlington	BNSF Railway via Galesburg, Illinois, and Burlington and Ottumwa, Iowa

The previously established routes hosted intercity passenger service between Chicago and Omaha prior to the establishment of Amtrak on May 1, 1971. The Burlington route (Route Alternative 5) was the only route on which passenger service continued under Amtrak between Chicago and Omaha after April 30, 1971. The Rock Island route (Route Alternative 4) offered passenger service between Chicago and the Quad Cities as a continuation of prior service until 1978. Currently, the Burlington route (Route Alternative 5) hosts Illinois intercity passenger trains between Chicago and Galesburg, Illinois, and the Amtrak *California Zephyr* between Chicago and Emeryville, California, via Omaha.

Each of the five previously established passenger rail routes holds the potential of providing the required time-competitive, reliable service in the Corridor between Chicago and Omaha. Although a portion of the Milwaukee Road route (Route Alternative 3) between Sabula and Bayard, Iowa, has been abandoned, Route Alternative 3 was included in the Study because it bears enough similarity to the other route alternatives that surround it geographically that it could be time competitive if the missing portion were reconstructed. In addition, the populations that could possibly be served were identified as was the potential for ridership on each route.

All route alternatives are owned and operated by freight railroads, except for the abandoned portion of the Milwaukee Road route (Route Alternative 3) between Sabula and Bayard, Iowa, and portions of several route alternatives within the Chicago metropolitan area. These include: trackage at Chicago Union Station, which is owned by Amtrak; the former Milwaukee Road route between Chicago Union Station and Elgin, which is owned by the Regional Transportation Authority (Illinois) and operated by Metra (Canadian Pacific retains freight trackage rights); and the former Rock Island from La Salle Street Station to Joliet, also owned by the Regional Transportation Authority (Illinois). All of the routes host Metra commuter trains within the Chicago metropolitan area. At present, there are no other commuter operations within the Corridor. Most of the routes host trackage or haulage rights for other freight railroads on some or all portions of the route.

3.3 POTENTIAL COMBINATIONS OF ROUTES

As discussed in MWRRI studies (June 2004, September 2004, and 2011), combinations of routes are possible where the previously established passenger rail routes converge, and in some cases cross, as they approach Chicago or Omaha. There are several reasons to consider a combination of routes; chief among them are opportunities to increase ridership, decrease travel time, and decrease technical and economic challenges.

The MWRRI and the *Iowa DOT 10 Year Strategic Passenger-Rail Plan* considered a combination of the Rock Island and Burlington routes (Route Alternatives 4 and 5, respectively). In addition, this combination of routes was selected under the Chicago to Iowa City Intercity Passenger Rail Service Tier 1 Service Level Environmental Assessment (FRA, Illinois DOT, and Iowa DOT, September 2009), which evaluated the Chicago-Moline-Iowa City service by proposing to construct a connection where the two routes cross at Wyanet, Illinois. Other rail studies that include portions of this combination of Route Alternatives 4 and 5 from Chicago to Omaha are ongoing. For example, Tier 2 NEPA documents are in the preliminary stages for service from Chicago to Moline, Illinois, with funding in place and planned implementation in 2015. This service will use a combination of Route Alternatives 4 and 5.

This combination of Route Alternatives 4 and 5 is also being considered in this Study and is called Route Alternative 4-A. Route Alternative 4-A consists of Route Alternative 5 (the former Burlington, now BNSF) between Chicago Union Station and Wyanet, Illinois, where Route Alternative 5 and Route Alternative 4 cross, and Route Alternative 4 (the former Rock Island, now Iowa Interstate Railroad [IAIS]) between Wyanet and Omaha.

Conversely, other potential combinations evaluated in the MWRRI, such as a combination of the former Milwaukee Road (now Canadian Pacific Railroad [CP]) route (Route Alternative 3) and the former Illinois Central (now Canadian National Railway [CN]) route (Route Alternative 1) or a combination of Route Alternative 3 and the former Chicago & North Western (now Union Pacific Railroad [UP]) route (Route Alternative 2), would not serve to substantially reduce travel time, increase population served, or decrease technical challenges, and thus were not evaluated further. Consequently, only the combination of Route Alternatives 4 and 5 as Route Alternative 4-A was deemed worthy of additional evaluation in this alternatives analysis. Route Alternative 4-A is described in more detail in Chapter 5.

3.4 SUMMARY

The No-Build Alternative, described in Section 3.1, the five previously established passenger rail routes in the Corridor (Route Alternatives 1 through 5), described in Section 3.2, and the combination of Route 4 and Route 5 (Route Alternative 4-A), discussed in Section 3.3, compose the initial range of route alternatives proposed for consideration for the Study. These route alternatives are shown in Figure 3-1.

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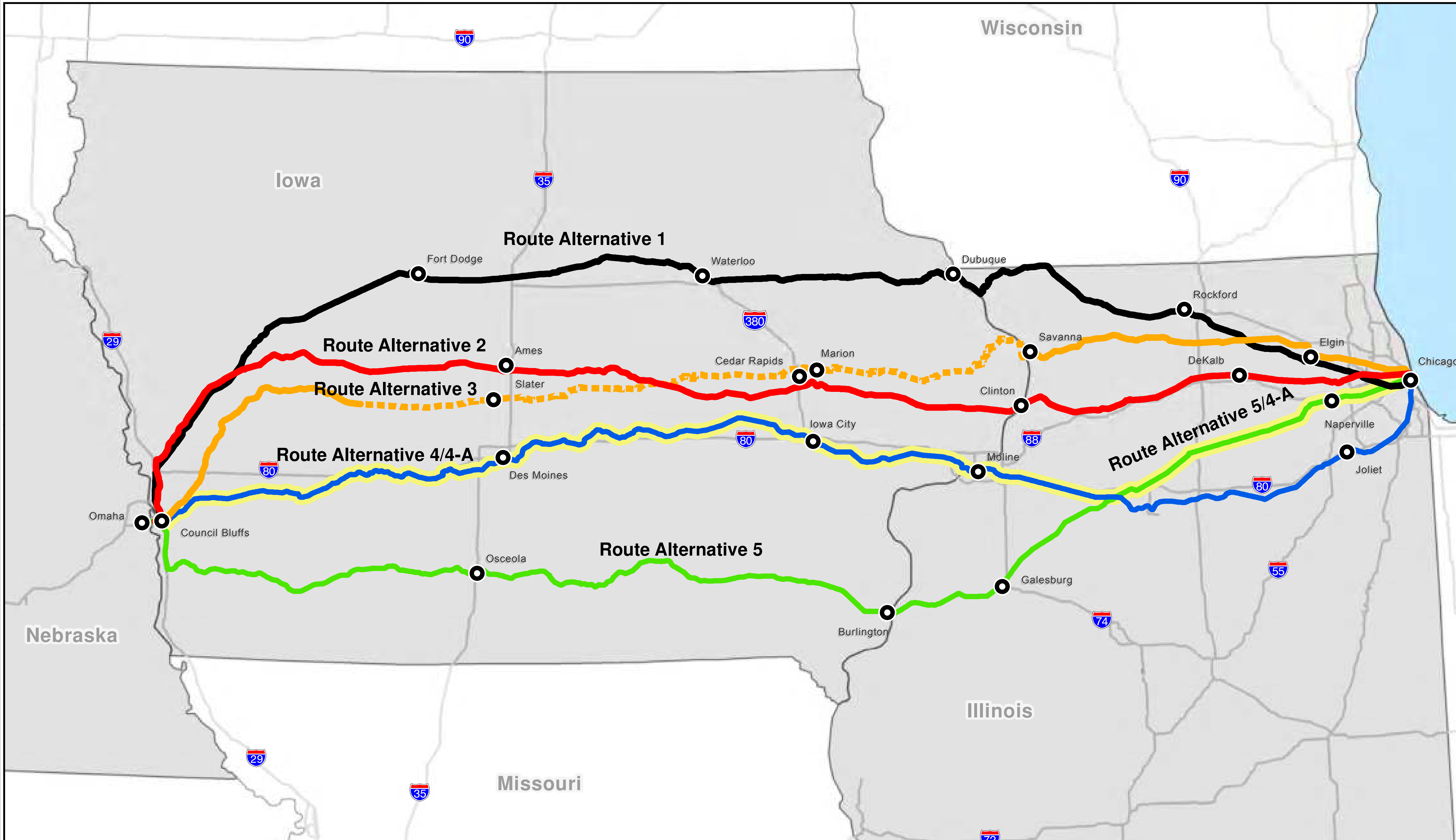

0 12.5 25 50 Miles

Scale

Legend

- Route Alternative 1
- Route Alternative 2
- Route Alternative 3
- Route Alternative 3 - *Abandoned Portion*
- Route Alternative 4
- Route Alternative 4-A *(Combination of Portions of Route Alternatives 4 and 5)*
- Route Alternative 5

Iowa Department of Transportation

Iowa Connections

Get on Board

Chicago to Council Bluffs-Omaha
Route Alternatives

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
3-1

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CHAPTER 4
SCREENING METHODOLOGY

The screening methodology described herein was provided to Iowa DOT and FRA for review and comment, revised in response to comments, and then presented during Study scoping. Comments derived from the scoping process were used to modify the screening methodology as applicable. The final methodology was implemented during the two-step screening process as described in this report.

The screening methodology comprises screening criteria and the screening process. The screening process included two steps: an initial coarse-level screening to identify whether any route alternative is hindered by major challenges (and would thus be eliminated from further evaluation) and a subsequent fine-level screening to evaluate each route alternative in greater quantitative and qualitative detail. This two-step screening process was used to screen route alternatives that do not meet the purpose of and need for the Study and/or have greater environmental, physical, or right-of-way (ROW) constraints compared to one or more other route alternatives. Alternatives that remain after the two-step screening process will be carried forward for detailed evaluation in the Tier 1 Draft EIS. This two-step screening process is intended to allow the Tier 1 EIS to focus on only those route alternatives that are reasonable and feasible. The Council on Environmental Quality (CEQ) defines reasonable alternative as “those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant” (48 FR 34263). Feasible alternatives are those that are “capable of being carried out” (Merriam-Webster, 2012).

4.1 SCREENING CRITERIA

The screening process for evaluating and eventually selecting reasonable and feasible route alternatives to carry forward for detailed consideration in the Tier 1 EIS relied on four broad screening criteria that were used for coarse- and fine-level screening. These four criteria are noted below, with Table 4-1 identifying and describing subcriteria for coarse-level screening, and Table 4-2 identifying and describing subcriteria for fine-level screening:

- Meeting the purpose and need for passenger rail service between Chicago and Omaha (this is a critical criterion under NEPA because those alternatives that don’t meet the underlying purpose and need for a project are eliminated from further consideration)
- Technical feasibility (this criterion addresses physical and operational considerations for a project)
- Economic feasibility (this criterion applies to economic considerations of anticipated revenue and costs)
- Environmental concerns (this criterion considers whether there would be substantial concerns with respect to impacts on the natural and human environment)

These screening criteria were used to compare the merits and drawbacks of each route alternative during both levels of the two-step screening process and are described below.

4.1.1 Purpose and Need

A Purpose and Need Statement for Public and Agency Scoping was prepared to describe the purpose of and need for the Study. The Purpose and Need Statement will eventually be expanded into Chapter 1 of the Tier 1 EIS, which will provide additional detail and incorporate input received from agencies and the public during the scoping process. The Study's purpose and need will be used as a benchmark for evaluating and comparing the range of route alternatives in the Tier 1 EIS. Therefore, each proposed route alternative will be evaluated based the on following factors related to the purpose and need:

- Travel demand in the Corridor (both existing and potential for the next 20 years) resulting from population growth and changing demographics
- Competitive and attractive travel modes, including competitive travel times and convenience

4.1.2 Technical Feasibility

Each proposed route alternative was evaluated to determine if it is feasible with respect to technical considerations. Screening included a high-level analysis (initial, gross assessment for establishing preliminary estimates) of physical route characteristics; infrastructure requirements to achieve the desired passenger train speed, schedule, and reliability; infrastructure required to obtain necessary capacity for existing and future freight trains and other passenger trains; and safety.

4.1.3 Economic Feasibility

Each proposed route alternative was evaluated to determine if it is feasible with respect to economic considerations, including assessment of market potential as measured by high-level ridership and revenue from tickets sold forecasts, and capital and operating cost forecasts.

4.1.4 Environmental Concerns

Each proposed route alternative was evaluated to determine whether there are substantial concerns with respect to impacts on the natural and human environment. In particular, each route alternative was compared to other route alternatives that have a similar ability to meet the Study's purpose and need. Environmental impacts that were considered to be substantial concerns included a large impact on a wildlife refuge protected by Section 4(f), relocations of homes or businesses, and the need for a large amount of ROW. Additional information on the environmental concerns analysis is provided in Sections 4.2.1 and 4.2.2.

4.2 SCREENING PROCESS

A two-step screening process—coarse-level screening and fine-level screening—was used to evaluate proposed route alternatives using the four criteria described in Section 4.1, above. The purpose of the two-step screening process was to eliminate route alternatives burdened by major challenges. The coarse-level screening was applied to the initial range of route alternatives, unreasonable alternatives were eliminated from further consideration, fine-level screening was applied to the remaining alternatives, and the one or more alternatives that passed through the fine-level screening process were carried forward for detailed evaluation under the Tier 1 NEPA process. Coarse-level screening and fine-level screening are described in Sections 4.2.1 and 4.2.2, respectively.

4.2.1 Step 1 – Coarse-Level Screening

Coarse-level screening was a high-level screening to determine which route alternatives meet the purpose and need, are technically and economically feasible, and are environmentally reasonable. Route alternatives that met all of these criteria were carried forward to fine-level screening. Route alternatives that did not meet all of these criteria were eliminated from further consideration.

The first criterion to be evaluated was purpose and need. Any route alternative that did not meet the purpose and need was eliminated from further evaluation. The route alternatives that did meet purpose and need were evaluated based on technical, economic, and environmental criteria, as presented in Table 4-1; the Purpose and Need criterion and the Environmental Concerns criterion each have subcriteria defined for evaluation.

The technical review was conducted by considering the infrastructure characteristics of each route alternative:

- Track and signal capacity to accommodate the proposed frequency and schedule of passenger trains
- Current and future freight traffic
- Current maximum speed(s)
- Capability to support the desired speeds of passenger trains
- Major structures

The economic review used uniform unit costs for new infrastructure to provide a consistent basis for screening. The environmental review was conducted using atlases and open-source aerial photography to identify key constraints along the route alternatives.

Information gained during the scoping process was used to help compare and screen route alternatives. The specific approach implemented for each criterion during coarse-level screening is described below.

A 500-foot wide buffer was applied to each of the route alternatives analyzed in the coarse-level screening. This buffer provided a conservative limit for screening the route alternatives.

Table 4-1. Coarse-Level Screening Criteria

Criteria	Factors
Purpose and Need: Travel Demand	Other than the Chicago and Omaha/Council Bluffs metropolitan areas, what is the population served by the route alternative?
Purpose and Need: Competitive and Attractive Travel Modes	Would the route alternative provide a time-competitive route compared to other route alternatives?
Technical Feasibility	Would the route alternative involve substantially more technical hurdles than other route alternatives? Factors considered include: • Major construction efforts, such as major earthwork and major new bridges • Potential for freight train traffic conflicts and scope of engineering solutions for such conflicts
Economic Feasibility	Would the route alternative have costs far in excess of its anticipated benefits? Would the route alternative be substantially more expensive than other route alternatives?
Environmental Concerns: Major Challenges	Based on qualitative analysis, does the route alternative have major environmental (natural and human environment) challenges compared to other considered route alternatives?
Environmental Concerns: Sensitive Areas	Based on qualitative analysis, would the route alternative traverse substantially more environmentally sensitive areas (such as wetlands, wildlife and waterfowl refuges, cultural resources, and park and recreation lands) than other route alternatives?
Environmental Concerns: Right-of-Way	Would the route alternative require substantially more ROW acquisition than other route alternatives?

4.2.1.1 Purpose and Need: Travel Demand

The evaluation of travel demand addressed the potential for ridership along the route alternatives. Station stops were identified at the major cities, and the population of the city at each stop served as a proxy by which to measure the potential ridership of the route alternative. By this methodology, larger population centers logically present a higher potential for ridership than would smaller towns.

Although travel demand analysis and ridership estimate calculations are complex processes, broad generalizations can be readily made based on evaluation of the population centers near each route alternative. For the coarse-level analysis, population centers within 20 miles of each route alternative were considered in the analysis. Because all of the alternatives include the Chicago and Omaha population centers, they were excluded from the analysis to more clearly portray the populations served between the termini and the differences among the route alternatives.

4.2.1.2 Purpose and Need: Competitive and Attractive Travel Modes

The evaluation of competitive and attractive travel modes addressed travel time, which refers to the duration of a trip between any two stations along a route alternative. It is a well-established planning principal that when choosing whether to travel, and by which mode, the least duration of travel time is a primary desire. This desire is reflected in ridership results of existing passenger rail service, commercial air and bus service, and personal auto usage. Ultimately, a route alternative for train travel must be time-competitive with other modes of transportation (such as automobile, bus, or air travel), or riders will divert to those modes.

Although travel time analysis is a complex process that involves computer modeling of train performance over a route alternative, broad generalizations can readily be made based on route alternative length and amount of curvature for any assumed maximum speed. For the coarse-level screening, the target maximum speed was 90 mph for each route alternative. Thus, route alternatives that are substantially longer, or have greater curvature, compared to other routes, will have a longer travel time and consequently will tend to be less appealing to riders.

4.2.1.3 Technical Feasibility

Route alternatives were screened against broad technical criteria, such as whether major construction efforts would be required to develop the required capacity, speed, and reliability for passenger trains. For example, new structures spanning navigable waterways are technical hurdles because such structures are generally large and expensive, and must overcome substantial permitting hurdles.

Another technical hurdle is the need to mitigate conflicts with existing freight train traffic where a route alternative would superimpose passenger trains on existing freight operations. Where freight train traffic is frequent, substantial and complex additional rail infrastructure is often required to allow both freight and passenger trains to operate unimpeded. The level of existing freight train use of a route alternative and, more specifically, its ability to handle additional trains, is generically known as “capacity.” Evaluation of capacity is based on knowledge of the level and characteristics of freight train traffic and constraints in each railroad’s corridor.

4.2.1.4 Economic Feasibility

This evaluation criterion is closely related to the technical criteria in that the amount and complexity of additional infrastructure required for a given alternative is closely related to the cost of that alternative. Comprehensive solutions to rail capacity issues, particularly along existing busy freight corridors, require more complex projects to allow unimpeded passenger rail service. Logically, the more complex a project is, the more expensive it is.

4.2.1.5 Environmental Concerns: Major Challenges

Major environmental challenges are characterized by major impacts that could create controversy on environmental grounds, such as a substantial impact on a wildlife refuge protected by Section 4(f) or relocations of homes or businesses.

4.2.1.6 Environmental Concerns: Sensitive Areas

A route alternative’s impacts on sensitive areas can broadly be defined as impacts on wetlands and waterways, existing recreational areas, and the existing built environment, including homes, businesses, farms, and historic properties listed on the National Register of Historic Places (NRHP).

4.2.1.7 Environmental Concerns: Right-of-Way

A route alternative's ROW impacts are defined by the potential for property acquisition along the route alternative to accommodate the proposed passenger rail service. Such impacts are often related to existing railroad capacity; where capacity is tight, additional tracks and ROW are generally required.

4.2.2 Step 2 – Fine-Level Screening

Fine-level screening was conducted to determine which remaining route alternatives would be carried forward for detailed evaluation in the Tier 1 EIS. During fine-level screening, route alternatives carried forward from the coarse-level screening were screened for their ability to offer the highest potential ridership; the least potential construction, operating, and maintenance cost; and the least potential impact on the natural and human environment.

In order to estimate potential impacts, a preliminary impact area was identified for each route alternative. Existing ROW was assumed to be 100 feet wide throughout each route alternative. A buffer ranging from 25 to 50 feet wide was then applied where necessary to accommodate additional track needs, to promote efficient track maintenance, and to mitigate any operating disruptions generated by passenger trains. Therefore, the buffer area applied is specific to each route alternative. On Route Alternatives 2 and 5, where there are already two existing tracks, the new track would need to be constructed approximately 45 to 50 feet away from the existing tracks to accommodate an access road between the tracks. On Route Alternatives 1, 4, and 4-A, where there is only one existing track, the new track would be constructed 25 feet away from the existing track. The preliminary impact area analyzed for each route alternative in the fine-level screening included the estimated 100-foot-wide ROW and the 25- to 50-foot-wide buffer area for additional track.

Fine-level screening was based on open-source aerial imagery and/or geographic information systems (GIS) data, which were used to characterize portions of each route alternative. Because several route alternatives, each with lengths on the order of 500 miles, were carried forward from coarse-level screening, field visits were not conducted during fine-level screening.

The criteria and their factors evaluated during fine-level screening are listed in Table 4-2. Purpose and Need, Technical Feasibility, and Environmental Concerns each have subcriteria defined for evaluation. The environmental criteria were selected from those resources that were readily quantifiable, and often include constraints on project development. Some of the resources selected for screening would also require permits or approvals. Consequently, although not every environmental resource included in the NEPA document was considered for initial screening of alternatives, the resources selected for screening were known to be key constraints. Further detail on the methodology for evaluating each criterion follows the table.

Table 4-2. Fine-Level Screening Criteria

Criteria	Factors
Purpose and Need: Travel Demand	Does a preliminary travel demand analysis indicate that the route alternative would attract a substantially greater or lesser number of riders compared to other route alternatives? Would the route alternative attract sufficient ridership to be an economically feasible alternative?
Purpose and Need: Competitive and Attractive Travel Modes	Based on information from coarse-level screening, determine if running times can be further refined for each route alternative. Would the route alternative provide a time-competitive route compared to other route alternatives?
Technical Feasibility: Passenger and Freight Capacity	Determine general infrastructure improvements that would be required to deliver desired passenger train speeds and schedules. Determine general infrastructure improvements required to maintain existing and future freight train services while enabling prioritized passenger-train operation.
Technical/Economic Feasibility: Alignment	Would the route alternative involve a more challenging alignment or grading problems, including flyovers, in order to meet speed and capacity requirements?
Technical/Economic Feasibility: Structures	Establish conceptual costs for structures for each route alternative for purposes of comparison.
Technical/Economic Feasibility: Grade Crossings	Determine the number of new and expanded grade crossings and grade separations for each route alternative for purposes of comparison.
Economic Feasibility:	Determine high-level project cost for route alternative comparison utilizing subcomponents that address alignment, structures, grade crossings, etc. Determine operating and maintenance costs for each route alternative as a basis for comparison.
Environmental Concerns: Environmental Impacts	Upon initial evaluation of the route alternative and quantification of conceptual environmental effects, would the route alternative have the potential to impact substantially more environmentally sensitive areas in the following categories compared with other route alternatives? • Streams • Floodplains • Wetlands • Farmland • Threatened and endangered species • Cultural resources • Potential Section 4(f)/6(f) protected properties • Environmental justice • Noise and vibration • Hazardous materials
Environmental Concerns: Right-of-Way	Determine conceptual ROW acquisition for each route alternative for purposes of comparison (refined from coarse-level screening). Would the route alternative require acquisition and demolition/disruption of substantially more structures, developments, agricultural resources, or features of the existing built environment (including homes, businesses, farms, and historic properties listed on the NRHP) than other route alternatives?

4.2.2.1 Purpose and Need

Fine-level screening of route alternatives based on purpose and need built on the evaluations conducted during coarse-level screening and determined whether the conclusions regarding which route alternatives meet purpose and need remain valid. A more detailed look at travel demand and competitive and attractive travel modes was conducted as described in Sections 4.2.2.1.1 and 4.2.2.1.2.

Each proposed route alternative was evaluated based on the following factors related to the purpose and need:

- Travel demand in the Corridor (both existing and potential for the next 20 years) resulting from population growth and changing demographics
- Competitive and attractive travel modes, including competitive travel times and convenience

4.2.2.1.1 Purpose and Need: Travel Demand

For the coarse-level screening, population centers within 20 miles of each route alternative were considered in the analysis to develop generalized estimates of potential travel demand. For the fine-level screening a rail passenger ridership and revenue from tickets sold forecast was prepared for each of the route alternatives carried forward into fine-level screening under each of the potential speed regimes studied (79, 90, and 110 mph) to analyze the extent to which a Route Alternative satisfied travel demand. This ridership and revenue from tickets sold forecast used a preliminary study timetable based on potential running times for each route alternative that were determined using a Train Performance Calculator (TPC). The key assumptions used in the TPCs and preliminary timetable are the following:

- No changes were made to existing maximum train speeds in commuter territories and major terminals.
- No changes were made to existing alignments to reduce sharpness of curvature.
- A 5-inch superelevation and 5-inch unbalance were assumed for curves and equipment, respectively.
- Trainsets consisted of two General Electric P42 type locomotives operated in push-pull mode and five conventional (Amtrak Horizon) type coaches.
- Dwell time at intermediate station stops was 2 minutes.
- Intermediate station stops were those identified in Figure 3-1.
- No recovery time was added to schedules.
- Schedules used common departure times from Chicago and Omaha of 6:30 a.m., 8:30 a.m., 11:30 a.m., 2:30 p.m., and 4:30 p.m. This resulted in the last train arriving at approximately 11:30 p.m. on the slowest route alternative at the slowest speed.

The key assumptions used in ridership and revenue from tickets sold forecasts were as follows:

- The year 2020 was used as the anticipated initial year of service.
- Amtrak's current Midwest pricing structure was used. These are not "revenue maximizing" fares but are consistent with current Amtrak pricing in Illinois and the Midwest. This results in a one-way fare from Chicago to Omaha (or vice versa) of $59.00 (see Attachment A).

These ridership and revenue from tickets sold forecasts were used to assess travel demand in the fine-level screening, building upon the population estimates used in the coarse-level screening.

4.2.2.1.2 Purpose and Need: Competitive and Attractive Travel Modes

To assess route alternatives competitiveness and attractiveness compared to other travel modes, current alternate travel modes were assessed. Alternate travel modes assessed were personal auto, commercial airline service, and commercial intercity bus service. In addition, the availability of intermodal connectivity at Chicago, Omaha, and the major intermediate cities was analyzed. Alternate travel modes were evaluated for their travel time, travel cost, trip reliability, and availability of service, for trips between Chicago and Omaha, and for intermediate cities served by the alternate travel mode. These evaluations were compared to each of the route alternatives to determine if the route alternative offered competitive and attractive travel times, costs, reliability, and availability of service. To fulfill Purpose and Need, a route alternative must be reasonably competitive with the alternative travel mode for time, cost, reliability, and availability of service. For example, a route alternative that is substantially slower than personal auto would not be reasonably competitive.

Publically available information consulted included:

- Commercial airline and bus service data, such as timetables, pricing information, and descriptions of service, extracted from airline and bus line websites
- Databases from U.S. government sources such as the Bureau of Transportation Statistics
- Travel information websites published by Iowa and Illinois DOT, and the Illinois Tollway Authority
- Travel costs for personal autos allowed by the Internal Revenue Service, plus applicable tollway charges and parking.
- Distances for highway trips using Google Maps™ mapping service.

These sources are documented in Attachment B.

A common basis was established for an assumed typical traveler to provide direct cross-mode comparisons between rail, personal auto, and commercial bus and airline services. The common basis is that the typical traveler is:

- One person per party
- Traveling for business reasons
- Trip is round-trip between the downtown districts of Omaha and Chicago
- Home terminal is Omaha

- No opportunity for adjusting travel dates (relative to a trip for entertainment or personal reasons) to optimize travel cost, modal congestion peaks, or inclement weather
- Little advance notice to optimize travel cost
- Time used for trip has an opportunity cost (work or other use of time could occur)
- Trip reliability (on-time performance, low risk of cancellation for any external cause) has high value
- Trip is intended to be overnight, business conducted in Chicago either afternoon of first day, or morning of second day
- Trip commences no earlier than 5:30 a.m., trip ends no later than 1:00 a.m. the following day (assuming not more than 1 hour travel time from home or place of business to location of air, bus, or rail service, and not more than 1 hour travel time from location of air, bus or rail service, to destination in Chicago)

4.2.2.2 Technical Feasibility

Technical feasibility was assessed for each route alternative in the coarse-level screening, including a broad outline of the scope of infrastructure required for each route alternative to deliver the proposed passenger-train travel time, frequency, and reliability, and accommodate existing and likely future freight train traffic. The fine-level screening built upon that foundation to develop quantities of infrastructure required for each route alternative. These quantities in turn were used to develop cost estimates in the economic feasibility evaluation.

Railroad operating parameters that influence train speed have an effect on overall travel time and therefore on travel demand. Railroad operating parameters also influence railroad line capacity and the severity of scheduling conflicts between freight and passenger trains, particularly with respect to overall line capacity. In turn, these operating considerations influence the necessary infrastructure associated with each route alternative.

4.2.2.2.1 Technical Feasibility: Passenger and Freight Capacity

The technical feasibility evaluation first developed a conceptual understanding of the capacity requirements of a rail line that would carry five passenger trains operating at 79 mph (or faster) in each direction daily, and freight trains moving at slower speeds. This conceptual understanding was then applied to each route alternative. The most important capacity consideration was determined to be the requirement for sufficient capacity to enable overtakes of freight trains by passenger trains, because freight traffic on all of the route alternatives does not operate on a fixed schedule. Thus a passenger train schedule cannot be designed to operate in gaps between freight trains, because these gaps are not predictable.

Similar to traffic on a highway, where an emergency vehicle (such as a fire truck or ambulance) needs slower vehicles to move out of the way, railroad traffic requires slower trains to move out of the way of faster trains. To enable freight trains to continue without delay or impedance, overtakes are typically accomplished with side tracks that freight trains move into as a passenger train approaches from behind, or by segregating passenger and freight trains into different main tracks on which each move at their desired rate without interference with each other. It is also possible to perform overtake events by using the opposing main track of a two-main track railroad, such as one automobile passes another on a two-lane highway. Similar to a highway, this method is only feasible if the other main track has long gaps between trains moving in the opposite direction. Trains, unlike vehicles moving or passing each other on a highway, require much longer distances for an overtake due to the length of trains, a train's lack of capability for rapid acceleration/deceleration and requirements for safe train spacing that are enforced by wayside signal systems.

An idealized example of the least-possible distance required for a passenger train nominally operating at 80 mph to overtake a freight train operating at 50 mph, without either being impeded by the other, is illustrated in Figure 4-1. The minimum distance is established by the spacing and aspect progression between railroad wayside signals, which, to help ensure safe operation of trains, controls how closely one train can follow another. The distance between signals is typically approximately 2 miles. The minimum practical distance between two unimpeded trains is typically not less than 8 miles; any closer distance, and the train behind must reduce speed according to the wayside signal aspects in the wake of the leading train. Figure 4-1 shows a scenario where all elements of the interaction between two trains, the signal system, and the dispatching office occur in a sequence that delivers the least possible length of required side track for an overtake event. This scenario also assumes there are no vertical or horizontal imperfections (grades and curves) in the track that serve to slow either train from its maximum authorized speed. Note that if the opposing main track is used for an overtake event, the minimum length of opposing main track required is identical to the minimum length of siding. During the time the freight train being overtaken is occupying the opposing main track, no trains can operate in the opposite direction to the freight train.

This evaluation of minimum infrastructure requirements to deliver unimpeded passenger and freight train capacity was compared to the infrastructure and freight train traffic of each route alternative carried forward from coarse-level screening. Track infrastructure was added to each alternative so that the route alternative had sufficient track capacity to operate passenger trains at the desired maximum speed (79, 90, or 110 mph), without impedance by freight trains or from each other, and that existing and likely future freight trains also had sufficient capacity to operate without additional impedance from each other or from passenger trains. This additional capacity included both capacity for through trains (trains that progress from one major terminal to another without intermediate switching of cars within the train or service to lineside industries), and local trains (trains that serve local industries, or perform intermediate switching of cars within the train en route). This additional capacity took the form of: second or third main track to segregate passenger and freight trains; sidings to enable through freight trains to move out of the path of passenger trains; and side tracks designed to enable local freight trains to switch or serve local industries without impeding passenger trains.

4.2.2.2.2 Technical/Economic Feasibility: Alignment

Each route alternative was evaluated for its potential passenger-train running time, using a software tool called a Train Performance Calculation (TPC), and improvements to the existing alignment necessary to deliver the running time were conceptually determined. The TPC uses the known performance characteristics of a locomotive or locomotives specified by the user for a given train consist (the passenger cars) for the vertical and horizontal alignment of a given rail line that is input into the tool. The TPC assumes that the passenger train is run without impedance from other trains on the given rail line, and simulates the operation of the train on the line to derive the best-possible running time between end points and between station stops.

- Conceptual TPC runs were developed for each route alternative as follows:
    - TPC runs were set for the highest possible speed commensurate with prior studies conducted by the MWRRI and with the likely infrastructure costs and ridership demand. TPC runs were conducted at 79, 90, and 110 mph for each route alternative.
    - TPC runs assumed station stops at major urban areas, designated in the initial identification of station stops.
    - Train consists used in TPC runs chose motive-power and trainsets commensurate with the speed regime used in MWRRI studies and with the Passenger Rail Investment and Improvement Act (PRIIA) Section 305 committee specifications for next-generation locomotives and trainsets. Because next-generation locomotives and trainset specifications are under development, the TPC used the weight and horsepower of existing locomotives and the weight of existing passenger cars. If next-generation equipment is able to substantially decrease weight of equipment, or increase horsepower of locomotives, train performance would improve.
    - Existing curve speeds, zone speeds, and existing railroad Employee Timetable instructions (where available) were used for each route alternative to determine maximum initial train speeds.
- TPC runs were used to develop conceptual meet and pass locations and conceptual schedules. Schedules assumed that passenger trains are unimpeded by freight trains, other passenger trains, or themselves.
- The passenger-train schedule and speed were used to identify high-level, conceptual infrastructure capacity requirements for each route alternative for meet-pass events. These infrastructure requirements included:
    - The number and general location of track capacity and features to enable unimpeded passenger train runs and reliable service, such as sidings for passenger/passenger meet-pass events.
    - Track capacity to avoid degradation of existing freight capacity, service, and reliability, and estimated growth in freight train traffic for 20 years.

After operating requirements were established, the minimum track infrastructure required was conceptually determined and quantified for each route alternative. Parameters included:

- Conceptual identification of improved track structure and geometry necessary to deliver higher passenger train speeds, including identification of methods to reduce the impact on travel time of speed-restrictive curves, such as increasing superelevation of curves.
- Improved track structure and track capacity necessary to deliver reliable passenger train service (for example, reductions in slow-order frequency and duration), to enable maintenance activities to be conducted without impedance to passenger and freight trains, and to reduce ongoing maintenance costs.

- Additional infrastructure necessary to support passenger trains, such as station tracks, servicing facilities, high-speed sidings, signaling, and additional main track.
- Additional infrastructure necessary to mitigate effects on existing and forecasted freight service and industrial development.
- Infrastructure necessary to deliver passengers to trains and receive passengers from trains, including stations, intermodal connections, and parking requirements.

The two endpoint terminals of the Corridor were evaluated separately from the route alternatives between the terminals for their effects on travel time. The Chicago terminal area was considered to be the total distance between each route alternative's Chicago downtown station, and the present-day commuter-rail stop furthest from downtown on that route alternative. Travel time in the Chicago terminal area was calculated using the maximum speeds for that trackage. The Omaha terminal area was considered to be the total distance from the common point in Council Bluffs, where all five route alternatives converge to a common point, to the Omaha terminal. Travel time in the Omaha terminal area was calculated using a maximum speed of 40 mph due to the short distance between Council Bluffs and Omaha and the likelihood that the route would incorporate turnouts, curvature, and safety considerations that would preclude higher speeds.

Because the five route alternatives converge to a common point in Council Bluffs and would continue on a common route to Omaha, all route alternatives would have this same element, and it was not considered a differentiator for comparing route alternatives.

4.2.2.2.3 Technical/Economic Feasibility: Structures

Structures consist of bridges required to support the alignment across waterways, major geographic features, or to separate railroad routes that cross each other. Each route alternative was evaluated for the requirement for bridges. This included assessment of: whether existing bridges had sufficient train capacity to enable the desired speed, frequency, and reliability of passenger trains, without impedance to existing or likely future freight trains; whether existing bridges were likely to be in a suitable state of repair for the proposed passenger service or would require extensive rehabilitation or replacement; and whether the addition of the passenger train service would create a need for grade-separation of crossing rail routes. This assessment resulted in a quantification of structures required for each route alternative.

4.2.2.2.4 Technical/Economic Feasibility: Grade Crossings

Grade-crossings consist of road/rail at-grade crossings. Each route alternative was evaluated for its grade-crossing characteristics, including whether each grade-crossing was equipped with a grade-crossing signal system, the crossing type (public or private), the number of roadway lanes, and the number of tracks through the crossing both at present and after the installation of any required additional capacity necessary to deliver the required passenger and freight train capacity, speed, and reliability. Grade-crossing improvements were identified and quantified, including improvements or additions to grade-crossing surfaces, installation or improvement of signal systems, and whether grade-separation structures or crossing closures were potentially warranted. Grade-crossing signal systems are required in accordance with FRA and state regulations. These requirements vary by the proposed maximum speed of passenger trains.

4.2.2.3 Economic Feasibility

Economic feasibility was determined for each route alternative in order to establish a cost basis for comparison. This cost evaluation consisted of capital costs for infrastructure and equipment, and assessment of differences between potential operating and maintenance costs for each route alternative.

Generalized capital costs for construction or improvement of track, signaling and communications systems, bridges and drainage structures, and roadway crossings or grade separations were quantified for each route alternative in order to provide a quick and consistent basis for evaluating the technical challenges and conceptual costs of each route alternative.

Several broad categories of terrain (for example, single-track shallow cuts and fills, double-track deep cuts and fills, single-track major structure, or double-track urban grade crossing) were defined, with accompanying generalizations about construction cost in each category. This became the basis for conceptual cost estimates for each route alternative carried forward for fine-level screening. This was a valuable step because it is assumed that civil construction will represent both a major component of the cost and a major contributor to environmental impacts. Quantities were tabulated in spreadsheets; however, due to the extensive length of the route alternatives to be evaluated, plan sheets were not produced. Equipment costs were assessed by considering whether a route alternative might require more trainsets to compensate for reduced trips per day per trainset or to reduce trainset service and maintenance time. Generalized annual operating costs were assessed for each route alternative, with a particular view toward whether a route had longer travel times or alignment features that increased labor costs and fuel costs. For comparison purposes, capital and operating costs for the route alternatives assumed maximum train speeds of 90 mph.

Infrastructure requirements in the Chicago and Omaha terminals were evaluated at only a high level due to the complexity of rail traffic in these areas and the potential for cumulative effects of other major passenger and freight initiatives in these areas.

High-level equipment costs were assessed for the Corridor as a whole. If a particular route alternative was seen to require additional equipment, such as additional locomotives to overcome grades, additional trainsets to account for slower schedules and fewer equipment turns, or additional trainsets to account for greater capacity demand, these were used to adjust equipment costs for the route alternative in question.

High-level operating costs were assessed based on equipment turns, schedules, and other unique characteristics of each route alternative. Known host railroad or operator requirements that may affect operating costs for a particular route alternative were included, such as additional crew districts or additional personnel requirements.

High-level maintenance costs for infrastructure and equipment were assessed based on the requirements of each route alternative. Infrastructure that cannot be shared with freight railroads was assessed at a stand-alone cost, whereas infrastructure that can be shared with freight railroads was assessed using existing Amtrak cost-reimbursement schedules.

Equipment costs were assessed on a stand-alone basis to avoid assumptions of economies with other route alternatives that may not prove viable.

The application of those technical criteria related specifically to rail operations will be addressed in greater detail subsequently in the Service Development Plan.

Many of the costs are directly related to the length of a given route alternative, and the density of freight traffic. Specifically, the track, earthwork, and railroad signal costs are directly related to the length of each route alternative. The requirement for additional main track is directly related to the density of freight train traffic— more freight train traffic tends to create a requirement for more main tracks. Fuel, labor, and equipment costs are influenced by length of route alternative. However, none of the route alternatives have substantial geographic features, such as mountainous terrain, that would increase operating or maintenance costs to any substantial degree. Thus, shorter route alternatives tend to have lower costs than longer route alternatives, and route alternatives with lower freight train traffic density tend to have lower costs than route alternatives with high freight train traffic density.

4.2.2.4 Environmental Concerns

Fine-level screening for environmental concerns was based on a more detailed comparison of the route alternatives carried forward from coarse-level screening to determine whether some could result in potential environmental impacts substantially greater than other route alternatives. Data on the environmental resources were compiled through publicly available datasets and information made available from resource agencies through the scoping process. A 100-foot-wide ROW with buffers (as described in Section 4.2.2) for anticipated ROW acquisition, was reviewed via GIS to determine whether sensitive resources, as noted in Table 4-2, are present.

The ROW and buffers for each route alternative were developed through Council Bluffs into Omaha. As noted in Section 4.2.2.2.2, there is potential for a second bridge over the Missouri River near Blair, Nebraska. However, this would be the same for all route alternatives, and consequently was not evaluated for environmental concerns.

4.2.2.4.1 Environmental Concerns: Environmental Impacts

Route alternatives were evaluated using GIS data, stream, floodplain, wetland, critical habitat, cultural resource, and Section 4(f)/6(f) data within existing ROW and a ROW-acquisition buffer estimated to account for potential improvements; the discussion of ROW, below, describes the methodology for estimating this area. Because potentially farmable land within existing ROW is dedicated to railroad use, only suitable land within the buffer area was evaluated as potential farmland.

National hydrography data from the U.S. Geological Survey were used to characterize streams. Floodplain data was obtained from the Federal Emergency Management Agency for the Mississippi and Missouri rivers. Rural acreages (area outside of city boundaries as defined by the U.S. Census Bureau) minus wetland acres were used to roughly estimate the acres of farmland within the ROW acquisition buffer. Wetland boundaries were obtained from the National Wetland Inventory database. Critical habitat areas for federally listed threatened and endangered species were obtained from U.S. Fish and Wildlife Service data.

Sites listed on the NRHP were obtained from National Park Service data. Parks, recreation areas, wildlife refuges, and wildlife management and production areas were located using data from agency websites and publicly available mapping software. For the purpose of the fine-level screening, it was assumed that all of these parks, recreation areas, wildlife refuges, and wildlife management and production areas, as well as historic sites, are protected under Section 4(f). During fine-level screening, parks, recreation areas, and wildlife refuges were also identified as potential Section 6(f) resources. At this point in the screening process, a detailed evaluation to determine specific Section 4(f) properties along each route alternative is not warranted.

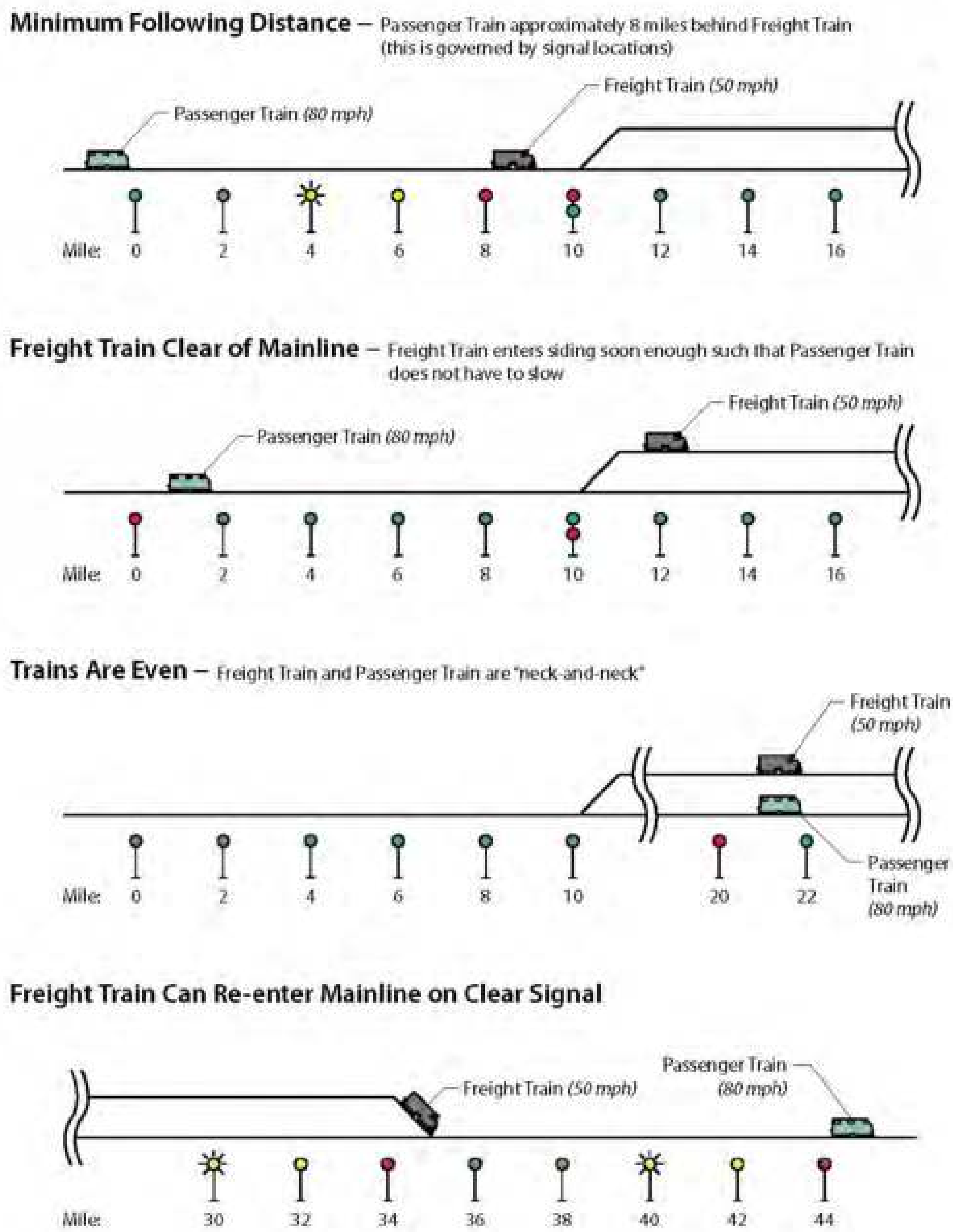
U.S. Environmental Protection Agency (EPA) data obtained from the Envirofacts website were used to determine the number of Superfund sites listed on the National Priority List (NPL) that are located 1 mile or less from each of the proposed route alternatives. One large Superfund site located approximately 1.2 miles from Route Alternative 4 was included due to the size and scale of the site.

Potential noise and environmental justice impacts were qualitatively evaluated by comparing the area of moderately to densely developed residential areas located in close proximity (approximately 500 feet) to each of the route alternatives. Publicly available satellite and aerial imagery from 2011 were used for this comparison. It was assumed that the area affected by increased noise and vibration levels would increase with increasing train speed and numbers of trains operating on a route alternative. Moderately to densely populated residential areas would have more noise and vibration receptors than lightly populated rural areas. It is assumed that environmental justice impacts would be greater in urban areas because urban areas have higher population density, typically have more racial and ethnic diversity, and have a broader range of income levels.

4.2.2.4.2 Environmental Concerns: Right-of-Way

The amount of ROW that would need to be acquired was estimated for each route alternative. While the ROW widths can vary considerably, it is reasonable to assume an average of a 100-foot-wide existing ROW corridor for the length of each route alternative. Engineering input on specific route alternatives was then used to determine a buffer of additional ROW needed around one or both sides of the corridor.

Although ROW would be needed for station locations, the areas for the stations are unknown and thus the ROW acreage was not included for this analysis. The specific approach for each ROW corridor is discussed for each of the route alternatives analyzed. The amount of urban versus rural area (in acres) was also compared for each ROW corridor. City boundaries from U.S. Census data were used to distinguish urban areas from rural. Acquisition of urban ROW is typically more expensive and potentially results in impacts related to relocation of homes, businesses, and utilities; potential issues with hazardous waste; and potential indirect impacts, such as the relocations or upgrades of roads and crossings.



Iowa Department of Transportation

Iowa Connections

Get on Board

Distance Required for One Train Overtaking Another Train

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE

October 2012

FIGURE

4-1

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CHAPTER 5
COARSE-LEVEL SCREENING

Each route alternative and the No-Build Alternative were evaluated against the coarse-level screening criteria defined in Section 4.2.1, and the results of this evaluation are presented below. A summary of the screening results is provided in Table 5-1, located at the end of this chapter. The coarse-level screening effort addressed the route alternatives from west of Chicago to Council Bluffs. The respective approaches into Chicago were addressed during fine-level screening. In addition, because all route alternatives converge to a common point at Council Bluffs, the final section of the Corridor between Council Bluffs and Omaha was not included as a basis for comparison.

5.1 ROUTE ALTERNATIVE 1

Route Alternative 1 is the northernmost of the route alternatives and is owned by CN. This route alternative is 516 miles long between Chicago Union Station and Council Bluffs.

5.1.1 Purpose and Need: Travel Demand

Route Alternative 1 would serve the intermediate major communities of Elgin and Rockford, Illinois, and Dubuque, Waterloo, and Fort Dodge, Iowa. The total population within 20 miles of these intermediate stops is approximately 774,000. As described in Section 4.2.1.1, this excludes the population of Elgin because it is considered to be in the Chicago metropolitan area, and the population of the Chicago and Omaha/Council Bluffs metropolitan areas was excluded from the analysis. Figure 5-1, located at the end of this chapter, shows the population at potential stations for Route Alternative 1.

5.1.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 1 is longer than Route Alternatives 2, 3, 4, 5, and 4-A and thus would have a longer travel time between Chicago and Omaha based on length alone. Route Alternative 1 has moderate to severe curvature that may degrade travel time as passenger train speeds increase.

5.1.3 Technical Feasibility

Route Alternative 1 is a light-density freight train route outside of the Chicago core, except where it is joint with BNSF’s high-density main line between Chicago and the Twin Cities along the east bank of the Mississippi River near East Dubuque, Illinois. Beyond the Chicago core, and not including the joint BNSF trackage, freight train traffic averages less than 10 trains per day and is dominated by manifest freight supporting the agricultural, manufacturing, and construction industries of Illinois, Iowa, and Nebraska. Track structure and main track capacity is commensurate with the freight train density and type. Most of Route Alternative 1 is not equipped with wayside signals. This route alternative generally follows its original alignment as constructed and was not historically upgraded for higher speeds or traffic density.

5.1.4 Economic Feasibility

Route Alternative 1 is currently suitable for only low speeds. Even where there is adequate capacity, substantial upgrades to the existing infrastructure, including track and signaling systems, would be required to reach 90 mph. In the area between Portage and Dubuque, particularly in the area of shared track with BNSF, expensive capacity improvements would be required, including substantial fill along the Mississippi River. The addition of fill would lead to substantial environmental impacts, including floodplain and wetland impacts, and would occur within a Wildlife and Fish Refuge, as noted in Section 5.1.6.

5.1.5 Environmental Concerns: Major Challenges

There appear to be no major environmental challenges (such as extensive ROW requirements or the need for additional major structures) for Route Alternative 1.

5.1.6 Environmental Concerns: Sensitive Areas

There are many environmentally sensitive areas in the vicinity of Portage, Illinois, and Dubuque and Wood, Iowa. Most are wetlands and rivers.

Route Alternative 1 passes through six forest preserves (FP) and is adjacent to two FPs in Illinois, passes through the Upper Mississippi River National Wildlife and Fish Refuge, and is adjacent to a state preserve and a wildlife management area (WMA) in Iowa. This route alternative passes through one city park and is adjacent to eleven city parks in the Chicago area and three city parks in Iowa. In addition, Route Alternative 1 passes through four large areas of numerous wetlands in Illinois, including a 17-mile stretch through a river valley with numerous wetlands and sharp curves and a 12-mile stretch along the Mississippi River with numerous wetlands on both sides of the existing rail line. These would likely preclude straightening of curves or easy addition of capacity, particularly along the Mississippi River. This route alternative also passes through five large areas of wetlands in Iowa. Route Alternative 1 passes through or adjacent to large industrial areas in the Chicago area, adjacent to a petrochemical refinery with several large aboveground storage tanks (ASTs) adjacent to the Mississippi River, and adjacent to two industrial areas in Iowa. Finally, Route Alternative 1 is adjacent to a historic area in Dubuque, Iowa.

5.1.7 Environmental Concerns: Right-of-Way

Additional ROW would likely be required where Route Alternative 1 shares track with BNSF along the Mississippi River. The existing ROW is relatively narrow between Dubuque and Council Bluffs, and though the line has comparatively infrequent freight service, several long passing tracks (and additional ROW) would be required, much of it in farmland.

5.2 ROUTE ALTERNATIVE 2

Route Alternative 2 is south of Route Alternative 1. Route Alternative 2 is owned by Union Pacific Railroad (UP). This route alternative is 479 miles long between Chicago Union Station and Council Bluffs.

5.2.1 Purpose and Need: Travel Demand

Route Alternative 2 would serve the intermediate major communities of DeKalb, Illinois; and Clinton, Cedar Rapids, and Ames, Iowa. The total population within 20 miles of these intermediate stops is approximately 523,940. As described in Section 4.2.1.1, this excludes the population of DeKalb because it is considered to be in the Chicago metropolitan area, and the population of the Chicago and Omaha/Council Bluffs metropolitan areas was excluded from the analysis. Figure 5-2, located at the end of this chapter, shows the population at potential stations for Route Alternative 2.

5.2.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 2 is similar in length to Route Alternatives 3, 4, 5, and 4-A and thus would have a similar travel time between Chicago and Omaha based on length alone. Route Alternative 2 has moderate curvature that may degrade travel time as passenger train speeds increase.

5.2.3 Technical Feasibility

Route Alternative 2 is a high-density freight train route from end to end. It hosts high-density Metra commuter train traffic between Chicago and Elburn, Illinois. There are substantial railroad capacity constraints over the entire route alternative, including congestion at the Mississippi River and Missouri River bridges. Current train traffic averages 50 to 80 freight trains per day, and 56 weekday commuter trains between Chicago and station stops as far west as Elburn. Freight trains operate at average maximum speeds of approximately 60 mph, but trains with low horsepower per ton ratios decline to substantially slower speeds on ascending grades. Track structure and wayside signaling are commensurate with the capacity and speed of this route alternative. Route Alternative 2 is equipped with wayside signaling throughout. Freight train traffic in the Chicago area is carefully coordinated with Metra commuter traffic. Freight trains are effectively restricted from entering Chicago during the morning and evening commuter rush hours. As a result, freight trains stage on main tracks west of Chicago for movement during off-peak hours.

To accommodate passenger trains without degrading freight train capacity, substantial infrastructure may be required to enable overtakes of freight trains and meet/pass events for the Chicago-Omaha passenger trains, to intermesh with Metra commuter traffic, and to provide adequate windows for track maintenance. Capacity for overtake events may require an additional main track. Obstacles to constructing an additional main track include lack of unused, existing ROW, which based on ground features (for example, fence lines, buildings, and field boundaries) is wide enough for the existing two main tracks but would, in most places, not accommodate a third main track without ROW acquisition along nearly all of this route alternative. Large bridges across the Mississippi, Des Moines, and Missouri rivers are double-track. Additional main track capacity may require replacement or additional bridges. The Mississippi River bridge is particularly problematic as it is a movable bridge that opens an average of eight times daily for river traffic, creating substantial rail congestion due to heavy freight train traffic on this route alternative.

5.2.4 Economic Feasibility

Because of the high infrastructure requirements, upgrading Route Alternative 2 for 90 mph passenger trains would be extremely expensive. In addition, adding main track capacity for the major river crossings would be particularly expensive.

5.2.5 Environmental Concerns: Major Challenges

The existing level of train traffic (see Section 5.2.6) along Route Alternative 2 dictates that substantial additional capacity would be required to provide reliable passenger train service. This may require substantial additional track construction in the most congested areas, including a new bridge across the Mississippi River. The accompanying construction efforts are likely to have major environmental impacts at multiple locations along this route alternative because substantial property acquisition would be required.

5.2.6 Environmental Concerns: Sensitive Areas

Track in the area around Sterling, Illinois, is on a causeway or along the bank of the Rock River. Adding a track here would require substantial fill in the river.

The area around Cedar Rapids, Iowa, is constrained, and an additional track would require property acquisitions in this urban area as well as impacts on public parks along the Cedar River.

Route Alternative 2 passes through one FP and is adjacent to seven FPs (two of these FPs are adjacent to each other on the opposite sides of the track) in Illinois. This route alternative is adjacent to a state park and a natural area in Illinois as well as two WMAs and a natural area in Iowa. This route alternative also passes through the Upper Mississippi River National Wildlife and Fish Refuge in Illinois, and a WMA in Iowa. In addition, Route Alternative 1 passes through a city park and is adjacent to ten city parks in Illinois and passes through a city park and is adjacent to one city park in Iowa. This route alternative passes through five areas of wetlands in Iowa. Finally, Route Alternative 2 passes adjacent to heavy industrial areas in the Chicago area, in northwest Illinois, and in Iowa.

5.2.7 Environmental Concerns: Right-of-Way

Additional ROW would likely be required over most of Route Alternative 2. In addition to being very expensive, this would require displacement of many landowners, particularly where the route alternative passes through towns, and would affect many agricultural resources.

5.3 ROUTE ALTERNATIVE 3

Route Alternative 3 was severed in the 1980s, when the Chicago, Milwaukee, St. Paul, and Pacific Railroad completed its final bankruptcy. Today, CP operates the east end of the railroad between Chicago and Green Island, Iowa (Regional Transportation owns the route from Chicago to Elgin, and CP from Elgin to Green Island), while BNSF owns and operates the extreme west end of the route from Bayard, Iowa, to Council Bluffs. Between Green Island and Bayard, the railroad has been abandoned, and the ROW in most areas has been converted to farmland, or to urban uses where it passes through towns. This route alternative is 490 miles long between Chicago Union Station and Council Bluffs.

5.3.1 Purpose and Need: Travel Demand

Route Alternative 3 would serve the intermediate major communities of Savanna, Illinois, and Cedar Rapids and Slater (near Des Moines), Iowa. The total population within 20 miles of these intermediate stops is approximately 674,000. As described in Section 4.2.1.1, the population of the Chicago and Omaha/Council Bluffs metropolitan areas was excluded from the analysis. Figure 5-3, located at the end of this chapter, shows the population at potential stations for Route Alternative 3.

5.3.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 3 is similar in length to Route Alternatives 2, 4, 5, and 4-A and thus would have a similar travel time between Chicago and Omaha based on length alone. Route Alternative 4-A has moderate curvature that may degrade travel time as passenger train speeds increase. If constructed as an exclusive passenger-train railroad in the abandoned portion in Iowa, Route Alternative 4-A may have opportunities for improved travel times.

5.3.3 Technical Feasibility

Between Chicago and Savanna, Illinois/Green Island, Iowa, CP averages approximately 8 freight trains per day. Metra operates 58 commuter trains and station stops as far west as Big Timber Road near Elgin, Illinois. BNSF operates approximately 2 freight trains per day between Bayard, Iowa, and Council Bluffs. Freight trains operate at average maximum speeds of 40 mph on the CP portion and 20 mph on the BNSF portion. Wayside signaling is present on the CP portion but discontinued on the BNSF portion. The alignment was extensively upgraded by the Milwaukee Road in the 1900 to 1930 time period to enable high speeds and capacity (much of the line was double-track), but the track structure is now commensurate with the low speeds and density of the remaining route.

5.3.4 Economic Feasibility

Because so much of the railroad must be constructed essentially from scratch, costs would be extremely high. Not only would track construction be required, but also approximately 225 miles of ROW acquisition costs would be required. Because this portion of the corridor would likely be dedicated to passenger trains, the entire maintenance burden for that section of the corridor would be borne by the passenger trains.

5.3.5 Environmental Concerns: Major Challenges

Track has been removed from an abandoned section of Route Alternative 3 from Green Island to Bayard, Iowa (approximately 225 miles in total length), which presents a major environmental obstacle and is considered a major challenge. Buildings and streets have been developed over portions of the former ROW in 16 communities; consequently, extensive relocations affecting community cohesiveness would be required. Former bridges across the Iowa River, Cedar River, and Des Moines River have been removed. Numerous crossings across highways and local roads would need to be reconstructed and signalized. An early railroad bridge over the Des Moines River (replaced by a high bridge in 1973) has been rebuilt as a recreational trail crossing; this bridge would need to be reacquired and rebuilt, or a bridge on a new alignment would need to be built. Most of the former track between Green Island and Spragueville, Iowa, a distance of approximately 10 miles, was constructed through marshy areas; reconstruction of track through this area would affect wetlands, streams, and riverine habitat. Two sections of the former rail line have been converted into recreational trails. Extensive areas of the former railroad grade are being farmed. Reconstruction of the abandoned rail line would have significant effects on communities, infrastructure, wetlands, waters of the U.S., and wildlife habitat. The hurdle presented by the need for approximately 225 miles of new corridor, including requisite new utility relocations, grade separations, and property acquisitions is so high as to be effectively insurmountable.

5.3.6 Environmental Concerns: Sensitive Areas

Route Alternative 3 passes through one FP and is adjacent to three FPs and one state fish and wildlife area in Illinois, passes through the Upper Mississippi River National Wildlife and Fish Refuge, and passes through one WMA in Iowa. This route alternative passes through one city park and is adjacent to four city parks in the Chicago area. In addition, this route alternative passes through an area of wetlands in Iowa (the abandoned segment passes through several extensive areas of wetlands). Finally, Route Alternative 3 passes through heavy industrial areas in the Chicago area and an industrial area in Iowa.

Among the environmentally sensitive areas is the portion of Route Alternative 3 from Savanna, Illinois across the Mississippi River to Sabula, Iowa, which is on a combination of causeway, structure, and the bank of the Mississippi River and has an alignment suitable for only low speeds. Improvements in the alignment would require substantial fill in the Mississippi River or in adjacent wetlands.

Other sensitive areas have not yet been defined. By definition, constructing a greenfield railroad presents a major environmental challenge.

5.3.7 Environmental Concerns: Right-of-Way

Approximately 225 miles of ROW would be required along the abandoned portion of Route Alternative 3. This ROW would have to be acquired as a contiguous strip at least 50 feet wide and in a fashion that meets the requirements of railroad geometry. Much of the former ROW has been redeveloped into commercial and industrial businesses. ROW acquisition would present significant impacts to adjacent property owners.

5.4 ROUTE ALTERNATIVE 4

Route Alternative 4 is currently owned by three railroads. The Regional Transportation Authority (Illinois), operated by Metra, owns the route from La Salle Street Station (the line’s terminus) to Joliet, Illinois. CSX Transportation owns the route from Joliet to Bureau, Illinois, but leases Utica to Bureau, Illinois to Iowa Interstate Railroad (IAIS). IAIS owns the route from Bureau, Illinois, to Council Bluffs. IAIS has trackage rights over CSX and Metra to Blue Island, Illinois. Originally, the entirety of this route was owned by the Chicago, Rock Island, and Pacific Railroad (the Rock Island). Upon the Rock Island’s bankruptcy in 1980, the route was sold, in pieces, to Metra and predecessor companies of CSX and IAIS. This route alternative is 490 miles long between Chicago Union Station and Council Bluffs.

5.4.1 Purpose and Need: Travel Demand

Route Alternative 4 would serve the intermediate major communities of Joliet and Moline (one of the Quad Cities), Illinois; and Iowa City and Des Moines, Iowa. The total population within 20 miles of these intermediate stops is approximately 1,034,000. As described in Section 4.2.1.1, this excludes the population of Joliet because it is considered to be in the Chicago metropolitan area, and the population of the Chicago and Omaha/Council Bluffs metropolitan areas was excluded from the analysis. Figure 5-4, located at the end of this chapter, shows the population at potential stations for Route Alternative 4.

5.4.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 4 is similar in length to Route Alternatives 2, 3, 5, and 4-A and thus would have a similar travel time between Chicago and Omaha based on length alone. Route Alternative 4-A has moderate curvature that may degrade travel time as passenger train speeds increase.

5.4.3 Technical Feasibility

Route Alternative 4 is a high-density commuter route in Chicago, a moderate-density freight route east of Homestead Junction, Iowa (approximately 20 miles west of Iowa City), and a low-density freight route between Homestead Junction and Council Bluffs. Current train traffic averages 10 to 14 trains per day between Chicago and Bureau, Illinois; 8 to 12 trains per day between Bureau and Des Moines; and 4 to 8 trains per day between Des Moines and Council Bluffs. Metra operates 46 weekday commuter trains between Chicago and station stops as far west as Joliet, Illinois. Freight train traffic is coordinated with the Chicago Metra commuter operations to operate off-peak and stages on main tracks to await off-peak time slots.

Route Alternative 4 was extensively reconstructed in some portions to improve capacity and speed from Chicago westward after 1900, but the modernization project was not completed by the Rock Island and ceased in the early 1950s. Double-track ended at West Liberty, Iowa, 222 miles west of Chicago. A major line relocation in the 1950s reduced curvature and gradient on 50 miles of track between Atlantic, Iowa, and Council Bluffs. The rail line was equipped with wayside signaling, but outside of the Chicago commuter territory, wayside signaling has been discontinued. Track structure and track speeds are commensurate with the moderate- to low-density freight train traffic; most of this route alternative is operated at a maximum speed of 40 mph.

To accommodate passenger trains at 90 mph, additional trackage may have to be constructed to enable passenger trains to meet and overtake freight trains and each other. Only one of the two original tracks remains from Joliet to West Liberty, but in most areas, the grade for the second track is still in existence. This would help to reduce the footprint associated with construction of a new second track. In addition, some of the existing track is “offset” in the ROW, meaning that one side of the ROW has more room than the other for a second track, which would help to minimize ROW acquisition requirements. The original second track was likely on 12.5 foot track centers, meaning that any new construction would still require widening of the existing embankment in order to meet modern standards.

The bridge over the Mississippi River is currently a double-track swing-span-type movable bridge structure, though only one track is used at any one time. While upgrades would be required, this structure has capacity for additional traffic, and a new bridge over the Mississippi River would likely be unnecessary. While the bridge opens an average of eight times daily for river traffic, the freight train volume over the bridge is not so high that this creates serious railroad congestion (as would be experienced at the similar bridges for Route Alternatives 2 and 5) to inhibit reliable schedules for passenger trains.

Route Alternative 4 cuts through the center of Des Moines and crosses UP's "Spine Line" between Minneapolis, Minnesota, and Kansas City, Missouri, at grade, as well as UP's yard leads and industrial switching leads for Des Moines. Some track reconfiguration and/or a grade separation may be required in this area to provide a reliable passenger operation and to avoid loss of freight capacity.

West of Des Moines, Route Alternative 4 was historically single track. While for planning purposes it may be necessary to assume that a second track would be necessary for the entire route alternative, it is possible that capacity for passenger trains could be established with several sections of second main track and sidings, rather than adding a second main track for the entire distance. West of Des Moines, ROW may need to be acquired to accommodate a second main track or sidings.

Route Alternative 4 is the only route alternative that does not directly enter Chicago Union Station. Construction of a connection between Route Alternative 4 and routes entering Chicago Union Station are possible, but would require acquisition of urban ROW, which potentially is disruptive and costly. Alternatively, Route Alternative 4 would not serve Chicago Union Station, and ridership and passenger convenience could be negatively affected through loss of connectivity with other high-speed passenger rail routes in the MWRRI system.

5.4.4 Economic Feasibility

Because eastern portions of Route Alternative 4 historically had a second main track, costs for re-establishing that second track would be reduced. Notably, the existing bridge over the Mississippi River still has two tracks, greatly reducing costs compared to other route alternatives (permitting and constructing a new bridge over the Mississippi River would likely cost in excess of $200 million).

5.4.5 Environmental Concerns: Major Challenges

Route Alternative 4 appears to have no major environmental challenges. Portions of this route alternative were studied in 2009 and 2010 as part of the Chicago to Iowa City high speed rail project. Though the Chicago to Iowa City project contemplated two round trips rather than five, and 79 mph maximum speeds (with commensurately lower infrastructure requirements), the study indicated that environmental impacts would be minimal.

5.4.6 Environmental Concerns: Sensitive Areas

Route Alternative 4 passes through one FP and is adjacent to four FPs, passes through a state park, and is adjacent to five city parks in Illinois. This route alternative passes through two adjacent city parks and is adjacent to five city parks in Iowa. In addition, this route alternative passes through heavy industrial areas in the Chicago area, two in north central and western Illinois, and one in Iowa. Finally, Route Alternative 4 passes through an area between quarries and the Illinois River in Illinois.

Among the environmentally sensitive areas is the portion of the route alternative extending from Ottawa to Bureau, Illinois, which is located on structures along the bank of the Illinois River and is surrounded by wetlands and crosses the historic Hennepin Canal.

Other possible locations for wetland impacts are in the Des Moines area and just west of Des Moines near Van Meter, Iowa.

5.4.7 Environmental Concerns: Right-of-Way

The embankment east of West Liberty, Iowa, was, at one time, widened to support two main tracks, albeit on track centers of approximately 14 feet, which would likely reduce the amount of ROW acquisition required.

Additional ROW may be required, particularly west of West Liberty. However, if the rail line were located in a manner that would allow for a future second track by offsetting the track constructed to one side of the ROW, property acquisitions would also be minimized. Additional research would be required to confirm this.

5.5 ROUTE ALTERNATIVE 5

Route Alternative 5 is now owned entirely by BNSF. It is the southernmost of the route alternatives under consideration, extending from Chicago southward to Galesburg, Illinois, then west to Pacific Junction, Iowa, and then due north to Council Bluffs. This route alternative is 496 miles long between Chicago Union Station and Council Bluffs. The route is used by Amtrak's *California Zephyr* between Chicago and Pacific Junction, Iowa, and then a BNSF line on the west bank of the Missouri River near Plattsmouth, Nebraska, to access Omaha, bypassing Council Bluffs.

5.5.1 Purpose and Need: Travel Demand

Route Alternative 5 would serve the intermediate major communities of Naperville and Galesburg, Illinois, and Burlington and Osceola, Iowa. The total population within 20 miles of these intermediate stops is approximately 167,000. As described in Section 4.2.1.1, this excludes the population of Naperville because it is considered to be in the Chicago metropolitan area, and the population of the Chicago and Omaha/Council Bluffs metropolitan areas was excluded from the analysis. Figure 5-5, located at the end of this chapter, shows the population at potential stations for Route Alternative 5.

5.5.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 5 is similar in length to Route Alternatives 2, 3, 4, and 4-A and thus would have a similar travel time between Chicago and Omaha based on length alone. Route Alternative 5 has moderate curvature that may degrade travel time as passenger train speeds increase.

5.5.3 Technical Feasibility

Route Alternative 5 is a high-density freight train route from Chicago to Pacific Junction, Iowa, and is a low-density freight train route on the east bank of the Missouri River north to Council Bluffs. Route Alternative 5 hosts high-density Metra commuter train traffic between Chicago and Aurora, Illinois, as well as four Amtrak long-distance and four Amtrak regional trains daily between Chicago and Galesburg, Illinois. There are substantial railroad capacity constraints over this entire route alternative, including congestion at the Missouri River and Mississippi River bridges. Metra is now studying adding service from Aurora to Oswego, Illinois, with the exact number of trains unknown at this time. Current train traffic averages 40 to 50 freight trains per day, and 64 weekday commuter trains between Chicago and station stops as far west as Aurora. Freight trains operate at average maximum speeds of approximately 60 mph, but trains with low horsepower/ton ratios decline to substantially slower speeds on ascending grades. Track structure and wayside signaling are commensurate with the capacity and speed of the route alternative. This route alternative is equipped with wayside signaling throughout. Freight train traffic in the Chicago area is carefully coordinated with Metra commuter traffic. Freight trains are effectively restricted from entering Chicago during the morning and evening commuter rush hours. As a result, freight trains stage on main tracks west of Chicago for movement during off-peak hours.

To accommodate passenger trains without degrading freight train capacity, substantial infrastructure may be required to enable overtakes of freight trains and meet/pass events for the Chicago-Omaha passenger trains, to intermesh with Metra commuter traffic, and to provide adequate windows for track maintenance. Capacity for overtake events may require an additional main track. Obstacles to constructing an additional main track include lack of unused, existing ROW, which based on ground features (for example, fence lines, buildings, and field boundaries) is wide enough for the existing two main tracks, but would, in most places, not accommodate a third main track without ROW acquisition along nearly all of the route alternative. Large bridges across the Mississippi and Missouri rivers are double-track. Additional main track capacity may require replacement or additional bridges. The Mississippi River bridge is particularly problematic as it is a movable bridge that opens an average of eight times daily for river traffic, creating substantial rail congestion due to heavy freight train traffic on this route alternative.

5.5.4 Economic Feasibility

Because Route Alternative 5 is at capacity, substantial additional capacity construction would be required. This would require adding an additional main track for much of the distance across Illinois and Iowa.

5.5.5 Environmental Concerns: Major Challenges

Route Alternative 5 appears to have few major environmental challenges. Additional capacity would be required across the Mississippi River at Burlington, Iowa, which would require a major permitting effort.

5.5.6 Environmental Concerns: Sensitive Areas

Route Alternative 5 passes through two FPs and is adjacent to two FPs in Illinois, passes through one state forest and WMA in Iowa, and is adjacent to two county parks and a wildlife area in Iowa. This route alternative passes through two city parks and is adjacent to 15 city parks in Illinois. In addition to the areas near the Mississippi and Missouri rivers, this route alternative passes through an area of wetlands in Illinois and two areas of wetlands in Iowa. Finally, Route Alternative 5 passes through heavy industrial areas in the Chicago area, is adjacent to the Iowa Army Ammunition Plant near Burlington, Iowa, and adjacent to an industrial area in Council Bluffs.

The major environmental hurdles are at the Mississippi River bridge and near Ottumwa, Iowa, where Route Alternative 5 is bounded by wetlands and recreational areas.

5.5.7 Environmental Concerns: Right-of-Way

The existing ROW is 100 feet wide in most areas (wide enough for two tracks, but not wide enough for three tracks) but widens to 120 or 150 feet in many areas. However, these areas of wide ROW tend to be short sections, linked by stretches of 100-foot-wide ROW.

5.6 ROUTE ALTERNATIVE 4-A

Route Alternative 4-A is composed of Route Alternative 5 between Chicago and Wyanet, Illinois, and Route Alternative 4 between Wyanet and Council Bluffs. This route alternative is 474 miles long between Chicago Union Station and Council Bluffs.

5.6.1 Purpose and Need: Travel Demand

Route Alternative 4-A would serve the intermediate major communities of Naperville and Moline, Illinois (one of the Quad Cities), and Iowa City and Des Moines, Iowa, which are the same communities served by Route Alternative 4 with the exception of Naperville, which is served by Route Alternative 5. The total population within 20 miles of these intermediate stops is approximately 1,034,000, the same population as Route Alternative 4. As described in Section 4.2.1.1, this excludes the population of Naperville because it is considered to be in the Chicago metropolitan area, and the population of the Chicago and Omaha/Council Bluffs metropolitan areas was excluded from the analysis. Figure 5-6, located at the end of this chapter, shows the population at potential stations for Route Alternative 4-A.

5.6.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 4-A is similar in length to Route Alternatives 2, 3, 4, and 5 and thus would have a similar travel time between Chicago and Omaha based on length alone. Route Alternative 4-A has moderate curvature that may degrade travel time as passenger train speeds increase.

5.6.3 Technical Feasibility

Route Alternative 4-A employs Route Alternative 5 between Chicago and Wyanet, Illinois, and Route Alternative 4 between Wyanet and Council Bluffs; therefore, the technical hurdles are those also found on the respective portions of Route Alternatives 5 and 4 (see Section 5.5.6 and 5.4.6, respectively). The only unique new route component would be found at Wyanet, where a connection would be required between the BNSF and IAIS rail lines in one of the quadrants formed by the intersection of the two railroads. A high-speed connection capable of operation at 60 mph or greater may necessitate some wetland or historic resource impacts. This connection point is rural and abuts agricultural lands.

The key difference between Route Alternative 4-A and Route Alternatives 4 and 5 individually are:

1. Shorter distance than Route Alternatives 4 and 5
2. Direct entrance to Chicago Union Station (not obtained in Route Alternative 4)
3. Potentially less infrastructure requirements between Chicago and Wyanet, Illinois
4. New route component near Wyanet, Illinois to connect BNSF and IAIS
5. Higher population served than Route Alternative 5

5.6.4 Economic Feasibility

The comparatively short connection between the BNSF and IAIS rail lines would pose no unusual cost challenge. The infrastructure differences between Route Alternatives 4 and 5 between Chicago and Wyanet, Illinois, are complex and are not considered in this coarse-level screening.

5.6.5 Environmental Concerns: Major Challenges

Route Alternative 4-A appears to have no major environmental challenges. The eastern portion of this route alternative was studied in 2009 and 2010 as part of the Chicago to Iowa City high speed rail project. Though the Chicago to Iowa City project contemplated two round trips rather than five, and 79 mph maximum speeds (with commensurately lower infrastructure requirements), the study indicated that environmental impacts would be minimal.

5.6.6 Environmental Concerns: Sensitive Areas

Route Alternative 4-A passes through two FPs and is adjacent to two FPs in Illinois. This route alternative passes through two city parks, and is adjacent to 15 city parks in Illinois, and passes through two adjacent city parks and is adjacent to five city parks in Iowa. In addition, this route alternative passes through heavy industrial areas in the Chicago area, two in northern Illinois, and one in Iowa.

5.6.7 Environmental Concerns: Right-of-Way

The ROW for Route Alternative 4-A is constrained in the Chicago area and presents challenges to expanding capacity. West of Aurora, Illinois, however, there may be adequate space to add an additional track with limited land acquisition.

The ROW for Route Alternative 4-A east of Iowa City was at one time wide enough for two tracks, which should reduce the amount of ROW acquisition required.

West of Iowa City, additional ROW may be required. However, if the rail line were located in a manner that would allow for a future second track (by offsetting the track constructed to one side of the ROW), property acquisitions would also be minimized. Additional research would be required to confirm this.

5.7 NO-BUILD ALTERNATIVE

The No-Build Alternative would result in the continued extensive use of automobiles, as well as airplane and bus transportation, along the Corridor. Additionally, Amtrak's *California Zephyr* would continue along the Corridor, and other passenger rail projects could develop service along sections of the Corridor.

5.7.1 Purpose and Need: Travel Demand

The No-Build Alternative would not meet travel demand for passenger rail service along the Corridor because no additional transportation service would be provided.

5.7.2 Purpose and Need: Competitive and Attractive Travel Modes

The No-Build Alternative would not meet the need for competitive and attractive travel modes between Chicago and Omaha because no new mode would be provided. The Project would not exist and would not provide a competitive option among existing travel modes.

5.7.3 Technical Feasibility

The No-Build Alternative cannot be evaluated for technical feasibility because the Project would not be constructed. Other passenger rail sections of the Corridor would be evaluated for technical feasibility on their own merits as independent projects.

5.7.4 Economic Feasibility

The No-Build Alternative cannot be evaluated for economic feasibility because the Project would not be constructed. However, under the No-Build Alternative, other passenger rail sections of the Corridor could be independently determined to be economically feasible.

5.7.5 Environmental Concerns: Major Challenges

The Project would not be constructed under the No-Build Alternative and would not present major environmental challenges. However, the current rail routes between Chicago and Omaha would continue to be used, resulting in continued minor environmental impacts such as air emissions, erosion and sedimentation from railroad grades to adjacent waterbodies and wetlands, and noise.

5.7.6 Environmental Concerns: Sensitive Areas

The Project would not be constructed under the No-Build Alternative and would not impact sensitive areas. However, the current rail routes between Chicago and Omaha would continue to be used, resulting in continued minor environmental impacts such as air emissions, erosion and sedimentation from railroad grades to adjacent waterbodies and wetlands, and noise near sensitive areas. Other travel modes would continue to be used and would likely be more congested in the future as travel demand increases, resulting in potential impacts on sensitive areas.

5.7.7 Environmental Concerns: Right-of-Way

The Project would not be constructed under the No-Build Alternative and would not require acquisition of ROW. However, other passenger rail sections of the Corridor could be developed and result in acquisition of ROW. Additionally, other travel modes could be more congested as travel demand increases, resulting in ROW acquisition for infrastructure improvements.

5.8 SUMMARY

Of the six route alternatives, the greatest challenges are presented by Route Alternative 3. Not only would Route Alternative 3 have the highest cost, but also the permitting effort would be substantial. Establishing approximately 225 miles of new railroad ROW would create unacceptably high impacts on landowners, and the resulting permitting process would be extremely long. An extended permitting process could void the early baseline data prior to the permit being issued, thus requiring a second round of baseline data gathering and potentially requiring a re-evaluation of the findings of the Tier 1 EIS. Constructing essentially greenfield railroad for Route Alternative 3 would have significant impacts on communities, infrastructure, wetlands, streams, and wildlife habitat. Former bridges across major rivers would need to be reconstructed at high costs and environmental impacts. In addition to the high cost of ROW acquisition and bridge construction, track and infrastructure would also need to be reestablished at an appreciable cost.

As a result of the extremely high environmental and economic hurdles to re-establishing this abandoned rail corridor and anticipated local opposition and controversy, Route Alternative 3 is deemed unreasonable and is eliminated from further study.

The No-Build Alternative would not meet the purpose and need for the Project. For a build alternative, the fact that the route alternative would not meet purpose and need would be justification for eliminating the route alternative from further evaluation. However, for the purposes of NEPA analysis, the No-Build Alternative will be carried forward for detailed evaluation in the Tier 1 Draft/Final EIS. The reasons for retaining the No-Build Alternative include a requirement to evaluate the impacts of no action under CEQ's NEPA regulations (40 CFR 1502.14(d)), FRA Procedures for Considering Environmental Impacts (64 FR 28545), and the need to compare action alternatives against a baseline, which in the case of this Project would be the No-Build Alternative.

Subsequent studies will focus on Route Alternatives 1, 2, 4, 5, and 4-A. Route Alternative 5 has minimal population along this route alternative—nearly an order of magnitude less than other routes—and its viability with respect to travel demand should be carefully considered as part of the fine-level screening. Conversely, Route Alternatives 4 and 4-A have very high populations along these route alternatives.

Route Alternatives 1, 2, 4, 5, and 4-A have been retained for further analysis because they appear sufficiently viable and merit further analysis. The additional analysis will include more detailed operational analysis to refine travel times, conceptual definition of impacts of superimposing passenger trains upon existing freight train traffic, and conceptual cost estimates.

The coarse-level screening results are summarized in Table 5-1.

Table 5-1. Route Alternative Comparison

Criteria	Relative Ranking of Route Alternative						
	Route Alternative 1	Route Alternative 2	Route Alternative 3	Route Alternative 4	Route Alternative 5	Route Alternative 4-A	No-Build Alternative
Purpose and Need: Travel Demand	Medium ridership potential	Medium ridership potential	Medium ridership potential	High ridership potential	Low ridership potential	High ridership potential	No additional service
Purpose and Need: Competitive and Attractive Travel Modes	Poor competitiveness	Medium competitiveness	Medium competitiveness	High competitiveness	High competitiveness	High competitiveness	No new travel mode
Technical Feasibility	Medium complexity	High due to heavy freight train traffic	Low complexity associated with new route	Medium complexity	High due to heavy freight train traffic	Medium complexity	Not applicable
Economic Feasibility	Medium cost	High cost	High cost due to ROW acquisition	Medium cost due to previous second track in ROW	High cost	Medium cost due to previous second track in ROW	Not applicable
Environmental Concerns: Major Challenges	Medium overall impacts	High overall impacts due to ROW acquisition and river crossings	Extremely high overall impacts due to ROW acquisition	Medium overall impacts	High overall impacts due to ROW acquisition and river crossings	Medium overall impacts	No overall impacts
Environmental Concerns: Sensitive Areas	Medium impacts	High impacts due to ROW acquisition	Extremely high impacts due to ROW acquisition	Medium impacts	High impacts due to ROW acquisition	Medium impacts	No overall impacts
Environmental Concerns: Right-of-Way	Medium impacts	High impacts due to ROW acquisition	Extremely high impacts due to ROW acquisition	Medium impacts	High impacts due to ROW acquisition	Medium impacts	No overall impacts
Carried forward for fine-level screening?	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**[a]

Note:

[a] *While the No-Build Alternative does not meet purpose and need, it was carried forward to the fine-level screening to provide a basis of comparison to the other route alternatives (40 CFR 1502.14; 64 FR 28545).*

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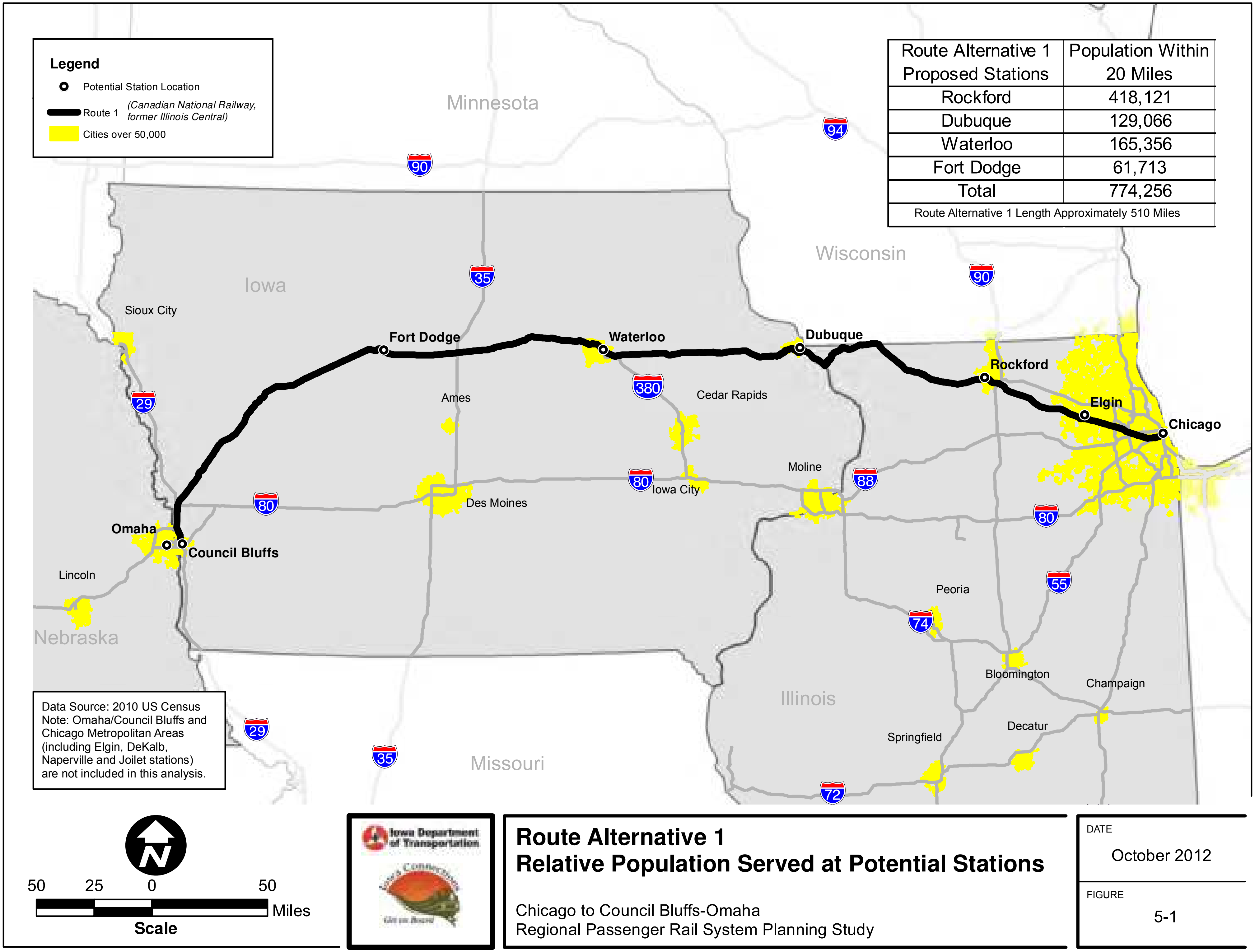


Legend

- Potential Station Location
- Route 1 *(Canadian National Railway, former Illinois Central)*
- Cities over 50,000

Route Alternative 1 Proposed Stations	Population Within 20 Miles
Rockford	418,121
Dubuque	129,066
Waterloo	165,356
Fort Dodge	61,713
Total	774,256

Route Alternative 1 Length Approximately 510 Miles

Data Source: 2010 US Census
Note: Omaha/Council Bluffs and Chicago Metropolitan Areas (including Elgin, DeKalb, Naperville and Joilet stations) are not included in this analysis.

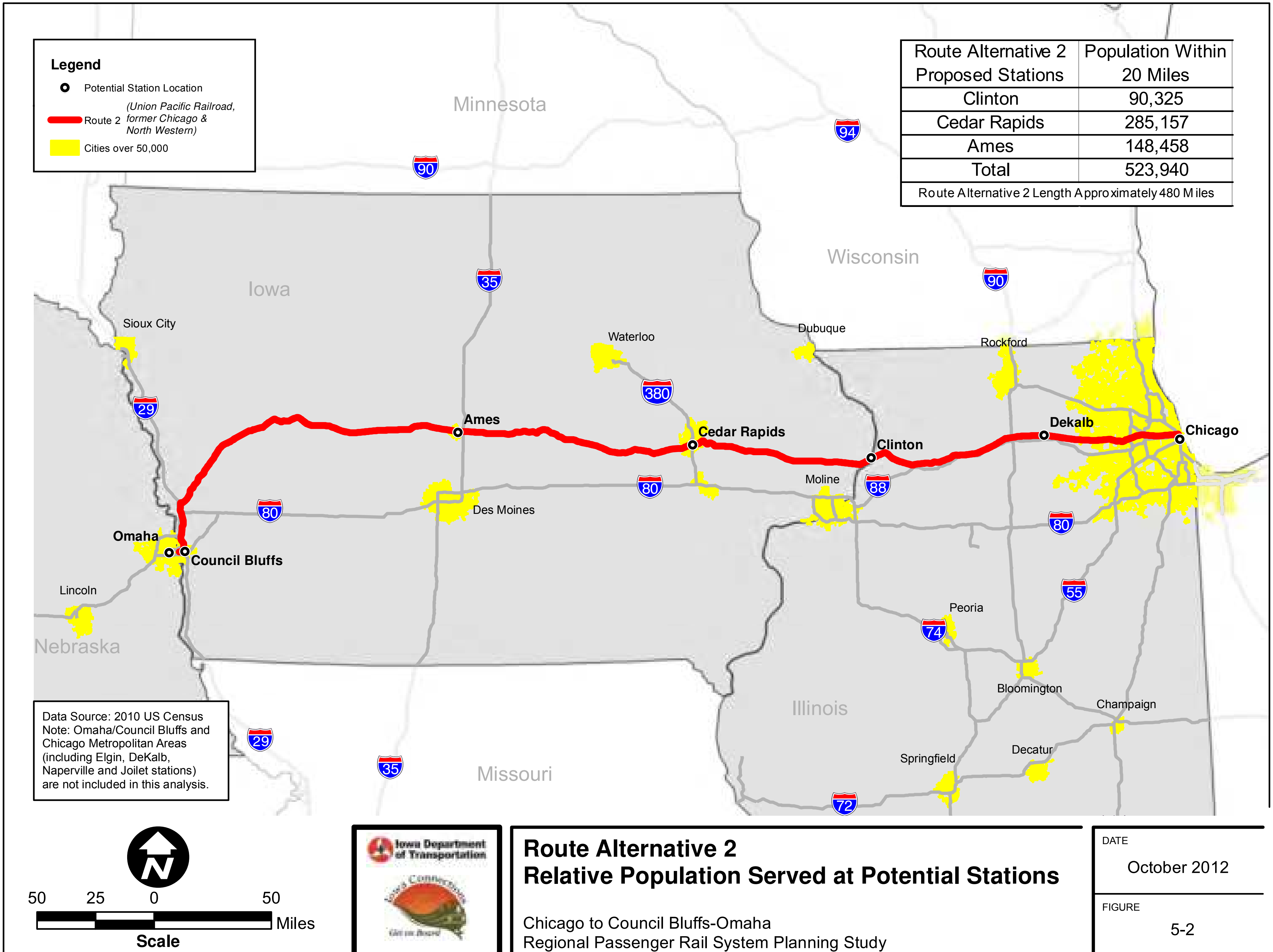
Iowa Department of Transportation

Route Alternative 1
Relative Population Served at Potential Stations

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
5-1



Route Alternative 2 Proposed Stations	Population Within 20 Miles
Clinton	90,325
Cedar Rapids	285,157
Ames	148,458
Total	523,940
Route Alternative 2 Length Approximately 480 Miles	

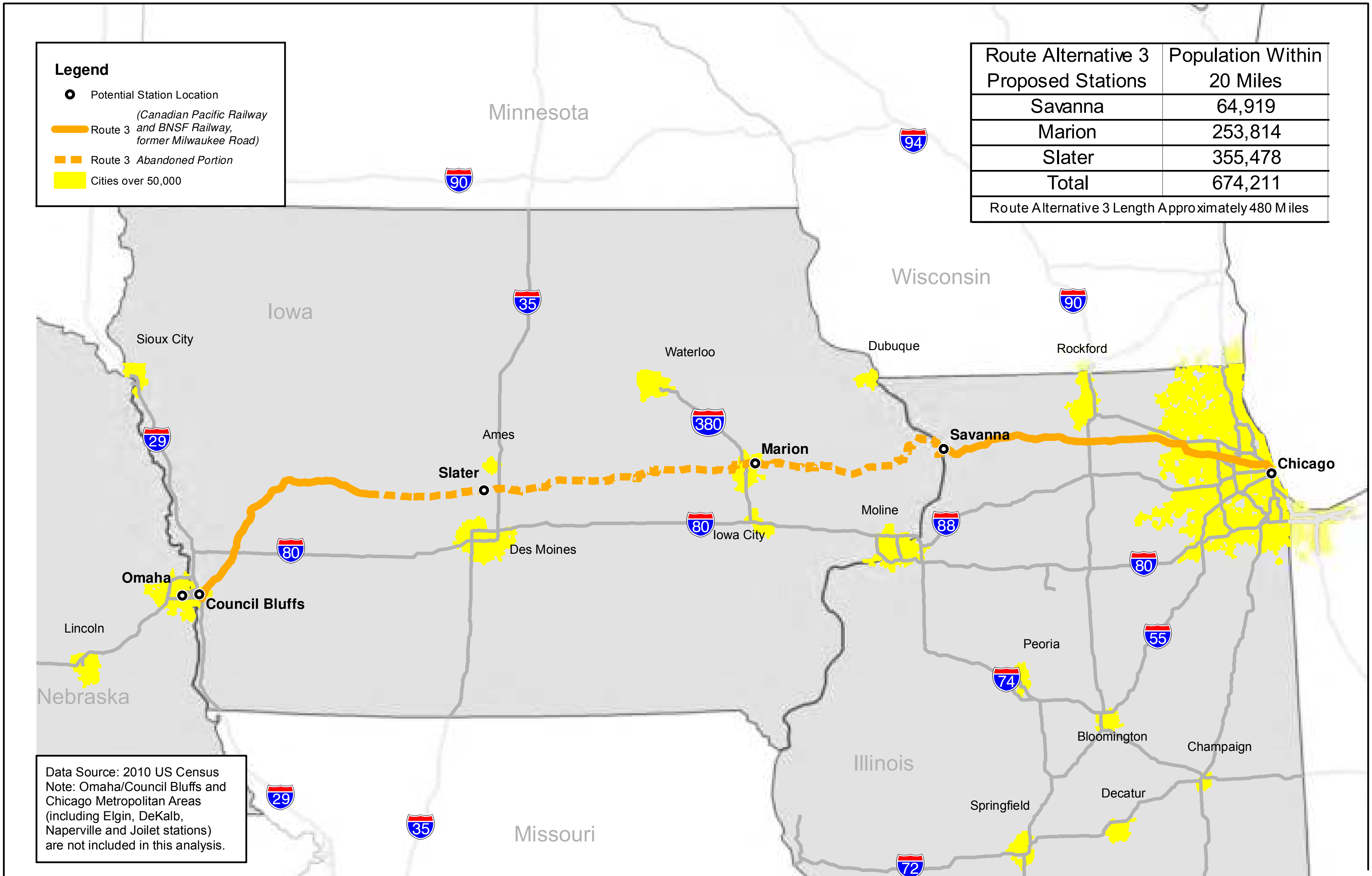
Iowa Department of Transportation

Route Alternative 2
Relative Population Served at Potential Stations

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
5-2



Route Alternative 3 Proposed Stations	Population Within 20 Miles
Savanna	64,919
Marion	253,814
Slater	355,478
Total	674,211
Route Alternative 3 Length Approximately 480 Miles	

Data Source: 2010 US Census
Note: Omaha/Council Bluffs and Chicago Metropolitan Areas (including Elgin, DeKalb, Naperville and Joilet stations) are not included in this analysis.

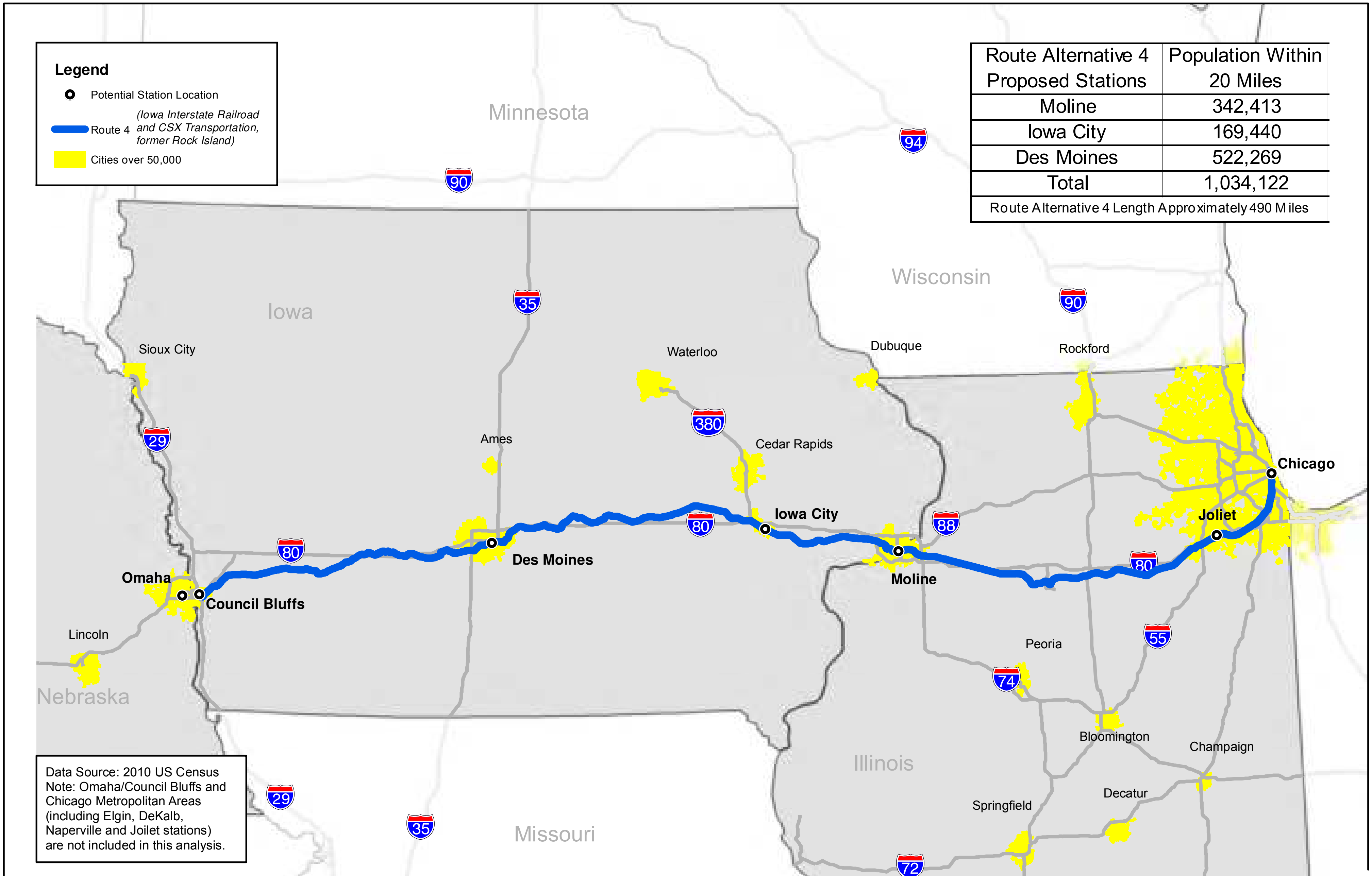
Iowa Department of Transportation

Route Alternative 3
Relative Population Served at Potential Stations

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
5-3



Route Alternative 4 Proposed Stations	Population Within 20 Miles
Moline	342,413
Iowa City	169,440
Des Moines	522,269
Total	1,034,122
Route Alternative 4 Length Approximately 490 Miles	

Data Source: 2010 US Census
Note: Omaha/Council Bluffs and Chicago Metropolitan Areas (including Elgin, DeKalb, Naperville and Joilet stations) are not included in this analysis.

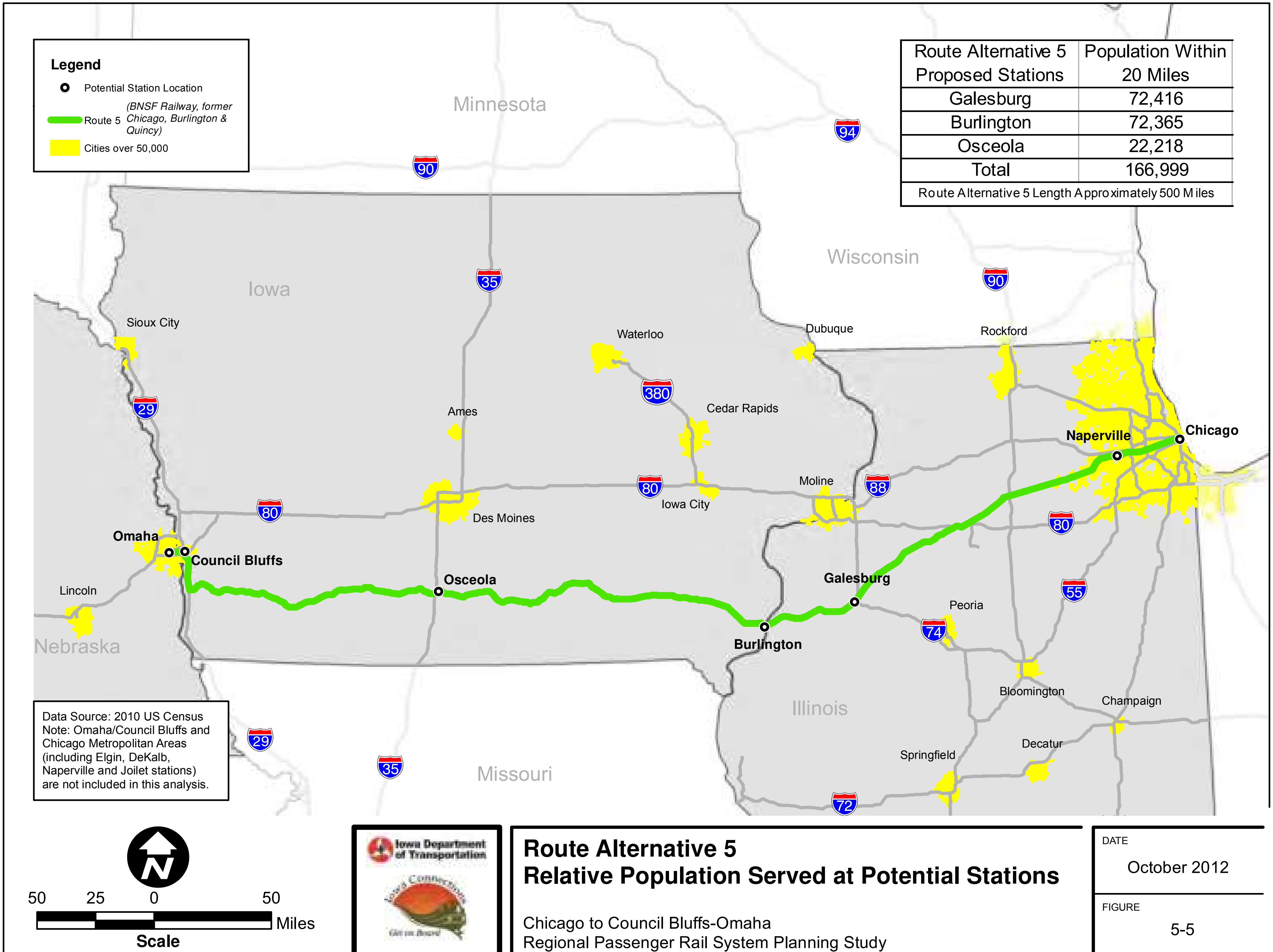
Iowa Department of Transportation

Route Alternative 4
Relative Population Served at Potential Stations

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
5-4



Route Alternative 5 Proposed Stations	Population Within 20 Miles
Galesburg	72,416
Burlington	72,365
Osceola	22,218
Total	166,999
Route Alternative 5 Length Approximately 500 Miles	

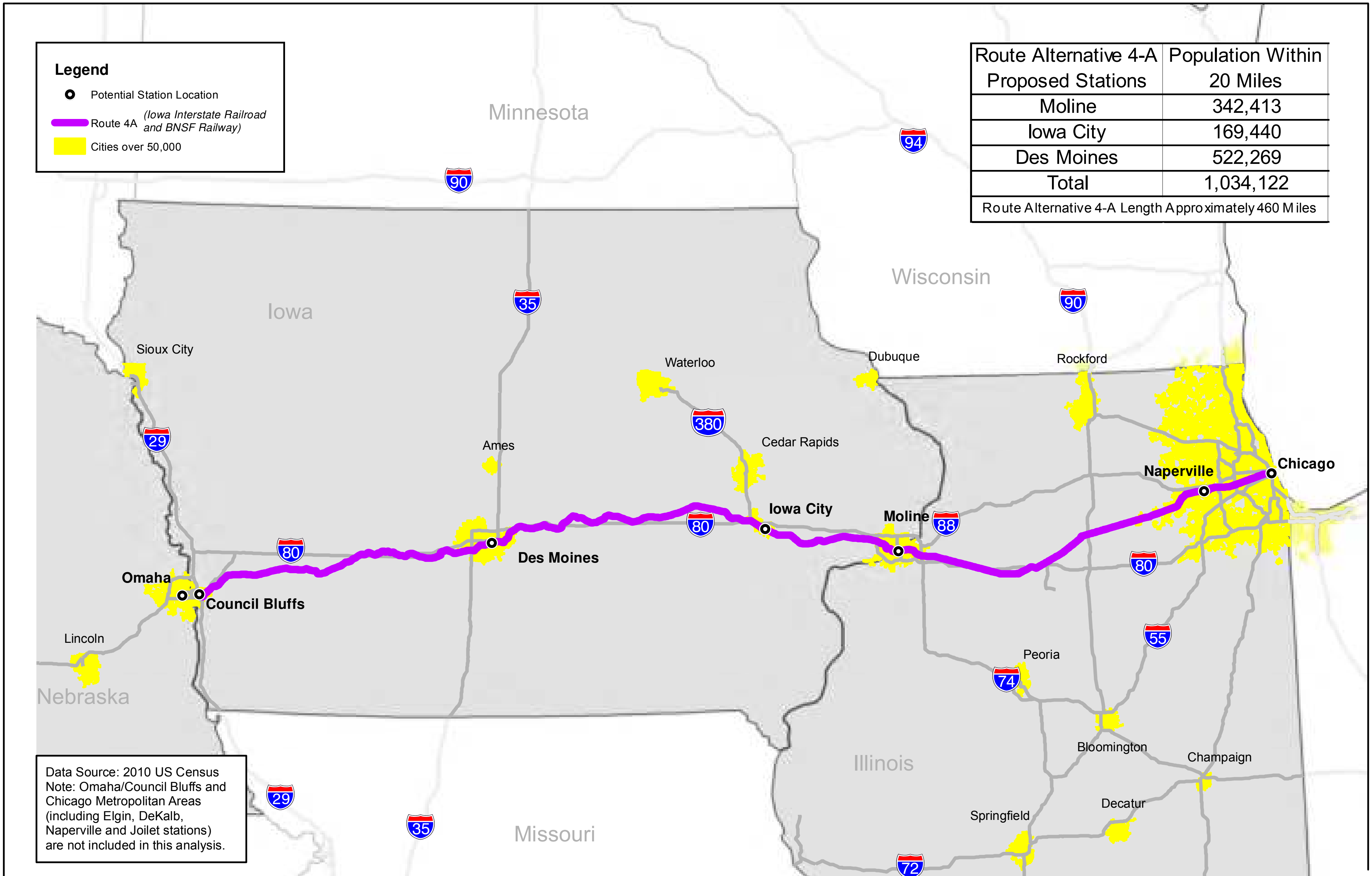
Iowa Department of Transportation

Route Alternative 5
Relative Population Served at Potential Stations

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
5-5



Route Alternative 4-A Proposed Stations	Population Within 20 Miles
Moline	342,413
Iowa City	169,440
Des Moines	522,269
Total	1,034,122
Route Alternative 4-A Length Approximately 460 Miles	

Iowa Department of Transportation

Route Alternative 4-A
Relative Population Served at Potential Stations

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
5-6

CHAPTER 6
FINE-LEVEL SCREENING

Following coarse-level screening, each route alternative was evaluated against the fine-level screening criteria. Screening criteria developed along with the methodology for the alternatives analysis are presented in Section 4.2.2, and these screening criteria were refined following coarse-level screening. Table 4-2 presents the refined fine-level screening criteria, and the results of the fine-level screening for each route alternative carried forward through coarse-level screening are presented in Sections 6.1 through 6.5. Section 6.6 includes a fine-level screening of the No-Build Alternative. Although the No-Build Alternative did not meet the purpose and need for the Project, it was carried forward for evaluation based on CEQ's NEPA requirement to evaluate impacts of no action and to serve as a baseline for comparison of the route alternatives.

A summary of the screening results is provided in Section 6.7. As with coarse-level screening, the fine-level screening effort addressed the route alternatives from west of Chicago to Council Bluffs. In addition, the respective routes into Chicago were addressed during fine-level screening. Because all route alternatives converge to a common point at Council Bluffs, the portion of the route alternatives between Council Bluffs and Omaha was not included as a technical or economic criterion for comparison among the route alternatives (as discussed in Section 4.2.2.2.2, Technical/Economic Feasibility: Alignment), except for travel time comparison between the route alternatives and alternate travel modes.

As discussed in Section 5.8, Route Alternative 3 was deemed unreasonable during coarse-level screening and was eliminated from further study. Therefore, Route Alternative 3 is not discussed below.

For the fine-level analysis, buffers were applied to estimated current ROW for potential impact assessment based on the number of tracks currently present for a particular route alternative. The buffers in the fine-level analysis represent additional ROW that would have to be acquired for construction of additional track and improvements. On Route Alternatives 2 and 5, where there are already two existing tracks, the new track would need to be constructed approximately 45 to 50 feet away from the existing tracks to accommodate an access road between the tracks. On Route Alternatives 1, 4, and 4-A, where there is only one existing track, the new track would be constructed 25 feet away from the existing track. The acreage of the buffers was also divided into urban and rural categories, as appropriate, to accommodate additional assessment of potential impacts. Additional details on the buffers applied are included in the route alternative discussions in Sections 6.1 through 6.5.

The route alternatives within the endpoint cities of the Corridor, Chicago and Omaha, were evaluated in a different fashion from the fine-level screening from the route alternatives between the cities. At Chicago, the five route alternatives have similar capacity and infrastructure attributes that create common technical and economic feasibility characteristics for all of the route alternatives. At Omaha, the five route alternatives would use a common alignment between Omaha and Council Bluffs, where the five route alternatives diverge onto separate paths across Iowa.

In Chicago, all five route alternatives evaluated in the fine-level screening host high-density commuter passenger rail, some host intercity passenger rail, and all host local freight trains and industrial switching. Route Alternatives 2 and 5 host high-density through freight train traffic. All five route alternatives have multiple crossings with other rail lines, and other trains frequently enter and exit the route alternatives within the urban area, with complexity of train routings and density of traffic increasing as the route alternatives approach their termini at Chicago Union Station or La Salle Street Station. It was assumed that the Chicago-Omaha passenger trains would operate within the Chicago terminal at the same speeds as present-day commuter trains, enabling the Chicago-Omaha trains to be slotted into existing commuter-train schedules to avoid the necessity for construction of additional main tracks that would enable operation of the Chicago-Omaha trains at higher speeds. The requirement for additional main track would create substantial impacts on the adjoining urban area as existing ROW on all five route alternatives in most locations within Chicago does not have sufficient room for an additional main track. Operation at higher speeds than commuter trains also has the potential to require extensive reconstruction of the wayside signal system, and may not be feasible within the technical limitations of grade-crossing signal systems. Consequently, this would require extensive separation of grade crossings, which could also create substantial impacts on the adjoining urban area. Accordingly, it was assumed that the existing alignments of the route alternatives were suitable for support of the Chicago to Omaha service's proposed frequency of five round-trips daily, by adjusting train schedules to slot passenger trains into existing commuter train schedules. This assumption would require confirmation in a Tier 2 study.

At Council Bluffs, all five route alternatives converge, after crossing Iowa, to a common point where historically the freight railroads between Chicago and Omaha interchanged freight traffic with the freight railroads between Omaha and the West. At Omaha, there are at present two route possibilities across the Missouri River between Council Bluffs and Omaha. Two bridges were constructed across the Missouri River. The first constructed bridge (later replaced and modernized) carried the Union Pacific Railroad, and handled all of the passenger trains crossing the river between Council Bluffs and Omaha, and nearly all of the freight trains. The second constructed bridge carried the Illinois Central Railroad, and handled local trains serving industrial districts in Omaha. The Union Pacific bridge, a high-level, fixed, double-track bridge that has vertical clearance to normal marine navigation, is in use. The condition of the UP bridge was not investigated in detail, and its capability to host passenger trains for a long duration without rehabilitation or replacement is not known. The Illinois Central bridge, a low-level, single-track, double-swing bridge, is not in use and is in poor condition, with nonfunctional mechanical and electrical systems. The Union Pacific route passes alongside the former Omaha Union Station (now a museum) and near the former Burlington Route Station (now derelict). Amtrak's current *California Zephyr* station is located adjacent to the Burlington Route Station.

Capacity on the existing UP Missouri River bridge is likely to be insufficient for the addition of five passenger trains each direction operating daily on a fixed schedule. Council Bluffs is a major crew change and regional yard for UP. Freight trains frequently are lined up and waiting to either enter the Council Bluffs yard or accept crews. Switching activities at the Council Bluffs yard frequently require use of one of the main tracks on the bridge. Speed limits for freight trains are low for reasons of safety. UP currently routes some freight trains directionally through Council Bluffs to avoid congestion at this bridge, on the steep descending eastward grade through Omaha toward the bridge, and in the Council Bluffs terminal. Some eastward freight trains pass through Council Bluffs, while some westward freight trains use the UP Blair Subdivision, crossing the Missouri River between Missouri Junction, Iowa, and Blair, Nebraska, and rejoining UP's transcontinental main line at Fremont, Nebraska. It may be possible to create capacity on the Missouri River bridge and in the Council Bluffs terminal area by adding capacity to the UP Blair Subdivision, which may entail a second Missouri River bridge at Blair to supplement or replace the existing single track bridge at Blair. RTC modeling would be required to explore these possibilities. Because the two endpoint terminals of the Corridor represent a separate case, they were evaluated separately from the routes between the terminals.

6.1 ROUTE ALTERNATIVE 1

Route Alternative 1is the northernmost of the route alternatives and is currently owned by CN. This route alternative is 516 miles long between Chicago Union Station and Council Bluffs.

6.1.1 Purpose and Need: Travel Demand

Route Alternative 1 would serve the intermediate major communities of Elgin and Rockford, Illinois, and Dubuque, Waterloo, and Fort Dodge, Iowa. The total population within 20 miles of these intermediate stops is approximately 774,000. Annual ridership and revenue from tickets sold for an assumed initial operation year of 2020 were forecast as:

- 505,000 to 590,000 riders and $15.2 to $17.7 million for 79 mph service
- 560,000 to 650,000 riders and $17.0 to $19.9 million for 90 mph service
- 615,000 to 715,000 riders and $19.0 to $22.2 million for 110 mph service

Ridership and revenue from tickets sold are third highest of the route alternatives, but revenue from tickets sold is relatively low for the ridership, as ridership is heavily influenced by short-haul, low-revenue from tickets sold trips between Chicago and Rockford, Illinois. Depending on the speed regime, ridership was estimated at approximately 175,000 to 220,000 fewer riders than Route Alternative 4-A, and revenue from tickets sold was estimated at $9.0 million to $11.7 million less than Route Alternative 4-A; Route Alternative 4-A had the highest estimated ridership and revenue from tickets sold of all alternatives (Table 6-6 includes estimated ridership and revenue from tickets sold data). Route Alternative 1 does not meet the purpose and need for travel demand because of low ridership and revenue from tickets sold forecasts west of Rockford, Illinois.

6.1.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 1 has travel times that are the slowest of the five route alternatives, and is not competitive with personal automobiles between Chicago and Omaha. Route Alternative 1 does not meet the purpose and need of providing a competitive and attractive travel mode because of its very slow travel times, which is uncompetitive with the automobile as an alternative mode. However, Route Alternative 1 provides modal interconnectivity at all of its intermediate cities, and terminates at Chicago Union Station, meeting the purpose and need for modal interconnectivity.

6.1.3 Technical Feasibility: Passenger and Freight Capacity

Route Alternative 1 did not historically originate at Chicago Union Station, but instead originated at Central Station, nearer to the lakefront. However, a connection can be made to main line trackage leading to Chicago Union Station either via the Belt Railway of Chicago or the Western Avenue Corridor. This connection trackage is highly constrained by freight capacity and may require additional infrastructure to accommodate the proposed Chicago-Omaha passenger trains.

Route Alternative 1 is a light- to moderate-density, moderate-speed (40 mph) freight-only rail line once it emerges west of the Chicago core (west of the Indiana Harbor Belt) to Council Bluffs. Freight traffic decreases westward from approximately 12 trains daily between Chicago and Waterloo, Iowa, to approximately 8 trains daily between Waterloo and Fort Dodge, Iowa, to approximately 4 trains daily between Fort Dodge and Council Bluffs.

Route Alternative 1's present-day track and train-control infrastructure is matched to its freight speeds and traffic density. Centralized Traffic Control (CTC) signaling is active from Chicago to Fort Dodge. From Fort Dodge to Council Bluffs, wayside signaling is absent and trains are operated by Track Warrant Control (TWC). Sidings of sufficient length to meet-and-pass freight trains are located approximately once every 25 miles; however, most sidings and the parallel main track at siding locations have industry leads off them and thus are used also for switching industries. Grades and curvature on Route Alternative 1 are moderate except in northwestern Illinois and northeastern Iowa, a distance of approximately 100 miles, where the profile crosses numerous drainages on grades of up to 1.0 percent and curvature is as tight as 8 degrees.

Between Portage and East Dubuque, Illinois, a distance of 13 miles, Route Alternative 1 uses shared trackage with a high-density BNSF freight line along the Mississippi River. All trains operate on two BNSF main tracks that are located at the base of the bluffs along the east bank of the river. At East Dubuque, trains on Route Alternative 1 swing inshore from the BNSF, then pass through an 851-foot tunnel, emerge to cross the BNSF main tracks at grade, then cross the Mississippi River on a 336-foot pin-connected truss swing bridge constructed in 1900. Trackage in Dubuque is BNSF and CP.

Route Alternative 1 would likely require the addition of a second main track from Chicago to Waterloo to afford sufficient capacity for passenger trains to have the desired speed and reliability, and to enable freight trains to continue to serve industries. Between Waterloo and Council Bluffs, a second main track may only be required in locations where industries are located, with sidings of sufficient length for freight trains at intervals sufficient for efficient operation of freight trains. Because there are numerous at-grade crossings on this route alternative, sidings cannot hold freight trains for long periods of time for passenger train meet/pass events. It may be more feasible to construct long sections of second main track, instead of sidings, so that freight trains can make rolling meets with passenger trains and avoid blocking crossings for extended periods of time.

6.1.4 Technical/Economic Feasibility: Alignment

The alignment between Chicago and Freeport, Illinois, is relatively straight and is conducive to high-speed passenger rail with the addition of required main track capacity for passenger trains. However, between Freeport and Waterloo, the alignment is poorly adapted to high-speed passenger rail because of many sharp curves, the tunnel and at-grade crossing of the BNSF rail line at East Dubuque, the Dubuque industrial district, and lengthy grades of up to 1.0 percent. Between Dubuque and Waterloo, the alignment twists along drainage valleys and is not readily adaptable for higher speeds.

Because of the limited capacity and low speeds of the existing track and signal infrastructure, substantial additional construction would be required. Where the existing main track can be used, it would require heavy upgrade. A second main track at 25-foot track centers is feasible in most places, but in the drainages on either side of the Mississippi River, construction of a second main track would require extensive cut and fill work.

6.1.5 Technical/Economic Feasibility: Structures

The major structures along Route Alternative 1 include the single-track Mississippi River Bridge, and the Des Moines River Bridge near Fort Dodge, Iowa. Upgrades or even double-tracking of the tunnel at East Dubuque would likely also be necessary in order to generate adequate capacity and suitable passenger train speeds in this vicinity. The Mississippi River Bridge may create a challenge as it opens approximately eight times per day. Sufficient track capacity on either side of the bridge to hold passenger trains while the bridge is open may be costly to create. Replacement of the bridge is potentially necessary due to its age, capacity, and as it is single-track.

6.1.6 Technical/Economic Feasibility: Grade Crossings

Grade crossings on Route Alternative 1 are more numerous because of the route alternative length, but present no exceptional challenges when compared to other route alternatives. On a per grade-crossing basis, costs for improving or revising grade crossings would be similar to Route Alternative 4 and the Wyanet-Council Bluffs portion of Route Alternative 4-A, and less than Route Alternatives 2 and 5 where new, three-track grade crossings with tracks at up to 45-foot centers would be necessary.

6.1.7 Economic Feasibility

Route Alternative 1 has an estimated cost that is approximately $550,000,000 more than Route Alternative 4, the least expensive route alternative. Although the current railroad has moderate to low freight train density with single track, the relatively high number is indicative of the fact that this is the longest of the alternatives. The major factors in the cost are:

- The length of the route alternative (42 miles longer than other route alternatives) with concomitant additional costs for new earthwork, track, and signals. Because of the extra route length, this factor dominates the economics of Route Alternative 1.
- Replacement or modification of the East Dubuque Tunnel, and modification or replacement of the Mississippi River Bridge.

Route Alternative 1 has no outstanding operating, maintenance, or equipment cost differentiators other than its greater length, which would proportionally add fuel, labor, and track and equipment maintenance charges. Trainset equipment turn analysis indicates that trainsets would average about 1.5 turns per day on every route alternative except Route Alternative 1, where one or potentially two additional trainsets may be required compared to the other route alternatives to account for late-arriving trains and less time for overnight maintenance.

6.1.8 Environmental Concerns: Environmental Impacts

The environmental resources present within the estimated existing ROW and buffer for Route Alternative 1 are identified in Table 6-1.

Table 6-1. Route Alternative 1 Environmental Resources within ROW and Buffer

Environmental Resource	Resources within ROW and Buffer
Named Streams	42 streams (67stream crossings; 22,000 feet of streams)
Floodplain	Mississippi and Missouri River: 191 acres
Wetlands	260 wetlands (190 acres)
Farmland	1,500 acres
Threatened and Endangered Species Critical Habitat	4 Topeka shiner streams
NRHP-listed Properties	3 properties: • Zephaniah Kidder House in Epworth, Iowa • Mills Tower Historic District in Iowa Falls, Iowa • George W. Rogers Company Shot Tower in Dubuque, Iowa
Potential Section 4(f) (may also be Section 6(f)) Properties	29 properties: • 8 forest preserves in Illinois • Upper Mississippi River National Wildlife and Fish Refuge • 1 state preserve and 1 wildlife management area (WMA) in Iowa • 12 city parks in the Chicago area • 3 city parks in Iowa • The aforementioned NRHP-listed properties
Superfund NPL sites	5 sites: • Tri County Landfill in South Elgin, Illinois • Southeast Rockford Groundwater Contamination in Rockford, Illinois • People's Natural Gas in Dubuque, Iowa • Waterloo Sycamore-Elm Street Coal Gasification Plant in Waterloo, Iowa • Omaha Lead Site in Omaha,

With regard to noise, vibration and environmental justice populations, most of the area along Route Alternative 1 in the Chicago urban area (from Chicago to South Elgin, Illinois) is moderately to densely developed residential area. Other substantial residential areas in close proximity to Route Alternative 1 are located in Rockford, Freeport, Lena, and Galena, Illinois; and Dyersville, Waterloo, Webster City, Fort Dodge, and Council Bluffs, Iowa.

Route Alternative 1 passes through mostly industrial or lightly developed areas in Dubuque, Iowa.

6.1.9 Environmental Concerns: Right-of-Way

Existing ROW was assumed to be 100 feet wide along the entire 516-mile route alternative. An estimated 35-foot buffer on the north side of existing ROW was assumed to be needed for Route Alternative 1, resulting in approximately 2,200 acres of new ROW that would be required. Of the ROW that would likely be acquired, approximately 600 acres are located in urban areas, and approximately 1,600 acres are located in rural areas.

6.2 ROUTE ALTERNATIVE 2

Route Alternative 2 is south of Route Alternative 1. Route Alternative 2 is owned by UP. This route alternative is 479 miles long between Chicago Union Station and Council Bluffs.

6.2.1 Purpose and Need: Travel Demand

Route Alternative 2 would serve the intermediate major communities of DeKalb, Illinois; and Clinton, Cedar Rapids, and Ames, Iowa. The total population within 20 miles of these intermediate stops is approximately 523,940. Annual ridership and revenue from tickets sold for an assumed initial operation year of 2020 were forecast as:

- 375,000 to 440,000 riders and $14.7 to $17.1 million for 79 mph service
- 415,000 to 485,000 riders and $16.3 to $19.1 million for 90 mph service
- 475,000 to 550,000 riders and $18.9 to $22.0 million for 110 mph service

Ridership and revenue from tickets sold are next to the lowest of the route alternatives. Depending on the speed regime, ridership was estimated at approximately 305,000 to 385,000 fewer riders than Route Alternative 4-A, and revenue from tickets sold was estimated at $9.5 million to $11.9 million less than Route Alternative 4-A; Route Alternative 4-A had the highest estimated ridership and revenue from tickets sold of all alternatives (Table 6-6 includes estimated ridership and revenue from tickets sold data). Route 2 does not meet the purpose and need for travel demand because of low ridership and revenue from tickets sold forecasts.

6.2.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 2 has travel times that are the fastest of the five route alternatives, and is competitive with personal auto between Chicago and Omaha. Consequently, Route Alternative 2 meets the purpose and need of providing a competitive and attractive travel mode. Route Alternative 2 provides modal interconnectivity at all of its intermediate cities, and terminates at Chicago Union Station, thus meeting the purpose and need for modal interconnectivity.

6.2.3 Technical Feasibility: Passenger and Freight Capacity

Route Alternative 2 did not historically originate at Chicago Union Station, but instead originated at North Western Station, several blocks north and west of Chicago Union Station. However, a connection can be made to main line trackage leading to Chicago Union Station via Route Alternative 3 at or near Western Avenue. This trackage is highly constrained by commuter-train capacity and may require additional infrastructure to accommodate the proposed Chicago-Omaha passenger trains. Slots in the commuter schedules for Chicago-Omaha passenger trains may not be feasible, and schedules for Chicago-Omaha service may have to be designed to fit around commuter schedules. Freight trains are generally constrained by commuter-train schedules. Track time for maintenance in the commuter-train territory may be constrained by the addition of Chicago-Omaha trains, requiring night-time track maintenance.

Route Alternative 2 is a high-density double- and triple-main-track commuter and freight rail line from Chicago to Elburn, with 56 weekday commuter trains at present and up to 80 freight trains per day. From Elburn to Missouri Valley, Iowa, the route is a high-density, double-main-track, freight-only line, with up to 80 freight trains per day. From Missouri Valley to Council Bluffs, the route is single track, mostly directional eastward, with up to 50 freight trains per day. Most freight trains travel in the fairly narrow speed range of 50 to 60 mph, but speeds of unit coal and grain trains decline to as little as 20 mph on ascending grades. Passenger service operating at 79, 90, or 110 mph would require many instances in a passenger train's trip where it would overtake a freight train. An example of the number of overtakes, assuming hourly freight trains, is presented in Figure 6-1, and the capacity impact of such overtakes is shown in Figure 4-1.

Route Alternative 1's present day track and train-control infrastructure is matched to its freight speeds and traffic density. UP has invested substantial sums since the 1990s to reinstall second main track that had been removed by the Chicago & North Western, to improve wayside signaling, and to replace the Kate Shelley Bridge (Des Moines River) near Boone, Iowa, with a new double-track high bridge. CTC signaling is active from Chicago to Council Bluffs. Industry leads are used to isolate local trains and unit trains working at grain elevators from the main tracks. Grades and curvature are moderate throughout this route.

Route Alternative 2 would likely require the addition of a third main track from the western boundary of the commuter territory to Missouri Valley, and a second main track from Missouri Valley to Council Bluffs, in order to obtain sufficient capacity for passenger trains. Passenger train/passenger train meet/pass events would likely require the addition of sections of fourth main track in order to avoid impedance with freight trains that are frequently closely spaced on the two existing main tracks.

6.2.4 Technical/Economic Feasibility: Alignment

Route Alternative 2 is relatively straight compared to the other route alternatives. However, it has the highest density of freight traffic of all the route alternatives. Addition of a third main track (and fourth main track, in some locations) presents extensive ROW, grading, and grade-crossing challenges. Current standards for UP include a maintenance access road between two of the main tracks where there are three or more main tracks. This is because roadway access is necessary for each track to enable efficient maintenance of track; where there are only two tracks, each track can be accessed from its respective side of the ROW. However, where there are three tracks, the track in the middle has no roadway access. This requires a third main track to be separated from existing double-track by 45 to 50 feet, in order to construct a roadway between the existing two tracks and the new, outer track. This is a major factor driving the complexity of the earthwork along Route Alternative 2.

At industrial spurs, where tracks leave the ROW to serve customers, new connections would need to be established to account for the third main track. With 45- to 50-foot track centers, this would require a substantial realignment of the industrial spur because spurs generally approach the railroad ROW at an angle. By moving the nearest main line 45 feet closer to the industrial spur, it would be necessary to revise curves and turnouts at each location. In each case, additional crossovers would have to be provided to connect the new passenger track to the existing freight tracks so that freight trains could efficiently access the industrial spurs. Such crossovers come with a high cost, not only for the earthwork and track construction activities, but also from the signaling revisions that would be necessary in the main line.

The only area where the 45-foot track centers might not be required is in the short stretch between Missouri Valley and Council Bluffs, Iowa, where there is only a single track today. A second track would be needed in this area, but it is possible that it could be constructed on 20- or 25-foot centers to the existing track.

The additional space required for the third main track may impinge on many of Route Alternative 2's existing rail-served customers located within the footprint of the third main track required to provide sufficient capacity for passenger trains. Relocation of industrial customers, or shifting of all main tracks to enable the tracks to skirt the footprint of industrial customers, may be required. This may be difficult in urban areas where industrial customers are located on both sides of the main tracks.

6.2.5 Technical/Economic Feasibility: Structures

Major structures on Route Alternative 2 are the Mississippi River Bridge at Clinton, Iowa, and the Kate Shelly High Bridge over the Des Moines River. The Mississippi River Bridge is a swing-span bridge that opens approximately eight times per day. In each case, there is only a two-track bridge and, in each case, an additional bridge would likely be required to avoid freight train congestion at either end of the bridge that would occur if the route narrowed from three to two main tracks to cross the bridges. These are major structures because of their size and, in the case of the Mississippi River bridge at Clinton, a new bridge would likely be required to be high-level to avoid hindrance to river navigation.

6.2.6 Technical/Economic Feasibility: Grade Crossings

Grade crossings on Route Alternative 2 present a distinct challenge where the new track is 45 feet or more away from the existing tracks. In this case, the distance between the two outside tracks would be in excess of 60 feet. Because railroad tracks are often higher than the surrounding roadway, the width of the "hump" at the grade crossings would be substantial, and the roadway profile at each crossing would also require substantial revision to account for the wider hump at the tracks. Finally, the existing grade crossing warning devices would require renewal; because the electric circuitry on each track is interconnected, the addition of a third track would necessitate revisions to the existing circuitry that would require new equipment in order to provide continuity of grade-crossing signal protection during construction, testing, and cut-over of new grade-crossing signal equipment.

6.2.7 Economic Feasibility

Route Alternative 2 presents many technical challenges and has an estimated cost that is approximately $1,005,000,000 more than Route Alternative 4, the least expensive route alternative. The major factors that contribute to the complexity are:

- The additional, third track located 45 feet away from the existing tracks and the associated earthwork. This would extend for well over 400 miles.
- Substantial modifications to industrial spurs and potential relocations of industrial customers necessitated by the wide track centers.
- New signaling systems for all three tracks for the entire route alternative extending over 400 miles.
- Two major bridges.

Route Alternative 2 has no outstanding operating, maintenance, or equipment cost differentiators compared to Route Alternatives 4, 5, and 4-A, except for a greater complexity of control points (track and signal systems) and wayside and grade-crossing signal systems compared to Route Alternatives 1, 4, and 4-A. Trainset equipment turn analysis indicates that trainsets would average about 1.5 turns per day on this route alternative. Trainset requirements are similar to Route Alternatives 4, 5, and 4-A, and potentially two fewer trainsets are required than Route Alternative 1.

6.2.8 Environmental Concerns: Environmental Impacts

The environmental resources present within the estimated existing ROW and buffer for Route Alternative 2 are identified in Table 6-2.

Table 6-2. Route Alternative 2 Environmental Resources within ROW and Buffer

Environmental Resource	Resources within ROW and Buffer
Named Streams	29 streams (45 stream crossings; 10,700 feet of streams)
Floodplain	Mississippi and Missouri River: 61 acres
Wetlands	320 wetlands (250 acres)
Farmland	2,120 acres
Threatened and Endangered Species Critical Habitat	4 Topeka shiner streams
NRHP-listed Properties	3 properties: • American Express Building in Carroll, Iowa • Chicago & North Western Passenger Depot and Baggage Room in Carroll, Iowa • Chicago & North Western Railway Power House in Chicago, Illinois.
Potential Section 4(f) (may also be Section 6(f)) Properties	31 properties: • 8 forest preserves in Illinois • Upper Mississippi River National Wildlife and Fish Refuge • 1 state park and 1 natural area in Illinois • 3 WMAs and 1 natural area in Iowa • 11 city parks in Illinois • 2 city parks in Iowa • The aforementioned NRHP-listed sites
Superfund NPL sites	4 sites: • Kerr-McGee Reed-Keppler Park in West Chicago, Illinois • Kerr-McGee Sewage Treatment Plant in West Chicago, Illinois • Lawrence Todtz Farm in Comanche, Illinois • Omaha Lead Site in Omaha, Nebraska

Most of the area along Route Alternative 2 in the Chicago urban area (from Chicago to West Chicago, Illinois) is moderately to densely developed residential area. Other substantial residential areas in close proximity to Route Alternative 2 are located in DeKalb, Dixon, Sterling, and Morrison, Illinois; and Nevada, Ames, Boone, and Council Bluffs, Iowa. Route Alternative 2 passes through mostly industrial or lightly developed areas in Clinton, Cedar Rapids, Tama, Marshalltown, and Carroll, Iowa. The closest residential area near the existing Amtrak Station in Omaha is located about 400 feet south of the rail line.

6.2.9 Environmental Concerns: Right-of-Way

Existing ROW was assumed to be 100 feet along the entire 479-mile route alternative. An estimated 55-foot buffer on the north side of existing ROW was assumed to be needed for Route Alternative 2, resulting in approximately 3,200 acres of new ROW that would be required. Of the ROW that would likely be acquired, approximately 950 acres are located in urban areas, and approximately 2,250 acres are located in rural areas.

6.3 ROUTE ALTERNATIVE 4

Route Alternative 4 is currently owned by three railroads. The Regional Transportation Authority (Illinois), operated by Metra, owns the route from La Salle Street Station (the line's terminus) to Joliet, Illinois. CSX Transportation owns the route from Joliet to Bureau, Illinois, but leases Utica to Bureau, Illinois, to IAIS. IAIS owns the route from Bureau, Illinois, to Council Bluffs. IAIS has trackage rights over CSX and Metra to Blue Island, Illinois. Originally, the entirety of this route was owned by the Rock Island. Upon the Rock Island's bankruptcy in 1980, the route was sold, in pieces, to Metra and predecessor companies of CSX and IAIS. This route alternative is 490 miles long between Chicago Union Station and Council Bluffs.

6.3.1 Purpose and Need: Travel Demand

Route Alternative 4 would serve the intermediate major communities of Joliet and Moline (one of the Quad Cities), Illinois; and Iowa City and Des Moines, Iowa. The total population within 20 miles of these intermediate stops is approximately 1,034,000. Annual ridership and revenue from tickets sold for an assumed initial operation year of 2020 were forecast as:

- 640,000 to 745,000 riders and $22.9 to $26.7 million for 79 mph service
- 690,000 to 805,000 riders and $24.9 to $29.1 million for 90 mph service
- 755,000 to 885,000 riders and $27.6 to $32.2 million for 110 mph service

Ridership and revenue from tickets sold are second highest of the route alternatives. Depending on the speed regime, ridership was estimated at approximately 40,000 to 50,000 fewer riders than Route Alternative 4-A, and revenue from tickets sold was estimated at $1.3 million to $1.7 million less than Route Alternative 4-A; Route Alternative 4-A had the highest estimated ridership and revenue from tickets sold of all alternatives (Table 6-6 includes estimated ridership and revenue from tickets sold data). Route 4 meets the purpose and need for travel demand.

6.3.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 4 has travel times that are nearly as fast as Route Alternatives 4-A and 5, and is competitive with personal auto between Chicago and Omaha. Consequently, Route Alternative 4 meets the purpose and need of providing a competitive and attractive travel mode. Route Alternative 4 provides modal interconnectivity at all of its intermediate cities, but does not terminate at Chicago Union Station, unless a connection is made from its route to La Salle Street Station to Chicago Union Station. This connection would be costly, have impacts on urban areas that the connection would be constructed through, and is not practical. Absent this connection, Route Alternative 4 provides substantially less modal interconnectivity at Chicago and therefore does not meet the purpose and need.

6.3.3 Technical Feasibility: Passenger and Freight Capacity

Route Alternative 4 did not historically originate at Chicago Union Station, but instead originated at La Salle Street Station, several blocks south and to the east of Union Station. There are several potential locations where a connection could be constructed from Route Alternative 4 to main line trackage that leads to Chicago Union Station; however these would require extensive acquisition of urban property, which would be costly and disruptive to neighborhoods, and are not considered to be practical.

Route Alternative 4 is a high-density commuter railroad from Chicago to Joliet, Illinois. There is little freight traffic between Chicago and Blue Island, where most CSX and IAIS freight trains enter and exit Route Alternative 4. Freight traffic is constrained by commuter-train schedules between Blue Island and Joliet. The Chicago to Joliet is highly constrained by commuter-train capacity and may require additional infrastructure to accommodate the proposed Chicago-Omaha passenger trains. Slots in the commuter schedules for passenger trains may not be feasible, and schedules for Chicago-Omaha service may have to be designed to fit around commuter schedules. Track time for maintenance in the commuter-train territory may be constrained by the addition of Chicago-Omaha trains, requiring night-time track maintenance.

From Joliet west through the Quad Cities to Homestead Junction, Iowa, approximately 20 miles west of Iowa City, Route Alternative 4 is a moderate-density, moderate-speed (40 mph) freight-only railroad. At Homestead Junction, freight traffic from the industrialized Cedar Rapids area enters the route for movement east. The Quad Cities is heavily congested as three railroads (IAIS, BNSF, and CP) converge to switch industries and interchange cars on a single main track that also serves as the switch lead to two railroad yards.

West of Homestead Junction, Route Alternative 4 is low-density except at Des Moines, where it crosses Union Pacific Railroad's "Spine Line" that runs between Kansas City and Minneapolis-St. Paul, in a rail terminal that has considerable congestion caused by industrial switching, yard switching, and interchange. Many freight trains operating on this route alternative exceed the length of the sidings, and freight/train meet/pass events are often conducted at terminals instead of at sidings. As part of the operations analysis conducted in 2010 in support of the Chicago to Iowa City High Speed Rail Service Development Plan, it was determined that the line was at capacity for the existing freight traffic between Wyanet and Iowa City, and the addition of two round trip passenger trains, would tax the existing system and require the addition of several sidings as well as and a second main track through the Quad Cities Terminal.

Route Alternative 4's present-day track and train-control infrastructure is matched to its freight speeds and traffic density. CTC is active from Chicago to Joliet. From Joliet to Council Bluffs, the wayside signal system has been deactivated and trains are operated by TWC. Sidings of sufficient length to meet-and-pass freight trains are located at 25- to 50-mile spacing; however, most sidings and the parallel main track at siding locations have industry leads off them and thus are used also for switching industries. Grades on Route Alternative 4 are moderate and curvature is light except in two locations: the first is where the route follows the Illinois River from Joliet to Bureau, and the second is between Des Moines and Atlantic, Iowa.

Route Alternative 4 would likely require the addition of a second main track from Joliet to Homestead Junction to afford sufficient capacity for passenger trains to have the desired speed and reliability, and to enable freight trains to continue to serve industries. Between Homestead Junction and Council Bluffs, a second main track may only be required in locations where industries are located, with sidings of sufficient length for freight trains at intervals sufficient for efficient operation of freight trains, as well as second main track through the Des Moines terminal. Because there are numerous at-grade crossings on this route alternative, sidings cannot hold freight trains for long periods of time for passenger train meet/pass events. It may be more feasible to construct long sections of second main track, instead of sidings, so that freight trains can make rolling meets with passenger trains and avoid blocking crossings for extended periods of time.

6.3.4 Technical/Economic Feasibility: Alignment

The alignment for this route alternative does not access Chicago Union Station, but instead serves La Salle Street Station, several blocks south and east of Chicago Union Station. La Salle Street is a stub-end station (trains enter and leave only from the station) that serves Metra commuter trains only. Chicago Union Station is a through station (trains can enter or leave from both the south and the north, or continue through the station in one direction), and serves Metra commuter trains as well as Amtrak long-distance and regional trains. Chicago Union Station is Amtrak's Midwest hub, as well as the proposed hub for the Midwest Regional Rail System, and thus offers connectivity among existing and proposed future passenger-rail routes that is not afforded by La Salle Street Station.

Chicago Union Station is directly served by Route Alternative 5 (from the south) and can be served by Route Alternatives 1 and 2. Route Alternative 4 approaches Chicago's downtown core from its south side and at four locations could potentially connect to rail lines that would afford direct access to Chicago Union Station:

- At Joliet, Route Alternative 4 crosses the BNSF transcontinental freight main line and UP's Chicago-St. Louis line at grade. A connection track constructed in the northwest quadrant of this crossing would afford access to either the BNSF or UP. This would in turn require use of either the Belt Railway of Chicago at McCook, or a connection at the Western Avenue corridor crossing, to obtain access to Route Alternative 5 to Union Station. The Joliet connection would occur through the Joliet downtown district and must mitigate heavy freight train traffic either on BNSF, the Belt Railway of Chicago, or the Western Avenue Corridor, and is not practical.
- At Englewood, Route Alternative 4 crosses the Norfolk Southern line to Union Station (used by Amtrak long-distance trains). A connection track constructed in the northwest quadrant would obtain access to Chicago Union Station. The Englewood connection would occur across an intersection of Interstate Highways 90 and 94, and two Chicago Transit Authority heavy-rail rapid transit lines, or alternatively, west of I-90 through approximately 15 blocks of residential neighborhood, and is not practical.
- At West 40th Street, Route Alternative 4 junctions with an NS freight line that runs west to Ashland Avenue Yard. Approximately ½ mile to the west, this freight line passes under the NS route to Chicago Union Station used by Amtrak long-distance trains. A connection track constructed in the northeast quadrant would obtain access to Chicago Union Station. This connection would occur in an industrial neighborhood, but present significant challenges to overcome vertical differential with surface streets, and must mitigate heavy freight traffic on the NS line to Ashland Avenue. This connection is not practical.
- Immediately south of La Salle Street Station, Route Alternative 4 could connect to Route Alternative 5 by constructing a connection through either residential neighborhoods or a park, and crossing the South Branch of the Chicago River. This connection is not practical.

The alignment for this route alternative is favorable for high speed rail except along the Illinois River, and between Des Moines and Atlantic, Iowa, where it is moderately curved. The most favorable characteristic is that between Joliet and West Liberty, Iowa (approximately 15 miles east of Iowa City), the route was expanded to two main tracks in the 1900-1950 era, but one track has since been removed. Though the proposed second track would be approximately 20 to 25 feet from the existing track, the original embankment could be incorporated as part of the new earthwork, thus generating potentially substantial savings.

West of West Liberty, entirely new embankment would have to be constructed for the second track. Unlike Route Alternatives 2 and 5, however, because there is only one track currently in existence, there is no need for an access road between tracks; both the existing and new tracks could be accessed from their respective sides of the ROW.

Because of the 20 to 25-foot track centers, the revisions associated with industrial spurs would be less substantial compared with those route alternatives that would build the new track on 45-foot centers to the existing tracks. This is because the narrower track centers create less disruption to the geometry of the existing spur tracks.

Because of the limited capacity and low speeds of the existing track and the lack of signal infrastructure, substantial additional construction would be required. Where the existing main track can be used, it would require heavy upgrade. Second main track at 25-foot track centers is feasible in most places without heavy earthwork.

6.3.5 Technical/Economic Feasibility: Structures

Route Alternative 4 presents a favorable situation with respect to major structures, with only one major structure, the double-track, swing-span, Government Bridge across the Mississippi River. A new structure across the Mississippi River is likely to not be required because the existing bridge has two tracks, though the second track is not at present in place across the fixed approach spans. Detailed analysis of the main Mississippi River span and approach spans has not been conducted to determine their continued long-term capability for service without substantial repair, rehabilitation, or replacement, but during the prior Chicago-Iowa City study work, no serious issues were identified.

At the moveable span itself, a small section of second track remains. This is crucial because this track would likely be “grandfathered” with respect to marine clearance requirements, meaning that no clearance variance would be required here as would likely be required by the U.S. Coast Guard for additional tracks across the Mississippi River on Route Alternatives 1, 2 and 5. All the more important is the fact that constructing a new moveable span would be, by far, the most expensive portion of a new structure.

Unlike many of the other route alternatives, a major structure would likely be required at Des Moines, to provide a grade separation of Route Alternative 4 with the north-south oriented UP Spine Line that at present crosses Route Alternative 4 at grade, and also serves a large regional classification yard. This intersection is heavily used at present, with many trains each day on the UP route, and continuous switching of UP’s Des Moines yard and industries. Construction of a grade separation may require replacement of lost yard capacity track if there is insufficient room for the new track and approaches.

6.3.6 Technical/Economic Feasibility: Grade Crossings

Grade crossings on Route Alternative 4 present no exceptional challenges when compared to other route alternatives. Because many of the grade crossings of Route Alternative 4 already have roadway geometry and side entrances arranged for the now-missing second main track, it is expected that the addition of a second main track at grade crossings at a 25-foot track center would not be a major technical hurdle. While there would be impacts on the existing grade-crossing circuitry and the roadway profiles, the costs would be modest.

6.3.7 Economic Feasibility

Route Alternative 4 is the least expensive route alternative compared to other route alternatives. This is chiefly because:

- Much of the route was previously constructed as double track, and the embankment can be reused
- Where required, a new second main track could be at 25-foot centers while still allowing for maintenance access to each track, translating to lower construction complexity and thus lower construction costs, than those route alternatives that currently have two tracks and that would require a third track, at 45-foot track centers.
- The existing Mississippi River Bridge is double-track.
- Only one major structure is likely to be required: a grade-separation at Des Moines.

Route Alternative 4 has no outstanding operating, maintenance, or equipment cost differentiators compared to Route Alternatives 1, 2, 5, and 4-A, and is substantially shorter than Route Alternative 1. Trainset equipment turn analysis indicates that trainsets would average about 1.5 turns per day on this route alternative. Trainset requirements are similar to Route Alternatives 2, 5, and 4-A, and potentially two fewer trainsets are required than Route Alternative 1.

6.3.8 Environmental Concerns: Environmental Impacts

The environmental resources present within the estimated existing ROW and buffer for Route Alternative 4 are identified in Table 6-3.

Table 6-3. Route Alternative 4 Environmental Resources within ROW and Buffer

Environmental Resource	Resources within ROW and Buffer
Named Streams	41 streams (52 stream crossings; 21,200 feet of streams)
Floodplain	Mississippi and Missouri River: 40 acres
Wetlands	280 wetlands (190 acres)
Farmland	1,240 acres
Threatened and Endangered Species Critical Habitat	1 Topeka shiner stream
NRHP-listed Properties	9 properties: • Chicago, Rock Island & Pacific Railroad Depot in Marseilles, Illinois • Colonel Joseph Young Block in Davenport, Iowa • Littig Brothers Eagle Brewery in Davenport, Iowa • City Market in Davenport, Iowa • Bonaventura Heinz House in Davenport, Iowa • Adair Viaduct in Adair, Iowa • Chicago, Rock Island & Pacific Railroad Passenger Station in Iowa City, Iowa • Chicago, Rock Island, &Pacific Railroad Depot in Wilton, Iowa • Chicago, Rock Island, &Pacific Railroad Passenger Depot in Council Bluffs, Iowa
Potential Section 4(f) (may also be Section 6(f)) Properties	27 properties: • 5 forest preserves in Illinois • 1 state park and 5 city parks in Illinois • 7 city parks in Iowa • The aforementioned NRHP-listed sites
Superfund NPL sites	7 sites: • BP Amoco Chemical Company in Channahon, Illinois • Mattheisen Hegler Zinc in La Salle, Illinois • Ottawa City Landfill in La Salle, Illinois • Mobil Mining and Minerals in De Pue, Illinois • Des Moines TCE (trichloroethylene) in Des Moines, Iowa • Railroad Avenue Groundwater Contamination in Des Moines, Iowa • Omaha Lead Site in Omaha, Nebraska

Most of the area along Route Alternative 4 in the Chicago urban area (from Chicago to Joliet, Illinois) is moderately to densely developed residential area. Other substantial residential areas in close proximity to Route Alternative 4 are located in Morris, Marseilles, Ottawa, La Salle, Peru, Silvis, East Moline, and Moline, Illinois; and Davenport, Iowa City, and Grinnell, Iowa. Route Alternative 4 passes through mostly industrial or lightly developed areas in Geneseo, Illinois; and Newton, Des Moines, Atlantic, and Council Bluffs, Iowa. The closest residential area near the existing Amtrak Station in Omaha is located about 400 feet south of the rail line.

6.3.9 Environmental Concerns: Right-of-Way

Existing ROW was assumed to be 100 feet along the entire 490-mile route alternative. An estimated 35-foot buffer on the north side of existing ROW was assumed to be needed for Route Alternative 4, resulting in approximately 2,100 acres of new ROW that would be required. Of the ROW that would likely be acquired, approximately 800 acres are located in urban areas, and approximately 1,300 acres are located in rural areas.

6.4 ROUTE ALTERNATIVE 5

Route Alternative 5 is now owned entirely by BNSF except for trackage immediately at Chicago Union Station. It is the southernmost of the route alternatives under consideration, extending from Chicago southward to Galesburg, Illinois, then west to Pacific Junction, Iowa, and then due north to Council Bluffs. This route alternative is 496 miles long between Chicago Union Station and Council Bluffs. The route is used by Amtrak's *California Zephyr* between Chicago and Pacific Junction, Iowa, and then a BNSF line on the west bank of the Missouri River near Plattsmouth, Nebraska, to access Omaha, bypassing Council Bluffs.

6.4.1 Purpose and Need: Travel Demand

Route Alternative 5 would serve the intermediate major communities of Naperville and Galesburg, Illinois, and Burlington and Osceola, Iowa. The total population within 20 miles of these intermediate stops is approximately 167,000. Annual ridership and revenue from tickets sold for an assumed initial operation year of 2020 were forecast as:

- 255,000 to 295,000 riders and \$11.2 to \$13.0 million for 79 mph service
- 285,000 to 330,000 riders and \$12.5 to \$14.5 million for 90 mph service
- 315,000 to 370,000 riders and \$14.3 to \$16.6 million for 110 mph service

Ridership and revenue from tickets sold are lowest of the route alternatives (Table 6-6 includes estimated ridership and revenue from tickets sold data). Depending on the speed regime, ridership was estimated at approximately 425,000 to 565,000 fewer riders than Route Alternative 4-A, and revenue from tickets sold was estimated at \$13.0 million to \$17.3 million less than Route Alternative 4-A; Route Alternative 4-A had the highest estimated ridership and revenue from tickets sold of all alternatives (Table 6-6 includes estimated ridership and revenue from tickets sold data). Route Alternative 5 does not meet the purpose and need for travel demand with only a range of 255,000 to 370,000 riders.

6.4.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 5 has travel times that are the third fastest, and nearly as fast as Route Alternatives 2 and 4-A, and is competitive with personal auto between Chicago and Omaha. Consequently, Route Alternative 5 meets the purpose and need of providing a competitive and attractive travel mode. Although Route Alternative 5 serves Chicago Union Station, it provides substantially less modal interconnectivity at intermediate cities than Route Alternatives 1, 2, 4, and 4-A, and thus does not meet the purpose and need for modal interconnectivity.

6.4.3 Technical Feasibility: Passenger and Freight Capacity

Route Alternative 5 originates at Chicago Union Station, the proposed hub of the Midwest Regional Rail System, and provides a triple-track route as far west as Aurora, the western end of commuter-rail service. This trackage is highly constrained by commuter-train capacity and may require additional infrastructure to accommodate the proposed Chicago-Omaha passenger trains. Slots in the commuter schedules for Chicago-Omaha passenger trains may not be feasible, and schedules for Chicago-Omaha service may have to be designed to fit around commuter schedules. Freight trains are generally constrained by commuter-train schedules. Track time for maintenance in the commuter-train territory may be constrained by the addition of Chicago-Omaha trains, requiring night-time track maintenance.

Route Alternative 5 is a high-density double- and triple-main-track commuter and freight rail line from Chicago to Aurora, with 64 weekday commuter trains at present and up to 50 freight trains per day, as well as four Amtrak long-distance and four Amtrak regional passenger trains daily. From Aurora to Galesburg, Illinois, the route has moderate-density freight traffic and eight Amtrak trains per day, but freight traffic includes coal trains that are frequently staged in this section on one of the two main tracks, while awaiting connection or commuter-train slots in Chicago. From Galesburg to Pacific Junction, Iowa (approximately 15 miles south of Council Bluffs), the route is mostly double-main-track, freight-only, with up to 50 freight trains per day. From Pacific Junction to Council Bluffs, the route is single track, with 4 to 6 freight trains per day. Most freight trains travel in the fairly narrow speed range of 50 to 60 mph, but speeds of unit coal and grain trains decline to as little as 20 mph on ascending grades. Passenger service operating at 79, 90, or 110 mph would require many instances in passenger train’s trip where it would overtake a freight train. An example of the number of overtakes, assuming hourly freight trains, is presented in Figure 6-1, and the capacity impact of such overtakes is shown in Figure 4-1.

Route Alternative 5’s present day track and train-control infrastructure is matched to its freight speeds and traffic density. CTC signaling or current-of-traffic Automatic Block Signals are active from Chicago to Pacific Junction. From Pacific Junction to Council Bluffs, the main track is operated by TWC. Industry leads are used to isolate local trains and unit trains working at grain elevators from the main tracks between Chicago and Pacific Junction. Grades and curvature are moderate throughout this route.

Route Alternative 5 would likely require the addition of a third main track from the western boundary of the commuter territory to Pacific Junction, and a second main track from Pacific Junction to Council Bluffs, in order to obtain sufficient capacity for passenger trains. Passenger train/passenger train meet/pass events would likely require the addition of sections of a fourth main track in order to avoid impedance with freight trains that are frequently closely spaced on the two existing main tracks.

6.4.4 Technical/Economic Feasibility: Alignment

Route Alternative 5 is relatively straight compared to the other route alternatives, though not as straight as Route Alternative 2. However, it has the second-highest density of freight traffic of the route alternatives. Addition of a third main track (and fourth main track, in some locations) presents extensive ROW, grading, and grade-crossing challenges. Current standards for BNSF include a maintenance access road between two of the main tracks where there are three or more main tracks. This is because roadway access is necessary for each track to enable efficient maintenance of track; where there are only two tracks, each track can be accessed from its respective side of the ROW. However, where there are three tracks, the track in the middle has no roadway access. This requires a third main track to be separated from existing double-track by 45 to 50 feet, in order to construct a roadway between the existing two tracks and the new, outer track. This is a major factor driving the complexity of the earthwork along Route Alternative 5.

At industrial spurs, where tracks leave the ROW to serve customers, new connections would need to be established to account for the third main track. With 45- to 50-foot track centers, this would require a substantial realignment of the industrial spur because spurs generally approach the railroad ROW at an angle. By moving the nearest main line 45 feet closer to the industrial spur, it would be necessary to revise curves and turnouts at each location. In each case, additional crossovers would have to be provided to connect the new passenger track to the existing freight tracks so that freight trains could efficiently access the industrial spurs. Such crossovers come with a high cost, not only for the earthwork and track construction activities, but also from the signaling revisions that would be necessary in the main line.

The only area where the 45-foot track centers might not be required is in the short stretch between Pacific Junction and Council Bluffs, Iowa, where there is only a single track today. A second track would be needed in this area, but it is possible that it could be constructed on 20- or 25-foot centers to the existing track.

The additional space required for the third main track may impinge on many of Route Alternative 5’s existing rail-served customers located within the footprint of the third main track required to provide sufficient capacity for passenger trains. Relocation of industrial customers, or shifting of all main tracks to enable the tracks to skirt the footprint of industrial customers, may be required. This may be difficult in urban areas where industrial customers are located on both sides of the main tracks.

Route Alternative 5 passes through hilly terrain in southern Iowa and has many stream crossings. Addition of a third main track presents numerous challenges for side-hill cuts, fills, and stream crossings.

6.4.5 Technical/Economic Feasibility: Structures

The only major structure on Route Alternative 5 is the Mississippi River Bridge at Burlington, Iowa. The Mississippi River Bridge is a double-track, lift-span bridge that opens approximately eight times per day. BNSF has recently renewed this bridge and the fixed approach spans. Train speeds to the west of the bridge are slow due to curvature, urban development, and industrial development. An additional bridge would likely be required to avoid freight train congestion at either end of the bridge that would occur if the route narrowed from three to two main tracks at the bridge. A new bridge would likely be required to have high clearance to avoid hindrance to river navigation.

6.4.6 Technical/Economic Feasibility: Grade Crossings

Grade crossings on Route Alternative 5 present a distinct challenge where the new track is 45 feet or more away from the existing tracks. In this case, the distance between the two outside tracks would be in excess of 60 feet. Because railroad tracks are often higher than the surrounding roadway, the width of the “hump” at the grade crossings would be substantial, and the roadway profile at each crossing would also require substantial revision to account for the wider hump at the tracks. Finally, the existing grade crossing warning devices would require renewal; because the electric circuitry on each track is interconnected, the addition of a third track would necessitate revisions to the existing circuitry that would require new equipment in order to provide continuity of grade-crossing signal protection during construction, testing, and cut-over of new grade-crossing signal equipment.

6.4.7 Economic Feasibility

Route Alternative 5 presents many technical challenges and has an estimated cost that is approximately $1,230,600,000 more than Route Alternative 4, the least expensive route alternative. The major factors that contribute to the complexity are:

- The additional, third track located 45 feet away from the existing tracks and the associated earthwork. This would extend for well over 400 miles. This track would require heavy earthwork due to the hilly terrain of southern Iowa, and has numerous drainage crossings requiring bridging.
- Substantial modifications to industrial spurs and potential relocations of industrial customers necessitated by the wide track centers.
- New signaling systems for all three tracks for the entire route alternative extending over 400 miles.
- One major bridge.

Route Alternative 5 has no outstanding operating, maintenance, or equipment cost differentiators compared to Route Alternatives 2, 4, and 4-A, except for a greater complexity of control points (track and signal systems) and wayside and grade-crossing signal systems compared to Route Alternatives 1, 4, and 4-A. Trainset equipment turn analysis indicates that trainsets would average about 1.5 turns per day on this route alternative. Trainset requirements are similar to Route Alternatives 2, 4, and 4-A, and potentially two fewer trainsets are required than Route Alternative 1.

6.4.8 Environmental Concerns: Environmental Impacts

The environmental resources present within the estimated existing ROW and buffer for Route Alternative 5 are identified in Table 6-4.

Table 6-4. Route Alternative 5 Environmental Resources within ROW and Buffer

Environmental Resource	Resources within ROW and Buffer
Named Streams	48 streams (74 stream crossings; 19,000 feet of streams)
Floodplain	Mississippi and Missouri River: 160 acres
Wetlands	340 wetlands (210 acres)
Farmland	2,030 acres
Threatened and Endangered Species Critical Habitat	None
NRHP-listed Properties	2 properties: • Chicago, Burlington, & Quincy Depot in Red Oak, Iowa • Chicago, Rock Island, & Pacific Railroad Passenger Depot in Council Bluffs, Iowa
Potential Section 4(f) (may also be Section 6(f)) Properties	25 properties: • 4 forest preserves in Illinois • 1 state forest and 1 WMA in Iowa • 2 county parks in Iowa • 15 city parks in Illinois • The aforementioned NRHP-listed sites
Superfund NPL sites	3 sites: • Iowa Army Ammunition Plant in Burlington, Iowa • Fairfield Coal Gasification Plant in Fairfield, Iowa • Omaha Lead Site in Omaha, Nebraska

The area along Route Alternative 5 in the Chicago urban area (from Chicago to Montgomery, Illinois) is a mix of industrial, commercial, and moderately to densely developed residential area. Other substantial residential areas in close proximity to Route Alternative 5 are located in Plano and Galesburg, Illinois. The urban areas of Somonauk, Mendota, Princeton, and Kewanee, Illinois; and Burlington, Mount Pleasant, Fairfield, Ottumwa, Osceola, Red Oak, Glenwood, and Council Bluffs, Iowa, are all a mix of industrial, commercial, and open space areas, with no substantial urban areas near the rail corridor. The closest residential area near the existing Amtrak Station in Omaha is located about 400 feet south of the rail line.

6.4.9 Environmental Concerns: Right-of-Way

Existing ROW was assumed to be 100 feet along the entire 496-mile route alternative. An estimated 50-foot buffer on the south side of existing ROW was assumed to be needed for Route Alternative 5, resulting in approximately 3,000 acres of new ROW that would be required. Of the ROW that would likely be acquired, approximately 850 acres are located in urban areas, and approximately 2,150 acres are located in rural areas.

6.5 ROUTE ALTERNATIVE 4-A

Route Alternative 4-A is composed of Route Alternative 5 between Chicago and Wyanet, Illinois, and Route Alternative 4 between Wyanet and Council Bluffs. This route alternative is 474 miles long between Chicago Union Station and Council Bluffs.

6.5.1 Purpose and Need: Travel Demand

Route Alternative 4-A would serve the intermediate major communities of Naperville and Moline, Illinois (one of the Quad Cities), and Iowa City and Des Moines, Iowa, which are the same communities served by Route Alternative 4 with the exception of Naperville, which is served by Route Alternative 5. The total population within 20 miles of these intermediate stops is approximately 1,034,000, the same population as Route Alternative 4. Annual ridership and revenue from tickets sold for an assumed initial operation year of 2020 were forecast as:

- 680,000 to 795,000 riders and $24.2 to $28.3 million for 79 mph service
- 735,000 to 855,000 riders and $26.4 to $30.8 million for 90 mph service
- 800,000 to 935,000 riders and $29.1 to $33.9 million for 110 mph service

Ridership and revenue from tickets sold are the highest of the route alternatives. Route 4-A meets the purpose and need for travel demand.

6.5.2 Purpose and Need: Competitive and Attractive Travel Modes

Route Alternative 4-A has travel times that are the second fastest, and is competitive with personal auto between Chicago and Omaha. Consequently, Route Alternative 4-A meets the purpose and need of providing a competitive and attractive travel mode. Route Alternative 4-A provides modal interconnectivity at all of its intermediate cities and serves Chicago Union Station, thus meeting the purpose and need for modal interconnectivity.

6.5.3 Technical Feasibility: Passenger and Freight Capacity

Route Alternative 4-A originates at Chicago Union Station, the proposed hub of the Midwest Regional Rail System, and provides a triple-track route as far west as Aurora, the western end of commuter-rail service. This trackage is highly constrained by commuter-train capacity and may require additional infrastructure to accommodate the proposed Chicago-Omaha passenger trains. Slots in the commuter schedules for Chicago-Omaha passenger trains may not be feasible, and schedules for Chicago-Omaha service may have to be designed to fit around commuter schedules. Freight trains are generally constrained by commuter-train schedules. Track time for maintenance in the commuter-train territory may be constrained by the addition of Chicago-Omaha trains, requiring night-time track maintenance.

Route Alternative 4-A is a high-density double- and triple-main-track commuter and freight rail line from Chicago to Aurora, with 64 weekday commuter trains at present and up to 50 freight trains per day, as well as four Amtrak long-distance and four Amtrak regional passenger trains daily. From Aurora to Wyanet, Illinois, the route has moderate-density freight traffic and eight Amtrak trains per day, but freight traffic includes coal trains that are frequently staged in this section on one of the two main tracks, while awaiting connection or commuter-train slots in Chicago. From Wyanet west through the Quad Cities to Homestead Junction, Iowa, approximately 20 miles west of Iowa City, Route Alternative 4-A is a moderate-density, moderate-speed (40 mph) freight-only railroad. At Homestead Junction, freight traffic from the industrialized Cedar Rapids area enters the route for movement east. The Quad Cities is heavily congested as three railroads (IAIS, BNSF, and CP) converge to switch industries and interchange cars on a single main track that also serves as the switch lead to two yards.

West of Homestead Junction, Route Alternative 4-A is low-density except at Des Moines, where it crosses Union Pacific Railroad's "Spine Line" that runs between Kansas City and Minneapolis-St. Paul, in a rail terminal that has considerable congestion caused by industrial switching, yard switching, and interchange. Many freight trains operating on this route alternative exceed the length of the sidings, and freight/train meet/pass events are often conducted at terminals instead of at sidings. As part of the operations analysis conducted in 2010 in support of the Chicago to Iowa City High Speed Rail Service Development Plan, it was determined that the line was at capacity for the existing freight traffic between Wyanet and Iowa City, and the addition of two round trip passenger trains would tax the existing system and require the addition of several sidings and a second main track through the Quad Cities Terminal.

Route Alternative 4-A's present-day track and train-control infrastructure is matched to its freight speeds and traffic density. CTC is active from Chicago to Wyanet on this two-main-track, and generally straight and flat portion of the route. From Wyanet to Council Bluffs, the wayside signal system has been deactivated and trains are operated by TWC. West of Wyanet, sidings of sufficient length to meet-and-pass freight trains are located at 25- to 50-mile spacing; however, most sidings and the parallel main track at siding locations have industry leads off them and thus are used also for switching industries. Grades on Route Alternative 4-A are moderate and curvature is light, except between Des Moines and Atlantic, Iowa.

Route Alternative 4-A would likely require the addition of a third main track from Aurora to Wyanet, and a second main track from Wyanet to Homestead Junction, to afford sufficient capacity for passenger trains to have the desired speed and reliability, and to enable freight trains to continue to serve industries. Between Homestead Junction and Council Bluffs, a second main track may only be required in locations where industries are located, with sidings of sufficient length for freight trains at intervals sufficient for efficient operation of freight trains, as well as second main track through the Des Moines terminal. Because there are numerous at-grade crossings on this route alternative, sidings cannot hold freight trains for long periods of time for passenger train meet/pass events. It may be more feasible to construct long sections of second main track, instead of sidings, so that freight trains can make rolling meets with passenger trains and avoid blocking crossings for extended periods of time.

6.5.4 Technical/Economic Feasibility: Alignment

The alignment for this route alternative is favorable for high speed rail except between Des Moines and Atlantic, Iowa, where it is moderately curved. The most favorable characteristic is that between Wyanet and West Liberty, Iowa (approximately 15 miles east of Iowa City), the route was expanded to two main tracks in the 1900-1950 era, but one track has since been removed. Though the proposed second track would be approximately 20 to 25 feet from the existing track, the original embankment could be incorporated as part of the new earthwork, thus generating potentially substantial savings.

West of West Liberty, entirely new embankment would have to be constructed for the second track. Unlike Route Alternatives 2 and 5, however, because there is only one track currently in existence, there is no need for an access road between tracks in this segment; both the existing and new tracks could be accessed from their respective sides of the ROW.

6.5.5 Technical/Economic Feasibility: Structures

Route Alternative 4-A presents a favorable situation with respect to major structures, with only one major structure, the double-track, swing-span, Government Bridge across the Mississippi River. A new structure across the Mississippi River is likely to not be required because the existing bridge has two tracks, though the second track is not at present in place across the fixed approach spans. Detailed analysis of the main Mississippi River span and approach spans has not been conducted to determine their continued long-term capability for service without substantial repair, rehabilitation, or replacement, but during the prior Chicago-Iowa City study work, no serious issues were identified.

At the moveable span itself, a small section of second track remains. This is crucial because this track would likely be “grandfathered” with respect to marine clearance requirements, meaning that no clearance variance would be required here as would likely be required by the U.S. Coast Guard for additional tracks across the Mississippi River on Route Alternatives 1, 2 and 5. All the more important is the fact that constructing a new moveable span would be, by far, the most expensive portion of a new structure.

Unlike many of the other route alternatives, a major structure would likely be required at Des Moines, to provide a grade separation of Route Alternative 4-A with the north-south oriented UP Spine Line that at present crosses Route Alternative 4-A at grade, and also serves a large regional classification yard. This intersection is heavily used at present, with many trains each day on the UP route, and continuous switching of UP’s Des Moines yard and industries. Construction of a grade separation may require replacement of lost yard capacity track if there is insufficient room for the new track and approaches.

6.5.6 Technical/Economic Feasibility: Grade Crossings

Grade crossings on Route Alternative 4-A present no exceptional challenges when compared to other route alternatives, except in the Chicago-Wyanet portion. Because many of the grade crossings of Route Alternative 4-A already have roadway geometry and side entrances arranged for the now-missing second main track, it is expected that the addition of a second main track at grade crossings at a 25-foot track center would not be a major technical hurdle. The existing two-main-track section from Aurora to Wyanet has a relatively low number of grade crossings, avoiding much of the expense and challenge that obtains to Route Alternatives 2 and 5 as a whole. While there would be impacts on the existing grade-crossing circuitry and the roadway profiles for the addition of an additional main track, the costs would be modest compared to modifications on Route Alternatives 4 and 5 where a substantial number of new, three-track grade crossings with tracks at up to 45-foot centers would be necessary.

6.5.7 Economic Feasibility

The economic feasibility of Route Alternative 4-A is favorable compared to other route alternatives and is approximately $147,200,000 more than Route Alternative 4, the least expensive route alternative. This is chiefly because:

- The addition of third main track is limited to the Aurora-Wyanet portion
- Where a second main track is added to an existing single main track, the new main track could be at 25-foot centers while still allowing for maintenance access to each track, translating to lower construction complexity and thus lower construction costs than those route alternatives that currently have two tracks and would require a third track at 45-foot track centers.
- The existing Mississippi River Bridge is double-track.
- Only one major structure is likely to be required: a grade-separation at Des Moines.
- East of Wyanet, Illinois, Route Alternative 4-A would be more complex because the existing ROW between Chicago Union Station and Aurora, Illinois, is constrained; an additional track would require ROW acquisition.

Note that Route Alternative 4-A's cost does not include a connection to Chicago Union Station.

Route Alternative 4-A has no outstanding operating, maintenance, or equipment cost differentiators compared to Route Alternatives 1, 2, and 5, and is substantially shorter than Route Alternative 1. Trainset equipment turn analysis indicates that trainsets would average about 1.5 turns per day on this route alternative. Trainset requirements are similar to Route Alternatives 2, 4, and 5, and potentially two fewer trainsets are required than Route Alternative 1.

6.5.8 Environmental Concerns: Environmental Impacts

The environmental resources present within the estimated existing ROW and buffer for Route Alternative 4-A are identified in Table 6-5.

Table 6-5. Route Alternative 4-A Environmental Resources within ROW and Buffer

Environmental Resource	Resources within ROW and Buffer
Named Streams	39 streams (44 stream crossings; 9,000 feet of streams)
Floodplain	Mississippi and Missouri River: 41 acres
Wetlands	220 wetlands (120 acres)
Farmland	1,370 acres
Threatened and Endangered Species Critical Habitat	1 Topeka shiner stream
NRHP-listed Properties	8 properties: • Colonel Joseph Young Block in Davenport, Iowa • Littig Brothers Eagle Brewery in Davenport, Iowa • City Market in Davenport, Iowa • Bonaventura Heinz House in Davenport, Iowa • Adair Viaduct in Adair, Iowa • Chicago, Rock Island & Pacific Railroad Passenger Station in Iowa City, Iowa • Chicago, Rock Island, & Pacific Railroad Depot in Wilton, Iowa • Chicago, Rock Island, & Pacific Railroad Passenger Depot in Council Bluffs, Iowa
Potential Section 4(f) (may also be Section 6(f)) Properties	36 properties: • 4 forest preserves in Illinois • 17 city parks in Illinois • 7 city parks in Iowa • The aforementioned NRHP-listed sites
Superfund NPL sites	3 sites: • Des Moines TCE in Des Moines, Iowa • Railroad Avenue Groundwater Contamination in Des Moines, Iowa • Omaha Lead Site in Omaha, Nebraska

The area along Route Alternative 4-A in the Chicago urban area (from Chicago to Montgomery, Illinois) is a mix of industrial, commercial, and moderately to densely developed residential area. Other substantial residential areas in close proximity to Route Alternative 4-A are located in Plano, Silvis, East Moline, and Moline, Illinois; and Davenport, Iowa City, and Grinnell, Iowa. Route Alternative 4-A passes through mostly industrial or lightly developed areas in Geneseo, Somonauk, Mendota, and Princeton, Illinois; and Newton, Des Moines, Atlantic, and Council Bluffs, Iowa. The closest residential area near the existing Amtrak Station in Omaha is located about 400 feet south of the rail line.

6.5.9 Environmental Concerns: Right-of-Way

Existing ROW was assumed to be 100 feet along the entire 474-mile route alternative. An estimated 50-foot buffer on the south side of existing ROW from Chicago to Wyanet, Illinois, and a 35-foot buffer on the north side of existing ROW from Wyanet, Illinois, to Omaha was assumed to be needed for Route Alternative 4-A, resulting in approximately 2,200 acres of new ROW that would be required. The potential ROW needed for a connection at Wyanet between IAIS and BNSF track was included in the buffer. Of the ROW that would likely be acquired, approximately 800 acres are located in urban areas, and approximately 1,400 acres are located in rural areas.

6.6 NO-BUILD ALTERNATIVE

The No-Build Alternative would result in the continued extensive use of automobiles, as well as airplane and bus transportation, along the Chicago to Omaha corridor. Additionally, Amtrak's *California Zephyr* would continue along the corridor, and other passenger rail projects could develop service along sections of the corridor.

6.6.1 Purpose and Need: Travel Demand

The No-Build Alternative would not meet travel demand for passenger rail service along the Chicago to Omaha corridor because no additional transportation service would be provided.

6.6.2 Purpose and Need: Competitive and Attractive Travel Modes

The No-Build Alternative would not meet the need for competitive and attractive travel modes between Chicago and Omaha because no new mode would be provided. The Project would not exist as an option to spur more competition among existing travel modes.

6.6.3 Technical Feasibility: Passenger and Freight Capacity

The No-Build Alternative cannot be evaluated for technical feasibility of passenger and freight capacity because the Project would not be constructed. Other passenger rail sections of the Chicago to Omaha corridor would be evaluated for technical feasibility for passenger and freight capacity on their own merits as independent projects.

6.6.4 Technical/Economic Feasibility: Alignment

The No-Build Alternative cannot be evaluated for technical feasibility of alignment because the Project would not be constructed. Other passenger rail sections of the Chicago to Omaha corridor would be evaluated for technical feasibility of alignment on their own merits as independent projects.

6.6.5 Technical/Economic Feasibility: Structures

The No-Build Alternative cannot be evaluated for technical feasibility of structures because the Project would not be constructed. Other passenger rail sections of the Chicago to Omaha corridor would be evaluated for technical feasibility of structures on their own merits as independent projects.

6.6.6 Technical/Economic Feasibility: Grade Crossings

The No-Build Alternative cannot be evaluated for technical feasibility of grade crossings because the Project would not be constructed. Other passenger rail sections of the Chicago to Omaha corridor would be evaluated for technical feasibility of grade crossings on their own merits as independent projects.

6.6.7 Economic Feasibility

The No-Build Alternative cannot be evaluated for economic feasibility because the Project would not be constructed. However, Under the No-Build Alternative, other passenger rail sections of the Chicago to Omaha corridor could be independently determined to be economically feasible.

6.6.8 Environmental Concerns: Environmental Impacts

The Project would not be constructed under the No-Build Alternative, and not present major environmental challenges or impact sensitive areas. However, the current rail routes between Chicago and Omaha would continue to be used, resulting in continued minor environmental impacts such as air emissions, erosion and sedimentation from railroad grades to adjacent waterbodies and wetlands, and noise. Other modes of transportation would continue to be used and would likely be more congested in the future as travel demand increases, resulting in potential impacts to sensitive areas.

6.6.9 Environmental Concerns: Right-of-Way

The Project would not be constructed under the No-Build Alternative, and not require acquisition of ROW. However, other passenger rail sections of the Chicago to Omaha corridor could be developed and result in acquisition of ROW. Additionally, other travel modes could be more congested as travel demand increases, resulting in ROW acquisition for infrastructure improvements.

6.7 SUMMARY

The fine-level screening of the five route alternatives and the No-Build Alternative based on ability to meet purpose and need, environmental concerns, and technical and economic feasibility is summarized below, followed by a comparison of route alternatives.

6.7.1 Purpose and Need

The No-Build Alternative would not meet purpose and need, and would result in no ridership or revenue from tickets sold outside of what could occur under independent passenger rail initiatives. Table 6-6 shows the ridership and revenue from tickets sold forecast for the five route alternatives carried forward into fine-level screening under the three proposed maximum speed regimes. This table indicates that Route Alternatives 2 and 5 do not meet the purpose and need for attracting an adequate number of riders to make the service viable. Route Alternative 1 does not attract sufficient riders in Iowa to make it a viable service. While Route Alternative 1 would have substantial short-distance ridership from Rockford to Chicago, the fare recovered for the short trip would not be adequate to make the service viable.

Table 6-6. Stage 1 Forecast Results for Proposed Chicago-Omaha Passenger Rail Options

Annual Forecast 2020	Route Alternative 1	Route Alternative 2	Route Alternative 4	Route Alternative 5	Route Alternative 4-A
Design Speed 79 mph, 5 Round Trips Daily					
Ridership (thousands)	505-590	375–440	640–745	255–295	680–795
Revenue [a] (millions 2012 $)	$15.2-$17.7	$14.7–$17.1	$22.9–$26.7	$11.2–$13.0	$24.2–$28.3
Design Speed 90 mph, 5 Round Trips Daily					
Ridership (thousands)	560–650	415–485	690–805	285–330	735–855
Revenue (millions 2012 $)	$17.0–$19.9	$16.3–$19.1	$24.9–$29.1	$12.5–$14.5	$26.4–$30.8
Design Speed 110 mph, 5 Round Trips Daily					
Ridership (thousands)	615–715	475–550	755–885	315–370	800–935
Revenue (millions 2012 $)	$19.0–$22.2	$18.9–$22.0	$27.6–$32.2	$14.3–$16.6	$29.1–$33.9

Note: [a] Revenue forecast is for revenue from ticket sales only.

The ridership and revenue forecasts are influenced by populations served at intermediate cities (which creates ridership and revenue between pairs of intermediate cities, as well as between endpoint and intermediate cities), and by running times of trains on each route alternative. Preliminary running times are summarized in Table 6-7. These running times vary from 5.5 hours to nearly 8 hours, depending upon the characteristics of the route alternative (e.g., curvature and length), and the selected desired maximum speed of passenger trains. Among all five route alternatives, the time savings of higher speeds, end-to-end, were similar: approximately 30 minutes for 90 mph compared to 79 mph, and an additional 30 minutes for 110 mph compared to 90 mph.

Table 6-7. Comparative Running Times

Speed Regime	Route Alternative 1	Route Alternative 2	Route Alternative 4	Route Alternative 5	Route Alternative 4-A
79 MPH	Base 79 + 43 minutes	Base 79	Base 79 + 17 minutes	Base 79 + 18 minutes	Base 79 + 4 minutes
90 MPH	Base 90 + 43 minutes	Base 90	Base 90 + 22 minutes	Base 90 + 16 minutes	Base 90 + 8 minutes
110MPH	Base 110 + 40 minutes	Base 110	Base 110 + 25 minutes	Base 110 + 13 minutes	Base 110 + 14 minutes

*Note: Running Times include station dwell times but do not include recovery time or potential allowances for delays at movable bridges over navigable waterways. Running Times are based on common conceptual parameters for infrastructure among all **r**oute **a**lternatives. Running Times will require validation upon development of preliminary infrastructure, and will be subject to the terms and conditions of Service Outcome Agreements that would be agreed upon among host railroad(s) and service operator(s).*

6.7.2 Technical Feasibility

The No-Build Alternative has no technical feasibility issues because no Project would be constructed; however, any independent passenger rail initiatives or improvements of other modes would be evaluated for technical feasibility on their own merits. The five route alternatives evaluated in the fine-level screening are similar in some respects. All cross similar geography between the end point cities and all are freight railroads with similar traffic types, but dissimilar traffic densities. However, the route alternatives have widely divergent technical feasibility. This divergence is driven by three factors:

- Length of route – greater length requires more infrastructure improvements for higher-speed passenger trains.
- Density of freight train traffic – greater density requires more challenging improvements to accommodate passenger trains, including impacts on bridges, grade crossings, and conflicts with industrial spurs
- Access to Chicago Union Station – route alternatives without direct access require complex and challenging connections to be constructed in a dense urban core

A brief summary of each route alternative's technical feasibility is provided below.

Route Alternative 1 would likely require:

- An additional main track for approximately two-thirds of its route
- Substantial challenges to constructing this main track for approximately 50 miles in northwestern Illinois and northeastern Iowa, in narrow, winding river valleys
- Potential construction of a tunnel near East Dubuque
- Potential construction of a new high-level bridge over the Mississippi River
- Substantially longer length of route, requiring higher costs for capital, operation, and maintenance
- Extensive earthwork to improve speeds in areas of heavy curvature

Route Alternative 2 would likely require:

- An additional third main track for nearly all of its length, an additional second main track for the remainder, and fourth main track for passenger/passenger meet/pass events
- Significant challenges to constructing this main track, for ROW, reconfiguration or relocation of industrial tracks or industries, grade crossings, and grade separations
- Likely construction of new high-level bridges across the Mississippi and Des Moines rivers

Route Alternative 4 would likely require:

- An additional main track for approximately two-thirds of its route
- No substantial challenges to constructing this main track
- Potential construction of a rail/rail grade separation structure at Des Moines
- No requirement for a new high-level bridge over the Mississippi River
- A complex and potentially disruptive connection within the Chicago core in order to bring the route to Chicago Union Station
- Moderate earthwork to improve speeds in areas of moderate curvature

Route Alternative 5 would likely require:

- An additional third main track for nearly all of its length, an additional second main track for the remainder, and fourth main track for passenger/passenger meet/pass events
- Substantial challenges to constructing this main track, for ROW, reconfiguration or relocation of industrial tracks or industries, grade crossings, and grade separations
- Likely construction of new a high-level bridge across the Mississippi river

Route Alternative 4-A would likely require:

- An additional second main track for approximately one-half of its route
- An additional third main track for approximately one-tenth of its route
- Moderate challenges to constructing these additional main tracks
- Potential construction of a rail/rail grade separation structure at Des Moines
- Moderate earthwork to improve speeds in areas of moderate curvature

Route Alternative 4-A is the most technically feasible route because it has:

- The least challenging requirements for additional capacity
- Only one major structure of moderate complexity
- Nearly the shortest length
- Direct access to Chicago Union Station
- Nearly the least travel time

6.7.3 Economic Feasibility

The No-Build Alternative has no economic feasibility issues because no Project would be constructed; however, any independent passenger rail initiatives or improvements of other modes would be evaluated for economic feasibility on their own merits. The five route alternatives evaluated in the fine-level screening have widely divergent economic feasibility, driven by their technical feasibility and the resulting associated costs. Table 6-8 summarizes their economic feasibility by comparing their additive cost differences for implementation to Route Alternative 4 that had the lowest overall cost, and their additive forecast revenue differences.

Route Alternative 4 has the least relative implementation cost, and nearly the highest revenue, but does not access Chicago Union Station. Route Alternatives 4 and 4-A are the most economically feasible.

Table 6-8. Implementation Cost and Forecasted Revenue ($ millions) of Route Alternatives

	Route Alternative 1	Route Alternative 2	Route Alternative 4	Route Alternative 5	Route Alternative 4-A
Implementation Cost	Base + $550	Base + $1,005	Base	Base + $1,230.6	Base + $147.2
Forecasted Annual Revenue [a]	$15.2 to $22.2	$14.7 to $22.0	$22.9 to $32.2	$11.2 to $16.6	$24.2 to $33.9

Note: [a] Revenue forecast is for revenue from ticket sales only.

6.7.4 Environmental Concerns

No Chicago to Omaha Passenger Rail System Project would be constructed under the No-Build Alternative, and not result in construction impacts. However, the current rail routes between Chicago and Omaha would continue to be used, resulting in continued minor environmental impacts such as air emissions, erosion and sedimentation from railroad grades to adjacent waterbodies and wetlands, and noise. Other modes of transportation would continue to be used and would likely be more congested in the future as travel demand increases, resulting in potential impacts to sensitive areas. Other passenger rail sections of the Chicago to Omaha corridor could be developed and result in acquisition of ROW. Additionally, other travel modes could be more congested as travel demand increases, resulting in ROW acquisition for infrastructure improvements.

The environmental resources discussed below represent solely the resources within the estimated existing ROW and an estimated buffer of additional ROW that may need to be acquired and provide a conservative estimate of what the potential impacts would be for each of the route alternatives. As the design process proceeds for the one or more route alternatives carried forward for detailed evaluation in the Tier 1 EIS, a refined assessment of ROW needs would be established and potential impacts refined. Consequently, only environmental resources present in the estimated ROW and buffer can be identified during the fine-level screening process. There will be opportunities for impact avoidance and minimization through an interactive design and impact consideration process.

In addition to the general environmental conditions discussed in this analysis, each route alternative would present various technical challenges, requiring construction that would result in adverse environmental impacts along each route alternative. All of the route alternatives would need additional track for most or all of the length of the corridor from Chicago to Omaha.

Given all of the considerations discussed in Sections 6.1 to 6.5, Route Alternatives 2 and 5 would require the most complex construction and would likely have the most environmental impacts related to construction. Route Alternative 1 would be somewhat less complex than Route Alternatives 2 and 5. Route Alternatives 4 and 4-A have the least complex construction requirements.

The fine-level screening of several environmental resources indicates that Route Alternative 4-A would likely result in the fewest overall environmental impacts based on the relatively low amount of resources present within the estimated ROW and buffer considering likely construction requirements and the environmental setting, followed by Route Alternatives 4, 5, 2, and 1. Table 6-9 illustrates a comparison of the route alternatives

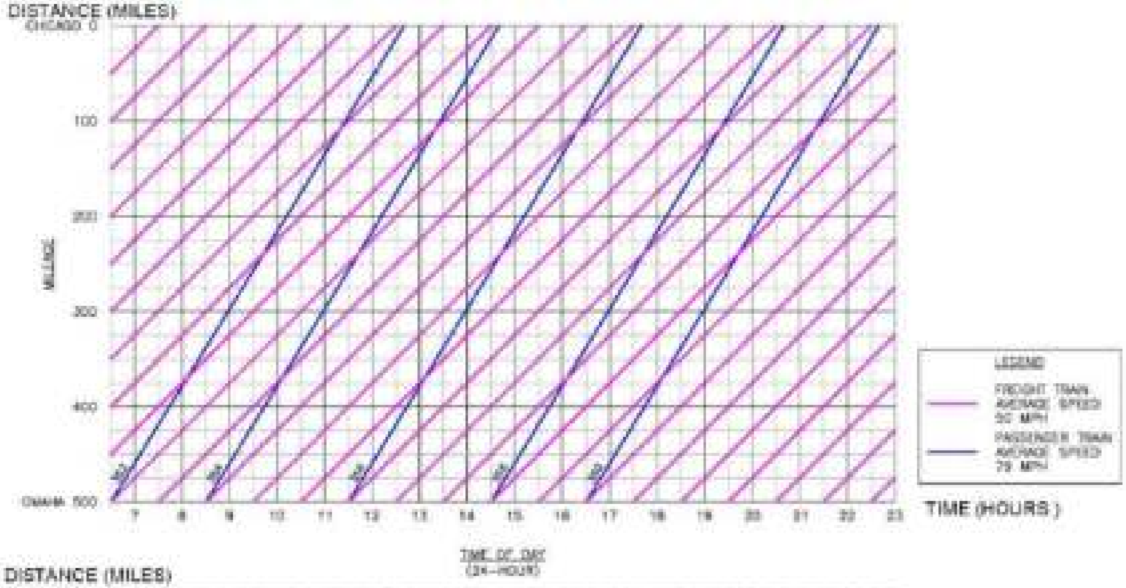
Although Route Alternative 4-A could potentially impact slightly more Section 4(f) and Section 6(f) resources than other alternatives, the analysis was based on a buffer without conceptual engineering, allowing flexibility in design to avoid or minimize impacts on the resources. Because Illinois forest preserves, which are considered to be a Section 4(f) resource, exist on both sides of the railroad ROW for all route alternatives, the potential exists for all route alternatives to impact Section 4(f) properties. Considering potential impacts on all resources, Alternative 4-A is likely to have the least overall impact to environmental resources.

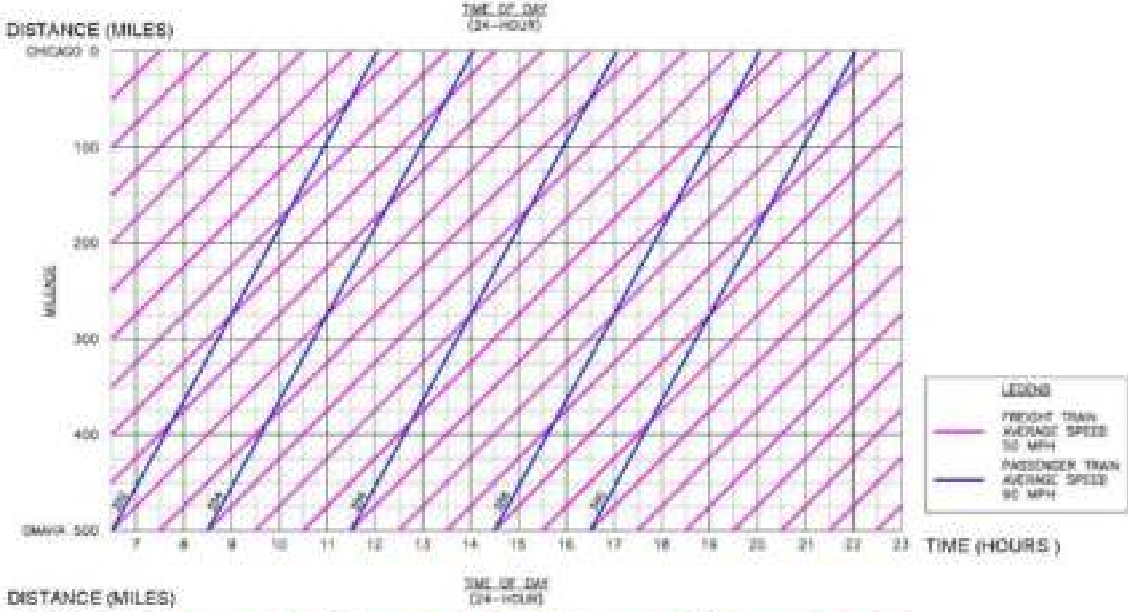
Route Alternative 2 would potentially require the most acres of ROW, followed by Route Alternatives 5, 4-A, 1, and 4. Route Alternative 2 would require the most urban acres, followed by Route Alternatives 5, 4-A, 4, and 1.

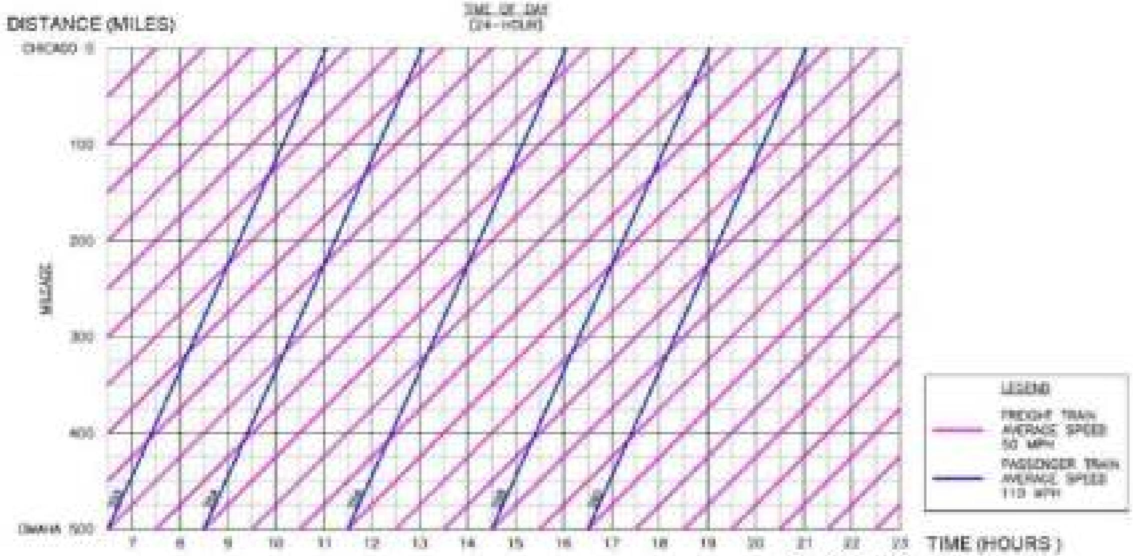
Table 6-9. Environmental Resources within ROW and Buffer for Route Alternatives

Criteria	Resources within ROW and Buffer				
	Route Alternative 1	Route Alternative 2	Route Alternative 4	Route Alternative 5	Route Alternative 4-A
Named Stream Count	42 (67 crossings)	29 (45 crossings)	41 (52 crossings)	48 (74 crossings)	39 (44 crossings)
Stream Length (ft)	22,000	10,700	21,200	19,000	9,000
Floodplain Acres (Mississippi and Missouri Rivers only)	190	60	40	160	40
Wetland Count	260	320	280	340	220
Wetland Acres	190	250	190	2109	120
Farmland Acres	1,500	2,120	1,240	2,030	1,370
Threatened and Endangered Species Critical Habitat	4 Topeka shiner streams	4 Topeka shiner streams	1 Topeka shiner stream	None	1 Topeka shiner stream
Cultural Resources (historic sites)	3	3	9	2	8
Section 4(f)/6(f) Properties	29	31	27	25	36
Hazardous Materials	5 Superfund sites	4 Superfund sites	7 Superfund sites	3 Superfund sites	3 Superfund sites

Note: Data was estimated by counting resource items within a buffer applied to approximate ROW boundaries. Consequently, the data estimated represent preliminary, approximate values and was rounded for several resources with more than 100 counts per resource category.







KEY ASSUMPTIONS:
- FREIGHT TRAINS OPERATE AT CONSISTENT SPEEDS
- FREIGHT TRAINS ARE EQUALLY SPACED THROUGHOUT THE DAY, EVERY DAY
- NO MAINTENANCE OF WAY WORK WINDOWS
- FREIGHT TRAINS ARE NOT SLOWED BY ADVERSE GRADES
- FREIGHT TRAINS ARE NOT DELAYED BY PASSENGER TRAINS

Iowa Department of Transportation

Iowa Connections

Get on Board

Freight Train Overtke Events Required at Different Passenger Train Speeds

Chicago to Council Bluffs-Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
6-1

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CHAPTER 7
REASONABLE AND FEASIBLE ALTERNATIVES CARRIED FORWARD

This report evaluates and screens the range of route alternatives which could potentially be utilized to provide intercity passenger rail service between Chicago and Omaha in order to identify the reasonable and feasible route alternatives to be carried forward for detailed consideration in the Tier 1 EIS. As described in Chapter 3, a total of six route alternatives made up the universe of potential route alternatives which were evaluated and screened in this Alternatives Analysis. The six route alternatives include five previously established rail corridors (Route Alternative 1 through Route Alternative 5) and one combination (Route Alternative 4-A). The screening process (described in Chapter 4) for evaluating, and eventually selecting one or more route alternatives for carrying forward for detailed consideration, relied on the following four broad screening criteria:

- Meeting the purpose and need for passenger rail service between Chicago and Omaha
- Environmental concerns
- Technical feasibility
- Economic feasibility

The screening was conducted in two steps. The first step, described in Chapter 5, was a coarse-level screening to identify if any of the route alternatives had major flaws or challenges that render the particular route alternative infeasible. The second step, described in Chapter 6, was a fine-level screening, during which more detailed engineering and cost information, ridership and revenue information, and environmental information were developed and evaluated for each of the route alternatives carried forward from the coarse-level screening.

7.1 RESULTS FROM THE COARSE-LEVEL SCREENING

The coarse-level screening concluded that one of the six route alternatives, Route Alternative 3, was not reasonable or feasible. Route Alternative 3 is route alternative, where a substantial portion of the former rail line is abandoned, the tracks removed and the former rail ROW reclaimed and reused. Route Alternative 3 would require the redevelopment of approximately 225 miles of abandoned railroad ROW with significant landowner, environmental and cost impacts. The remaining five route alternatives were carried forward for more detailed consideration in the fine-level screening.

7.2 RESULTS FROM THE FINE-LEVEL SCREENING

The fine-level screening concluded that of the remaining five alternatives carried forward from the coarse-level screening, four are not reasonable or feasible. Each of the route alternatives are discussed below. Table 7-1 provides a side-by-side comparison of each of the route alternatives.

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Table 7-1. Route Alternative Comparison

Criteria	Relative Ranking of Route Alternative					
	Route Alternative 1	Route Alternative 2	Route Alternative 4	Route Alternative 5	Route Alternative 4-A	No-Build Alternative
Purpose and Need: Travel Demand	774,000 total population served	523,940 total population served	1,034,000 total population served	167,000 total population served	1,034,000 total population served	No additional service
Ridership Forecast	505,000 to 715,000	375,000 to 550,000	640,000 to 885,000	255,000 to 370,000	680,000 to 935,000	None
Revenue Forecast	$15.2 to $22.2 million	$14.7 to $22.0 million	$22.9 to $32.2 million	$11.2 to $16.6 million	$24.2 to $33.9 million	None
Preliminary Running Time	• Base 79 + 43 minutes • Base 90 + 43 minutes • Base 110 + 40 minutes	• Base 79 • Base 90 • Base 110	• Base 79 + 17 minutes • Base 90 + 22 minutes • Base 110 + 25 minutes	• Base 79 + 18 minutes • Base 90 + 16 minutes • Base 110 + 13 minutes	• Base 79 + 4 minutes • Base 90 + 8 minutes • Base 110 + 14 minutes	Not Applicable
Purpose and Need: Competitive and Attractive Travel Modes	• 516 miles long • Excessive travel time	• 479 miles long • Competitive travel time	• 490 miles long • Competitive travel time • Lack of connection to Chicago Union Station	• 496 miles long • Competitive travel time	• 474 miles long • Competitive travel time	No new travel mode
Technical Feasibility: Passenger and Freight Capacity	• New Mississippi River Bridge • Freight congestion Dubuque terminal • Partial second main track	• New Mississippi River Bridge • New third main track entire distance	• Freight congestion Des Moines terminal • Partial second main track	• New Mississippi River Bridge • New third main track entire distance	• Freight congestion Des Moines terminal • Partial second and third main track	No change to existing capacity

Criteria	Relative Ranking of Route Alternative					
	Route Alternative 1	Route Alternative 2	Route Alternative 4	Route Alternative 5	Route Alternative 4-A	No-Build Alternative
Technical/ Economic Feasibility: Alignment	• Heavy curvature on approaches to Mississippi River valley • Moderate curvature in Iowa • Heavy earthwork requirements on approaches to Mississippi River valley	• Light curvature • Heavy earthwork requirements to add third main track	• Moderate curvature along Illinois River • Moderate curvature between Des Moines and Atlantic • Moderate earthwork requirements	• Light curvature • Heavy earthwork requirements to add third main track	• Moderate curvature between Des Moines and Atlantic • Moderate earthwork requirements	• No change to existing alignments
Technical/ Economic Feasibility: Structures	• New or improved East Dubuque Tunnel • New Mississippi River bridge	• New Mississippi and Des Moines (Kate Shelly) bridges	• Grade separation with UP at Des Moines	• New Mississippi River bridge	• Grade separation with UP at Des Moines	• No changes to structures
Technical/ Economic Feasibility: Grade Crossings	High number of grade crossings, but not technically complicated	Substantial challenges at each grade crossing	High number of grade crossings, but not technically complicated	Substantial challenges at each grade crossing	High number of grade crossings, but not technically complicated	No changes to grade crossings
Economic Feasibility:	Base + $550 million	Base + $1,005 million	Base	Base + $1,230.6 million	Base + $147.2 million	Not applicable
Environmental Concerns: Environmental Impacts	No unreasonable environmental resource issues identified	No unreasonable environmental resource issues identified	No unreasonable environmental resource issues identified	No unreasonable environmental resource issues identified	No unreasonable environmental resource issues identified	No unreasonable environmental resource issues identified
Environmental Concerns: Right-of-Way	2,200 acres needed (600 urban/1,600 rural)	3,200 acres needed (950 urban/2,250 rural)	2,100 acres needed (800 urban/1,300 rural)	3,000 acres needed (850 urban/2,150 rural)	2,200 acres needed (800 urban/1,400 rural)	None
Meets Purpose and Need	**No**	**No**	**No**	**No**	**Yes**	**No**
Carried forward	**No**	**No**	**No**	**No**	**Yes**	**Yes**[a]

Note: [a] While the No-Build Alternative does not meet purpose and need, it is carried forward to provide a basis of comparison to any route alternative (40 CFR 1502.14; 64 FR 28545).

7.2.1 Route Alternative 1

Route Alternative 1 did not meet the purpose and need for the Project because it would not attract the necessary ridership from Iowa communities and the Omaha/Council Bluffs metropolitan area to generate adequate revenue. In addition, because this route alternative is longest and slowest of the route alternatives, it would not offer a competitive travel time, and because of its length, Route Alternative 1 would have excessive operations and maintenance costs. Route Alternative 1 also did not meet the technical/economic criteria because it would require a major new structure over the Mississippi River and its costs were excessive compared to the base case of preliminary cost estimates for improvement of Route Alternative 4, which had the least expensive costs. Route Alternative 1 was determined to be neither reasonable nor feasible.

7.2.2 Route Alternative 2

Despite the fact that it has the shortest travel time, Route Alternative 2 did not meet the purpose and need for the Project because it would not attract adequate ridership or generate the necessary revenue to make the service viable. Route Alternative 2 also did not meet the technical/economic criteria; it would require extensive new ROW and a major new structure over the Mississippi River. Route Alternative 2 did not meet the economic criterion because of the excessive capital cost requirements. Route Alternative 2 would cost approximately $1 billion more than the base case, without providing any additional service or ridership benefits. Route Alternative 2 was determined to be neither reasonable nor feasible.

7.2.3 Route Alternative 3

Route Alternative 3 was eliminated during the coarse-level screening.

7.2.4 Route Alternative 4

Route Alternative 4 does not meet the purpose and need for the project because the Chicago termini of Route Alternative 4 is at LaSalle Street Station instead of Chicago Union Station and provides substantially less modal interconnectivity at Chicago. It would not provide for the connection to the MWRRI high-speed network, which is connected through the Chicago hub at Chicago Union Station. This connection would be costly, have impacts on urban areas that the connection would be constructed through, and is not practical.

Route Alternative 4 was the least costly (not accounting for a connection from La Salle Street Station to Chicago Union Station) and was considered to represent the base case for a comparison of preliminary costs of the different route alternatives, and it would attract adequate ridership and would generate adequate revenue. However, based on the lack of a connection from La Salle Street Station to Union Station, and the associated cost and impacts of constructing a connection, Route Alternative 4 was determined to be neither reasonable nor feasible.

7.2.5 Route Alternative 5

Route Alternative 5 did not meet the purpose and need for the Project because it would not attract adequate ridership or generate the necessary revenue to make the service viable. Route Alternative 5 also did not meet the technical/economic criteria; it would require extensive new ROW and a major new structure over the Mississippi River. Route Alternative 5 did not meet the economic criterion because of the excessive capital cost requirements. Route Alternative 5 would cost approximately $1.2 billion more than the base case, without providing any additional service or ridership benefits. Route Alternative 5 was determined to be neither reasonable nor feasible.

7.2.6 Route Alternative 4-A

Route Alternative 4-A fully meets the purpose and need for the Project. In consideration of meeting the purpose and need and other criteria, Route Alternative 4-A was determined to be reasonable and feasible. This route alternative is fully compatible with the route for Chicago to Iowa City service, which received a FRA service development grant award and is being actively pursued and developed by Illinois DOT. Route Alternative 4-A will be carried forward for evaluation in the Tier 1 EIS.

7.2.7 No-Build Alternative

The No-Build Alternative did not meet purpose and need for the Project because it would not provide any additional service or a new travel mode. There would be no change to existing capacity, alignment, structures, or grade crossings. However, to meet NEPA requirements for evaluating No Action and to serve as a baseline for comparing impacts of a route alternative, this alternative will be carried forward for evaluation in the Tier 1 EIS.

7.3 REASONABLE AND FEASIBLE ALTERNATIVES

Route Alternative 4-A will be carried forward for analysis in the Tier 1 EIS because, when compared to other route alternatives considered, it:

- Meets project purpose and need (purpose and need)
- Has relatively low construction complexity and relatively low construction costs (technical and economic feasibility)
- Has grade-crossing complexity similar to all route alternatives (technical feasibility)
- Does not appear to require a new bridge over the Mississippi River (technical and economic feasibility)
- Is the shortest route alternative (purpose and need)
- Has a competitive passenger-train travel time (purpose and need)
- Serves the largest population (purpose and need)
- Has the highest ridership and farebox revenue forecast (purpose and need, and economic feasibility)
- Has direct access to Chicago Union Station (technical and economic feasibility)
- Has no unreasonable environmental resource issues (environmental concerns)

The No-Build Alternative will also be carried forward for analysis in the Tier 1 EIS because evaluation of No Action is required by NEPA, and the alternative serves as a basis of comparison for likely impacts of constructing and operating the Chicago to Council Bluffs-Omaha Regional Rail Passenger System along Route Alternative 4-A.

Route Alternative 4-A is fully compatible with the selected route for Chicago to Iowa City intercity passenger rail service, which received an FRA service development grant award and is being actively pursued and developed by Illinois DOT. The Tier 1 EIS will evaluate various implementation alternatives of Route Alternative 4-A to incorporate the decisions made on by FRA and Illinois DOT concerning infrastructure improvements on the Chicago to Iowa City corridor. The Tier 1 EIS will also evaluate the reasonable alignment options in the Des Moines, Iowa, vicinity to accommodate the freight traffic interference with the at-grade UP Railroad crossing while still providing the passenger service benefits. In addition, the Tier 1 EIS will evaluate the reasonable alternatives for connecting the new passenger rail service between Council Bluffs, Iowa and Omaha, Nebraska.

The Tier 1 EIS will also evaluate the various service levels and station locations (Table 7-2). With respect to service levels, the Tier 1 EIS will evaluate three possible speed regimes (79 mph, 90 mph, and 110 mph) and several different reasonable service frequencies for the passenger rail service. In addition, reasonable alternatives for cities to be served will also be evaluated in the Tier 1 EIS. The Tier 1 EIS analysis will provide a basis for selecting the service level (operating speed, station stops, and frequency) that will best meet the purpose and need for the new passenger rail service.

Table 7-2. Implementation Alternatives to be Evaluated in the Tier 1 EIS

Alternative Type	Parameter	Variation
Service Level	Speed	• 79 mph • 90 mph • 110 mph
	Frequency and Schedule	• 5 round trips /day • Variable frequency (6-7 round trips per day) • Intermediate station starts/stops • Express service options
	Stations and Communities Served	• Limited intermediate stops • Expanded intermediate stops
Configuration	Des Moines	• At-grade crossing of UP • Grade separation of UP • New alignment
	Council Bluffs/Omaha	• Missouri River Crossing Options – Council Bluffs • Missouri River Crossing Options - Blair

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CHAPTER 8
COMMENTS AND COORDINATION

After completion of the Draft Alternatives Analysis Report, the findings were presented through online and in-person meetings. Comments were received from resource agencies, organizations, and the public, and responses were provided as appropriate. This chapter summarizes the Alternatives Analysis meetings, the comments received, and the associated responses.

8.1.1 Alternatives Analysis Meetings

A set of three public information meetings was held in May 2012 to obtain input from the public on preliminary results from screening the initial range of route alternatives (see Figure 3-1). The Draft Alternatives Analysis Report was available for review on the Project website (http://chicagotoomaha.com/) the week of the meetings.

The public information meetings were conducted both through in-person open-house meetings held in three locations and through an online, self-directed open-house meeting. In-person meetings were conducted on Tuesday, May 1, 2012, at Chicago Union Station in Chicago, Illinois; Wednesday, May 2, 2012, at the State Historical Society Building in Des Moines, Iowa; and Thursday, May 3, 2012, at the Mid-America Center in Council Bluffs, Iowa. The in-person meetings were held from 4:00 to 7:00 p.m. each evening. The online open house meeting was available from May 1 through May 21, 2012, on the Project website. The in-person and online open-house meetings were hosted by Iowa DOT, which illustrated the various route alternatives, explained the process used to evaluate the route alternatives, discussed results of the alternatives analysis, and helped Iowa DOT, FRA, and Illinois DOT gain public input on the route alternatives. Based on sign-in sheets for the in-person meetings and automatic electronic login recordation for the online meeting, there were 163 in-person attendees and 5,177 online attendees.

In addition to the public information meetings, two Stakeholder Meetings were held with municipal representatives, elected officials, and community leaders. The Stakeholder Meetings were hosted by Iowa DOT from 1:00 to 3:00 p.m. on Wednesday, May 2, 2012, at the State Library in Des Moines, Iowa, and on Thursday, May 3, 2012, at the Mid-American Center in Council Bluffs, Iowa. Formal invitations were sent to municipal representatives, elected officials, and community leaders asking them to meet with the project team to discuss the same information that was presented at the in-person and online open-house meetings.

8.1.2 Comments and Responses

During the comment period for the alternatives analysis, 208 comments were received from agencies, organizations, and the public. The majority of commenters noted that they would use the project and cited a variety of reasons, including personal or business travel. In addition,134 commenters noted their support for the Project, including a preference for Route Alternative 4 or Route Alternative 4-A, as well as potential economic benefits. Six comments were submitted by those who were not in support of the Project. Non-supportive comments cited the use of taxpayer money and the lack of a market for long-term use.

Comments were received from the following ten agencies and organizations:

- City of Mount Vernon, Iowa
- City of Van Meter, Iowa
- Greater Des Moines Partnership
- Illinois Department of Natural Resources
- Iowa Association of Railroad Passengers
- Metra Commuter Rail
- Metropolitan Area Planning Agency
- Nebraska Department of Environmental Quality
- ProRail Nebraska
- Sierra Club and River Action

Agency and organization comments were focused on various topics, including the following:

- Agency involvement in the project development process
- Current train traffic
- Freight rail
- Permitting requirements
- Public meeting locations
- Route preference
- Route selection process

In addition, 47 public commenters asked questions or brought up issues requiring individual responses. These comments focused on the following topics:

- Bus service
- Crime
- Current passenger rail service impact
- Denver, Colorado, service
- Document availability
- Economic impacts
- Highway improvements
- Missouri River crossing
- Project cost
- Project funding
- Public meeting locations
- Public meeting and other participation options
- Purpose and need

- Route selection
- Routes considered
- Relationship to existing service and other proposed service
- Station stops and facilities
- Train speed
- Vehicle diversions

A complete list of these comments and the associated responses is provided in Attachment E.

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CHAPTER 9
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ATTACHMENT A

FARE STRUCTURE

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Fare Structure

Route Alternative 1	Chicago	Elgin	Rockford	Dubuque	Waterloo	Fort Dodge
Rockford	13.00	8.00				
Dubuque	25.00	20.00	14.00			
Waterloo	37.00	32.00	26.00	14.00		
Fort Dodge	49.00	44.00	38.00	26.00	15.00	
Council Bluffs	59.00	59.00	56.00	44.00	32.00	19.00
Omaha	59.00	59.00	56.00	44.00	32.00	19.00
Route Alternative 2	Chicago	DeKalb	Clinton	Cedar Rapids	Ames	
Clinton	20.00	13.00				
Cedar Rapids	31.00	23.00	13.00			
Ames	45.00	38.00	27.00	16.00		
Council Bluffs	59.00	59.00	48.00	37.00	23.00	
Omaha	59.00	59.00	48.00	37.00	23.00	
Route Alternative 4	Chicago	Joliet	Moline	Iowa City	Des Moines	
Moline	25.00	21.00				
Iowa City	33.00	28.00	10.00			
Des Moines	48.00	44.00	25.00	18.00		
Council Bluffs	59.00	59.00	43.00	36.00	20.00	
Omaha	59.00	59.00	43.00	36.00	20.00	
Route Alternative 5	Chicago	Naperville	Galesburg	Burlington	Osceola	
Galesburg	23.00	20.00				
Burlington	29.00	25.00	8.00			
Osceola	48.00	44.00	25.00	18.00		
Council Bluffs	59.00	59.00	43.00	36.00	20.00	
Omaha	59.00	59.00	43.00	36.00	20.00	
Route Alternative 4-A	Chicago	Naperville	Moline	Iowa City	Des Moines	
Moline	25.00	21.00				
Iowa City	33.00	28.00	10.00			
Des Moines	48.00	44.00	25.00	18.00		
Council Bluffs	59.00	59.00	43.00	36.00	20.00	
Omaha	59.00	59.00	43.00	36.00	20.00	

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ATTACHMENT B

MODAL COMPARISON DOCUMENTATION

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Modal Comparison Summary

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Modal Comparison

This appendix details the capabilities, costs, and capacities of alternate travel modes between Chicago, Omaha, and major intermediate cities on the five route alternatives in the Corridor. Alternate travel modes include personal auto, commercial airline service, and commercial intercity bus service. In addition, the availability of intermodal connectivity at Chicago, Omaha, and the major intermediate cities is characterized.

Publically available information consulted included:

- Commercial airline and bus service data, such as timetables, pricing information, and descriptions of service, extracted from airline and bus line websites
- Databases from U.S. government sources such as the Bureau of Transportation Statistics
- Travel information websites published by Iowa and Illinois DOT, and the Illinois Tollway Authority
- Travel costs for personal autos allowed by the Internal Revenue Service, plus applicable tollway charges and parking.
- Distances for highway trips were assessed using Google Maps©.

A common basis was established for an assumed typical traveler to provide direct cross-mode comparisons between rail, personal auto, and commercial bus and airline services. The common basis is that the typical traveler is:

- One person per party
- Traveling for business reasons
- Trip is round-trip between the downtown districts of Omaha and Chicago
- Home terminal is Omaha
- No opportunity for adjusting travel dates (relative to a trip for entertainment or personal reasons) to optimize travel cost, modal congestion peaks, or inclement weather
- Little advance notice to optimize travel cost
- Time used for trip has an opportunity cost (work or other use of time could occur)
- Trip reliability (on-time performance, low risk of cancellation for any external cause) has high value
- Trip is intended to be overnight, business conducted in Chicago either afternoon of first day, or morning of second day
- Trip commences no earlier than 05:30 am, trip ends no later than 01:00 am following day (assuming not more than 1 hour travel time from home or place of business to location of air, bus, or rail service, and not more than 1 hour travel time from location of air, bus or rail service, to destination in Chicago).

Alternate Travel Mode Findings – Commercial Bus and Airline Service

Two commercial bus services offer service between Omaha and Chicago: Burlington Trailways and Megabus. Three airlines provide direct service between Omaha and Chicago: American Airlines, Southwest Airlines, and United Airlines. Commercial bus lines offer service to some but not all of the intermediate major urban areas on the various route alternatives, enabling travelers to travel directly between many of the city pairs that would be served by the various route alternatives. Nonstop airline service is also offered between Chicago and some of the intermediate major urban areas shown in Table B-1. Airline travel between Omaha and any of the intermediate cities on any of the route alternatives, or between any of the intermediate cities served by airlines, is indirect and requires at least two flights, with a connection in an airline hub city such as Chicago, Minneapolis, Denver, or Houston. Megabus offers direct city-to-city service between Omaha, Des Moines, Iowa City, and Chicago only. Burlington Trailways offers direct city-to-city service between most of the cities shown in Table B-1.

Table B-1. Commercial Air and Bus Service to Intermediate Cities Along the Route Alternatives

Location	Burlington Trailways	Megabus	American Airlines	Southwest Airlines	United Airlines
Ames, Iowa	X				
Aurora, Ill.					
Burlington, Ill.	X				
Cedar Rapids, Iowa	X				X
Clinton, Iowa					
Council Bluffs, Ill.	X				
De Kalb, Ill.					
Des Moines, Iowa	X	X	X	X	X
Dubuque, Iowa	X		X		
Elgin, Ill.					
Fort Dodge, Iowa					
Galesburg, Ill.	X				
Iowa City, Iowa	X	X			
Moline, Ill.	X		X		X
Joliet, Ill.	X				
Osceola, Iowa	X*				
Rockford, Ill.	X				
Savanna, Ill.					
Waterloo, Iowa	X		X		

Note:

** Burlington Trailways serves Knoxville and Ottumwa in lieu of Osceola.*

Alternate Travel Mode Service Summary

Cost, travel time, frequency of service (for commercial modes), and business-travel compatibility of each of the alternative transportation modes are described below. The cost basis is summarized for travel between Omaha and Chicago in Table B-2 below:

Table B-2. Summary of Alternate Travel Modes Between Omaha and Chicago

	Personal Auto	Commercial Bus Service via Burlington Trailways	Commercial Bus Service via Megabus	Commercial Airline Service
One-way cost	$280-$310	**Same day:** $71 Omaha to Chicago and Chicago to Omaha **2-week advance notice:** $40 Chicago to Omaha; $80 Omaha to Chicago	**Same day:** $46.00, Omaha to Chicago and Chicago to Omaha **2-week advance notice:** $41.00, Omaha to Chicago and Chicago to Omaha	**Same day:** $280-$760 **2-week advance notice:** $160-$360
Round-trip cost	$550-$580	**Same day:** $90 Omaha to Chicago, with parking in Omaha; $140 Chicago to Omaha, with parking in Chicago **2-week advance notice:** $136 Omaha to Chicago, with parking in Omaha; $196 Chicago to Omaha, with parking in Chicago	**Same day:** $82, Omaha to Chicago, with parking in Omaha; $148 Chicago to Omaha, with parking in Chicago **2-week advance notice:** $77, Omaha to Chicago, with parking in Omaha; $143 Chicago to Omaha, with parking in Chicago	**Same day:** $500-$1,460 **2-week advance notice:** $270-$1,460
One-way travel time	8 hours, 15 minutes	Omaha to Chicago: 8 hours, 30 minutes (8:15 pm - 4:45 am) Chicago to Omaha: 9 hours, 45 minutes (3:00 pm - 12:45 am)	8 hours, 45 minutes	4 hours, 40 minutes
Frequency of service	Unlimited	2X daily	2X daily	5X daily (American Airlines) 6X daily (Southwest Airlines) 6X daily (United Airlines)
Ability to work en route	None	Moderate	Moderate	Low
Capability to Conduct Business in Chicago during same day as travel	No	No	No	No
All-weather travel reliability	Low	Unknown	Unknown	Unknown
On-time performance	Not applicable	Unknown	Unknown	79% (see Appendix A) Tolerance for on-time arrival per USDOT is flight arrives not later than 15 minutes of the flight's published arrival time.
Basis of cost and time	• 470 miles one way via I-80		• Megabus public fares	• 10 minutes driving from

	and I-88 and I-290 • $0.555/mile from IRS Standard Mileage Rates, FY2012 • Parking expense at bestparking.com o $5/day downtown Omaha (shown as it is an avoided cost for this mode) o $35/day Chicago Loop • Toll Road Cost $10.20 tolls (per Illinois Tollway)		• Downtown parking $5/day in Omaha and $35/day in Chicago. Assume 2-day parking for business traveler.	Downtown Omaha to Eppley Airfield (personal auto); 10 minutes parking auto and shuttle bus to terminal; 60 minutes advance arrival time before departure (check-in, security), 1 hour 50 minutes flight time, 30 minutes to collect carry-on luggage and exit airport; 60 minutes on CTA from O'Hare to Loop. • Flight prices based on Southwest, United, and American airlines for nonstop flights, from pricing information at airline web sites. • Airport parking $30/day for short-term parking. Assume 2-day parking for business traveler.

Alternate Travel Mode Effects on the Route Alternative Selection Process

The alternate travel modes were examined to determine if any of the alternate travel modes made any of the rail route alternatives infeasible. This could take the form of the following:

- The route alternative was slower than personal auto between Chicago and Omaha
- The route alternative did not offer direct connectivity between intermediate cities
- The route alternative was more costly
- The route alternative did not offer travel amenities that made it as attractive as the alternate travel mode.

These comparisons are made in the table below. These questions asked are designed to identify any feasibility differences among the route alternatives that are created by the characteristics of the alternate travel modes. Because the cost, travel time, frequency, and service amenities of the proposed rail passenger service are not fully defined at this time, it was assumed that the passenger rail service would have the following characteristics for purposes of Route Alternative comparison only:

- 1-Way Cost: $70-$170
- Round Trip Cost: $130-$330
- 1-Way Travel Time: 7.5 to 9 hours (includes 1 hour travel time from home or place of business to downtown railroad station in Omaha, plus 7% recovery time added to train running time Omaha-Chicago)
- Frequency of Service: 5X daily
- Ability to Work En Route: Yes (e.g., WiFi, on-board food and beverages)
- Capability to conduct business in Chicago during same day as travel: Yes
- All-Weather Travel Reliability: High
- On-Time Performance: 90%
- Basis of cost and time:
- Ticket price range based on current Amtrak Midwest and Northeast Corridor
- Parking expense at bestparking.com
    - $5/day downtown Omaha (two full days)
    - None at Chicago
- Travel times are assumed performance of trains from preliminary Train Performance Calculations.

The table is color-coded to indicate whether a route alternative meets the Purpose and Need for providing a competitive and attractive travel alternative. Red indicates a route alternative does not meet the Purpose and Need. Yellow indicates a route alternative meets the Purpose and Need. Note that these comparisons are only among Route Alternatives, not between rail as a whole and the alternate travel mode.

Table B-3: Characteristics of Alternate Travel Modes that Differentiate between Rail Route Alternatives

Yellow = Route Alternative Meets Purpose and Need

Red = Route Alternative Fails to Meet Purpose and Need

Comparison Question	Route Alternative				
	1	2	4	5	4-A
Personal Auto Mode					
Does rail offer the same or better city-to-city connectivity for each of the cities that would be served by the Route Alternative?	Yes	Yes	Yes	Yes	Yes
Would rail service be the same cost or less expensive for a single traveler?	Yes	Yes	Yes	Yes	Yes
Is rail service likely to provide faster travel times between Chicago and Omaha at 79 mph?	No	Yes	Yes	Yes	Yes
At 90 mph?	No	Yes	Yes	Yes	Yes
At 110 mph?	Possibly	Yes	Yes	Yes	Yes
Does rail offer competitive or better frequency to enable trips to be made throughout the day?	Yes	Yes	Yes	Yes	Yes
Does rail offer the same or better service amenities that increase business productivity en route?	Yes	Yes	Yes	Yes	Yes
Does rail offer ability for same-day work in Chicago?	Yes	Yes	Yes	Yes	Yes
Is rail more likely to have greater travel reliability, such as in inclement weather?	Yes	Yes	Yes	Yes	Yes
Is rail likely to have greater on-time performance?	N/A	N/A	N/A	N/A	N/A
Commercial Bus Service Mode					
Does rail offer the same or better city-to-city connectivity for each of the cities that would be served by the Route Alternative?	Yes	Yes	Yes	Yes	Yes
Would rail service be the same cost or less expensive for a single traveler?	Yes	Yes	Yes	Yes	Yes
Is rail service likely to provide faster travel times between Chicago and Omaha at 79 mph?	No	Yes	Yes	Yes	Yes
At 90 mph?	No	Yes	Yes	Yes	Yes
At 110 mph?	Possibly	Yes	Yes	Yes	Yes
Does rail offer competitive or better frequency to enable trips to be made throughout the day?	Yes	Yes	Yes	Yes	Yes
Does rail offer the same or better service amenities that increase business productivity en route?	Yes	Yes	Yes	Yes	Yes
Does rail offer ability for same-day work in Chicago?	Yes	Yes	Yes	Yes	Yes
Is rail more likely to have greater travel reliability, such as in inclement weather?	Yes	Yes	Yes	Yes	Yes
Is rail likely to have greater on-time performance?	No data	No data	No data	No data	No data
Commercial Airline Mode					
Does rail offer the same or better city-to-city	Yes	Yes	Yes	Yes	Yes

connectivity for each of the cities that would be served by the Route Alternative?					
Would rail service be the same cost or less expensive for a single traveler?	Yes	Yes	Yes	Yes	Yes
Is rail service likely to provide faster travel times between Chicago and Omaha at 79 mph?	No	No	No	No	No
At 90 mph?	No	No	No	No	No
At 110 mph?	No	No	No	No	No
Does rail offer competitive or better frequency to enable trips to be made throughout the day?	Yes	Yes	Yes	Yes	Yes
Does rail offer the same or better service amenities that increase business productivity en route?	Yes	Yes	Yes	Yes	Yes
Does rail offer ability for same-day work in Chicago?	Yes	Yes	Yes	Yes	Yes
Is rail more likely to have greater travel reliability, such as in inclement weather?	Yes	Yes	Yes	Yes	Yes
Is rail likely to have greater on-time performance?	Yes	Yes	Yes	Yes	Yes

Summary

Route Alternative 1 does not meet the Purpose and Need that the rail service must provide travel times faster than personal auto for travel between Chicago and Omaha.

There are no other alternate transportation mode characteristics that by their existence create substantial differences among the route alternatives that would lead to the rejection of a route alternative.

Transportation Interconnectivity Characteristics of Route Alternatives

This section compares the rail route alternatives for their availability of modal interconnectivity at intermediate stations. Chicago and Omaha are common to all route alternatives; however, Route Alternative 4 does not serve Chicago Union Station and thus has less modal interconnectivity than Route Alternatives 1, 2, 4, and 5. Omaha has an extensive bus transit system that is focused on the downtown area, the likely terminus of the Chicago-Omaha rail passenger system. Chicago has a highly developed and extensive bus, commuter rail, and rail rapid transit system also focused on the downtown area, where the Chicago-Omaha service is likely to terminate.

Table B-4: Modal Interconnectivity of Route Alternatives

Route Alternative	Metro Area	Service Type	
		Fixed Route Bus	Paratransit/ Demand Response Bus
1			
	Fort Dodge	X	X
	Waterloo	X	X
	Dubuque	X	X
	Rockford	X	X
	Elgin	X	X
2			
	Ames	X	X
	Cedar Rapids	X	X

	Clinton	X	X
	DeKalb	X	X
4			
	Des Moines	X	X
	Iowa City	X	X
	Quad Cities	X	X
	Joliet	X	X
5			
	Osceola		
	Burlington		X
	Galesburg	X	X
4-A			
	Des Moines	X	X
	Iowa City	X	X
	Quad Cities	X	X
	Naperville	X	X

Summary

Route Alternative 4-A does not meet the Purpose and Need that the rail service must provide travel times faster than personal auto for travel between Chicago and Omaha. Route Alternative 5 is the only route without fixed-route bus service at some of its intermediate cities. Route Alternative 4 does not provide similar modal connectivity at Chicago as Route Alternatives 1, 2, 4-A, and 5.

Mode	Option		Speed (mph)	Reliability	Travel Time (One-Way)	User Cost	User Cost Range
Automobile	Personal Auto				8 hours, 15 minutes		
Bus	Burlington Trailways	Omaha to Chicago, 2 Week Notice	(1-Way)		8 Hours, 30 Min	$ 80.00	
	Burlington Trailways	Chicago to Omaha, 2 Week Notice	(1-Way)		9 Hours, 45 Min	$ 40.00	
	Burlington Trailways	Omaha to Chicago, Same Day	(1-Way)		8 Hours, 30 Min	$ 71.00	
	Burlington Trailways	Chicago to Omaha, Same Day	(1-Way)		9 Hours, 45 Min	$ 71.00	
	Burlington Trailways	Omaha to Chicago, 2 Week Notice	(Round Trip)			$ 80.00	
	Burlington Trailways	Chicago to Omaha, 2 Week Notice	(Round Trip)			$ 80.00	
	Burlington Trailways	Omaha to Chicago, Same Day	(Round Trip)			$ 126.00	
	Burlington Trailways	Chicago to Omaha, Same Day	(Round Trip)			$ 126.00	
	MegaBus	Omaha to Chicago, 2 Week Notice	(1-Way)		8 Hours, 45 Min	$ 41.00	
	MegaBus	Chicago to Omaha, 2 Week Notice	(1-Way)		8 Hours, 45 Min	$ 41.00	
	MegaBus	Omaha to Chicago, Same Day	(1-Way)		8 Hours, 45 Min	$ 46.00	
	MegaBus	Chicago to Omaha, Same Day	(1-Way)		8 Hours, 45 Min	$ 46.00	
	MegaBus	Omaha to Chicago, 2 Week Notice	(Round Trip)			$ 67.00	
	MegaBus	Chicago to Omaha, 2 Week Notice	(Round Trip)			$ 73.00	
	MegaBus	Omaha to Chicago, Same Day	(Round Trip)			$ 72.00	
	MegaBus	Chicago to Omaha, Same Day	(Round Trip)			$ 78.00	

Downtown Parking

Per Day	$ 5.00	in Omaha downtown
Per Day	$ 35.00	in Chicago downtown

Mode	Option		Speed (mph)	Reliability	Travel Time (One-Way)	User Cost	User Cost Range
Air	Flight	2-week advanced notice	(1-Way)	79%	Hour, 20 Min- 1 Hour, 50 Min (Direct	$ 150.00	$100- $300
		"Walk-Up"	(1-Way)	79%	Hour, 20 Min- 1 Hour, 50 Min (Direct	$ 220.00	$220-$700
		2-week advanced notice	(Round Trip)				$210-$1400
		"Walk-Up"	(Round Trip)				$440-$1400

Airport Parking

Per Day	$ 30.00	average

Mode	Option		Speed (mph)	Reliability	Travel Time (One-Way)	User Cost
Amtrak Rail		Omaha to Chicago, 2 Week Notice	(1-Way)		9 Hours, 30 Min	$ 108.00
		Chicago to Omaha, 2 Week Notice	(1-Way)		9 Hours	$ 69.00
		Omaha to Chicago, Same Day	(1-Way)		9 Hours, 30 Min	$ 69.00
		Chicago to Omaha Next Day, (Same Day	(1-Way)		9 Hours	$ 86.00

Passenger Rail			Speed (mph)	Reliability	Travel Time (One-Way)			
	Route Alternative 1	(CN via Dubuque)	79	90%	8	Hours	4	Minutes
			110	90%	6	Hours	42	Minutes
	Route Alternative 2	(UP via Clinton)	79	90%	7	Hours	18	Minutes
			110	90%	5	Hours	60	Minutes
	Route Alternative 4	(IAIS via Moline)	79	90%	7	Hours	36	Minutes
			110	90%	6	Hours	26	Minutes
	Route Alternative 4-A	(BNSF-IAIS via Wyanet and Moline)	79	90%	7	Hours	22	Minutes
			110	90%	6	Hours	15	Minutes
	Rout Alternative 5	(BNSF via Burlington)	79	90%	7	Hours	37	Minutes
			110	90%	6	Hours	13	Minutes

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Airline Reliability
Date Range: Feb 2011 to Feb 2012

Definitions by Code of Federal Regularions, CFR- Title 14 (Aeronautics and Space) Volume 4 Section 234.

http://www.gpo.gov/fdsys/search/pagedetails.action?collectionCode=CFR&searchPath=Title+14%2FChapter+II%2FSubchapter+A%2FPart+234&granuleId=&packageId=CFR-2002-title14-vol1&oldPath=Title+14%2FChapter+II%2FSubchapter+A&fromPageDetails=true&collapse=true&ycord=1070

Definition of late flight:	Late or late flight means a flight that arrives at the gate 15 minutes or more after its published arrival time.

Definition of cancelled flight:	Cancelled flight means a flight operation that was not operated, but was listed in a carrier's computer reservation system within seven calendar days of the scheduled departure

1
Orig= Omaha
Dest = Ohare

3129	Total Number of Flights (All Carriers)
114	Total Number Cancelled
591	Total Number Late
2424	Total "Reliable" (not late or cancelled)
77%	*Reliability*

2
Orig= Ohare
Dest = Omaha

3013	Total Number of Flights (All Carriers)
104	Total Number Cancelled
673	Total Number Late
2236	Total "Reliable" (not late or cancelled)
74%	*Reliability*

3
Orig= Midway
Dest = Omaha

1900	Total Number of Flights (All Carriers)
20	Total Number Cancelled
363	Total Number Late
1517	Total "Reliable" (not late or cancelled)
80%	*Reliability*

4
Orig= Omaha
Dest = Midway

1879	Total Number of Flights (All Carriers)
20	Total Number Cancelled
247	Total Number Late
1612	Total "Reliable" (not late or cancelled)
86%	*Reliability*

WEIGHTED AVERAGE ON RELIABILITY

79%

Airline Trip Travel Time

Min	Description
10	Drive time Downtown Omaha to Eppley Airport (Personal Auto)
10	Parking personal auto, shuttle bus to terminal
60	Advance Arrival Time Before Departure (assume check-in, security)
110	Flight Time (assumed maximum of 1 hour 50 min vs 1 hour 20 min)
30	collect carry-on luggage and exit airport
60	CTA from O'Hare to Loop
280	***Min***

Total Travel Time **4** Hours 40

Airport Parking

$ 24.00	per day	Omaha Eppley
$ 33.00	per day	Chicago Ohare
$ 31.00	per day	Chicago Midway
$ 30.00	**AVERAGE**	

Personal Auto

TRAVEL COST

Travel Distance	470 mi	One Way travel distance via I-80 and I-88		Source: Google Maps
Cost Per Mile	$ 0.555	Use the IRS Standard Rate Since Span Multiple States		
	~~$ 0.37 $/mi~~	~~*Cost per mile used in Chi-IC?*~~		*Source: Benefit-Cost Analysis Specific to the State of Iowa (January 2011)- p. 216, Table 2*
	$ 0.555 $/mi	*Cost per mile- IRS FY2012 Business Rate*		*Source: IRS Standard Mileage Rates, FY2012*
Parking Expense				
	$ 35.00 $/day	*Daily Cost of parking in Chicago Loop*		Source: bestparking.com, as of 3/21/12
	$ 5.00 $/day	*Daily Cost of parking in Omaha downtown core*		*Source: bestparking.com, as of 3/21/12*
Illinois Tolls	$ 10.20	*One-Way tolls*		Source: illinoisvirtualtollway.com. Vehicle type = auto/motorcycle (2axles)
		Dixon Tolls Plaza 69	*$ 3.60*	
		DeKalb Toll Plaza 66	*$ 3.60*	
		Aurora Toll Plaza 61	*$ 1.50*	
		Meyers Road Toll Plaza 52	*$ 1.50*	

Personal Auto One-Way Trip, Assuming 1-Day Parking in Chicago
$ 306.05

Personal Auto One-Way Trip, Assuming 1-Day Parking in Omaha
$ 276.05

Personal Auto Round Trip, Assuming 1-Day Parking in Chicago
$ 577.10

Personal Auto Round Trip, Assuming 1-Day Parking in Omaha
$ 547.10

TRAVEL TIME

Segment	Endpoints	Dist (mi)	TT (min)	Implied Spd	
I-80	Omaha to DeSoto (Highway 169)	117	112	*62.7*	Source: Google Maps, reported distances and travel times
I-80	DeSoto (Hwy 169)to Altoona (Hwy 6	32	32	*60.0*	Source: Google Maps, reported distances and travel times
I-80/ I-88	Altoona (Hwy 65) to Dixon Plaza	223	218	*61.4*	
I-88	Dixon Plaza to DeKalb Plaza	30.3	36	*50.5*	Source: travelmidweststats.com
I-88	DeKalb Plaza to Aurora Plaza	31.2	44	*42.5*	Source: travelmidweststats.com
I-88	Aurora Plaza to Oakbrook	17.2	22	*46.9*	Source: travelmidweststats.com
I-290	I-88 (Wolf) to I-90/I-94/Circle	14	35	*24.0*	Source: travelmidweststats.com

Note: Travel time is the maximum daily segment travel time (based on EB for Wednesdays)- since taking max daily then assume opposite direction is equivalent

Total Distance	464.7				
Total Travel Time (Min)	499				
Total Travel Time (Hours)	8	Hours	19	Minutes	

Assumptions Not Used		
Price of Gasoline	$ 3.80	Source: AAA, Regular per gallon average for Iowa as of March 19, 2012
Fuel Economy	27	mpg, Assumed Average for Personal Vehicles

Modal Providers

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Route Alternative	Metro Area	Agency Type	Agency Name	Service Type
1				
	Fort Dodge	Small	City of Fort Dodge (DART)	Fixed Route, Paratransit, Subscription
	Fort Dodge	Regional	MIDAS Council of Governments	Demand Response, Subscription
	Waterloo	Large	Metropolitan Transit Authority of Black Hawk County/Waterloo MET	Fixed Route, Paratransit, Subscription
	Waterloo	Regional	Iowa Northland Regional Council of Governments/Regional Transit Commission	Demand-Response, Subscription
	Dubuque	Large	City of Dubuque, The Jule	Fixed Route, Paratransit, Subscription
	Dubuque	Regional	Delaware, Dubuque and Jackson County Regional Transit Authority.	Demand-Response, Subscription
	Rockford	Large	Rockford Mass Transit District	Fixed Route, Paratransit,
	Elgin	Large	Metra	Commuter Rail
	Elgin	Large	PACE	Fixed Route, Paratransit, Vanpool
	Elgin	Large	Chicago Transit Authority (CTA)	Rapid Transit
2				
	Ames	Large	Ames Transit Agency/ CyRide	Fixed Route, Paratransit, Subscription
	Cedar Rapids	Large	Cedar Rapids Transit	Fixed Route, ADA paratransit service
	Cedar Rapids	Regional	East Central Iowa Council of Governments	Demand-Response, Subscription
	Clinton	Small	City of Clinton Municipal Transit Administration	Fixed Route, Paratransit
	DeKalb	Regional	City of DeKalb (DSATS)	Fixed Route, Paratransit
4				
	Des Moines	Regional	Heart of Iowa Regional Transit Agency	Demand-Response, Subscription
	Des Moines	Large	Des Moines Area Regional Transit Authority (DART)	Fixed Route, Paratransit, Vanpool
	Iowa City	Large	Coralville Transit System	Fixed Route, Paratransit
	Iowa City	Large	University of Iowa, Cambus	Fixed Route, Paratransit
	Iowa City	Large	Iowa City Transit	Fixed Route, Paratransit
	Quad Cities	Regional	River Bend Transit	Demand-Response, Subscription
	Quad Cities	Large	Davenport Public Transit (Citibus)	Fixed Route, Paratransit, Subscription
	Quad Cities	Large	Rock Island County Metropolitan Mass Transit	Fixed Route, ADA paratransit service, subscription
	Quad Cities	Large	City of Bettendorf	Fixed Route, Paratransit
	Joliet	Large	Metra	Commuter Rail
	Joliet	Large	PACE	Fixed Route, Paratransit,

				Vanpool
	Joliet	Large	Chicago Transit Authority (CTA)	Rapid Transit
4-A				
	Des Moines	Regional	Heart of Iowa Regional Transit Agency	Demand-Response, Subscription
	Des Moines	Large	Des Moines Area Regional Transit Authority (DART)	Fixed Route, Paratransit, Vanpool
	Iowa City	Large	Coralville Transit System	Fixed Route, Paratransit
	Iowa City	Large	University of Iowa, Cambus	Fixed Route, Paratransit
	Iowa City	Large	Iowa City Transit	Fixed Route, Paratransit
	Quad Cities	Regional	River Bend Transit	Demand-Response, Subscription
	Quad Cities	Large	Davenport Public Transit (Citibus)	Fixed Route, Paratransit, Subscription
	Quad Cities	Large	Rock Island County Metropolitan Mass Transit	Fixed Route, ADA paratransit service, subscription
	Quad Cities	Large	City of Bettendorf	Fixed Route, Paratransit
	Naperville	Large	Metra	Commuter Rail
	Naperville	Large	PACE	Fixed Route, Paratransit, Vanpool
	Naperville	Large	Chicago Transit Authority (CTA)	Rapid Transit
5				
	Osceola	N/A		
	Burlington	Regional	South East Iowa Regional Planning Commission/ SEIBUS	Demand-Response, Subscription
	Burlington	Small	Burlington Urban Service	Demand-Response, Route deviation, subscription
	Galesburg	Small	Galesburg Transit	Fixed Route, Handivan

Available Transit Maps for
Iowa and Chicago and Omaha Metropolitan Areas

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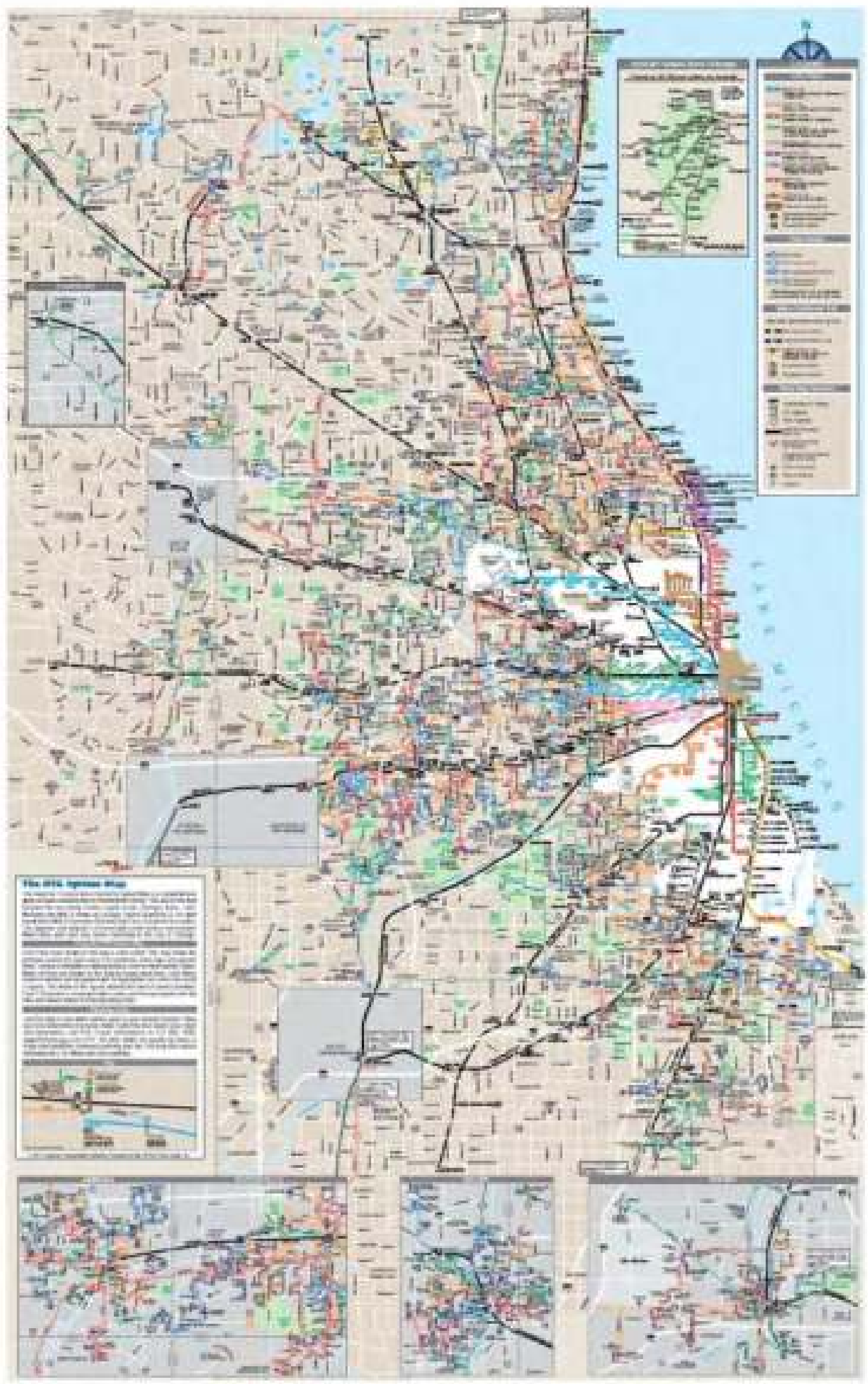
Iowa's Public Transit System

http://www.iowadot.gov/transit/interactive_map.html

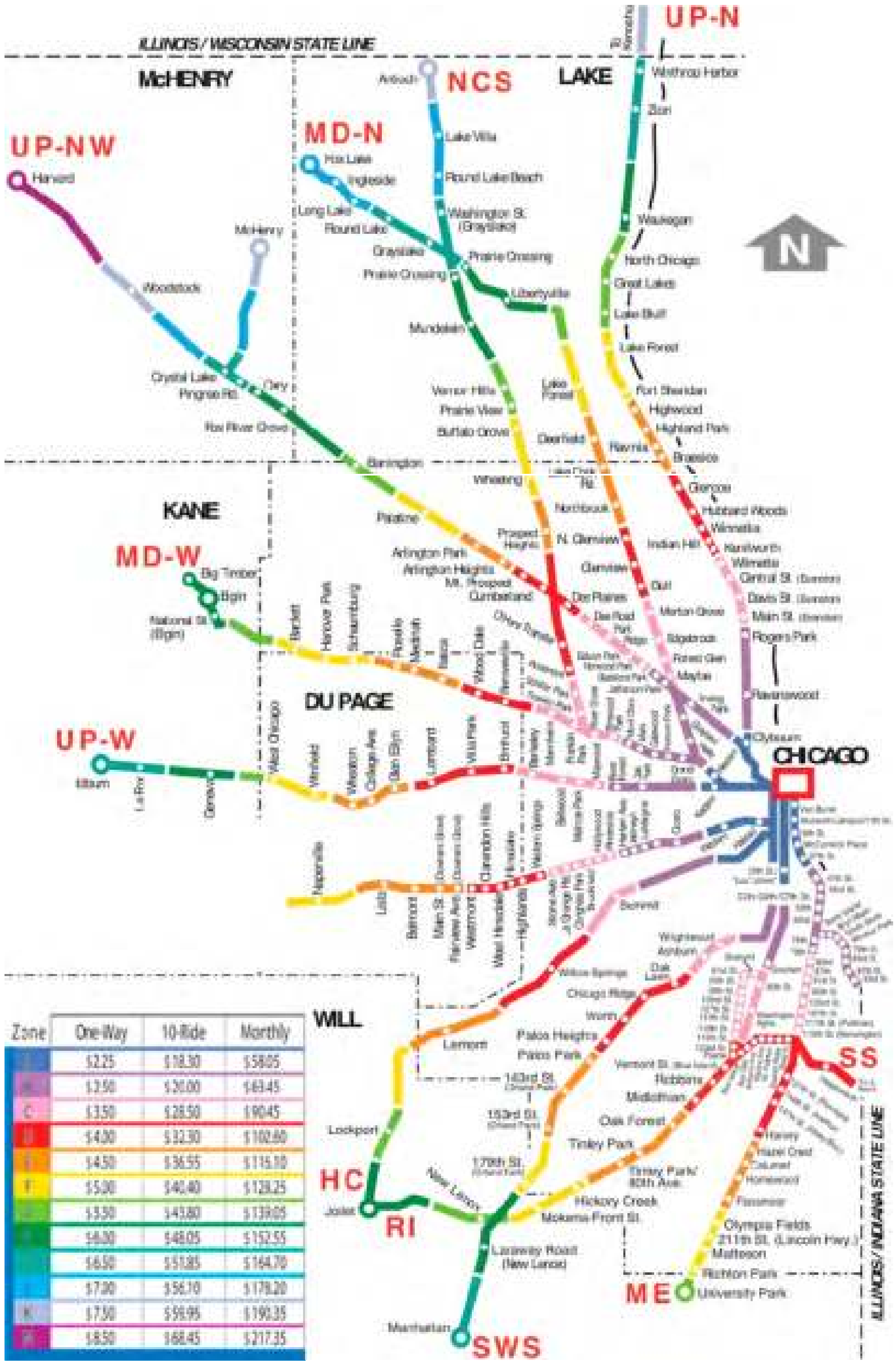
Chicago Regional Transportation Authority

http://www.transitchicago.com/asset.aspx?AssetId=177



Metra (Chicago)

http://metrarail.com/content/metra/en/home/maps_schedules/metra_system_map.html



Zone	One-Way	10-Ride	Monthly
A	$2.25	$18.30	$58.05
B	$2.50	$20.00	$63.45
C	$3.50	$28.50	$90.45
D	$4.00	$32.30	$102.60
E	$4.50	$36.55	$115.10
F	$5.00	$40.40	$128.25
G	$5.50	$43.80	$139.05
H	$6.00	$48.05	$152.55
I	$6.50	$51.85	$164.70
J	$7.00	$56.10	$178.20
K	$7.50	$59.95	$190.35
M	$8.50	$68.45	$217.35

Pace (Chicago Regional Transportation Authority)

http://www.pacebus.com/default.asp

Omaha Metro

http://ometro.com/bus-system-page/system-map

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ATTACHMENT C

TRAIN OVERTAKE DISTANCE CALCULATIONS

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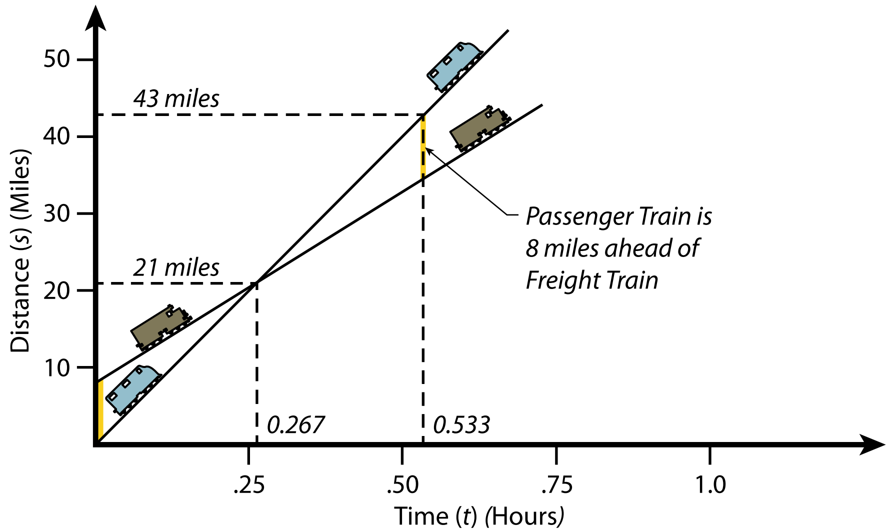

Passenger Train Position (Distance): $\frac{ds_1}{dt} = 80\text{mph}$

Freight Train Position (Distance): $\frac{ds_2}{dt} = 50\text{mph}$

$s_1 = 80t$
$s_2 = 50t + 8$

Location where Passenger Train is even with the Freight Train ("neck-and-neck"):

$s_1 = s_2 \Rightarrow 80t = 50t + 8 \Rightarrow 30t = 8 \Rightarrow t = 0.267$ hrs

$80\,(0.267) = 21$ miles $= s_1 = s_2$

Location where Passenger Train is 8 miles ahead of the Freight Train:

$s_1 = s_2 \Rightarrow 80t - (50t + 8) = 8 \Rightarrow 30t = 16 \Rightarrow t = 0.533$ hrs

$80\,(0.533) = 43$ miles $= s_1$

$50\,(0.533) + 8 = 35$ miles $= s_2$

Train Overtake Distance Calculations

Chicago to Omaha
Regional Passenger Rail System Planning Study

DATE
April 2012

FIGURE

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ATTACHMENT D

COST INDEX RANKING

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CHICAGO-OMAHA HSR COST ESTIMATES
UNIT COSTS

Item	U/M	Unit Cost
Universal Crossover, 2 tracks, every 8 miles	Route Mile	$ 80,000
Universal Crossover, 3 tracks, every 8 miles	Route Mile	$ 118,000
Industry Spur Connection	EA	$ 225,000
CTC+PTC	Route Mile	$ 250,000
Grade Xing (Roadway)	Lanes	$ 50,000
Grade Xing (Track)	Tracks	$ 200,000
Bridge, PCCB	TF	$ 6,000
Bridge, Steel	TF	$ 12,000
Hwy Grade Sep, RR over	TF	$ 15,000
Hwy Grade Sep, RR under	Lane-Foot	$ 3,100
Major Structure Cost	EA	$ 250,000,000
Track at 15' CLs Light Earthwork	TM	$ 2,321,800
Track at 15' CLs Heavy Earthwork	TM	$ 4,037,800
Track at 20' CLs Light Earthwork	TM	$ 2,242,600
Track at 20' CLs Heavy Earthwork	TM	$ 4,618,600
Track at 45' CLs Light Earthwork	TM	$ 2,902,600
Track at 45' CLs Heavy Earthwork	TM	$ 7,390,600
East Dubuque Tunnel	TF	$ 30,000
ROW: Urban		
Urban ROW Area, Unit Cost, Ext. Cost	AC	$ 100,000
ROW: Rural		
Rural ROW Area, Unit Cost, Ext. Cost	AC	$ 25,000
Station Cost	EA	$ 6,000,000
Major Station Cost	EA	$ 15,000,000

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ATTACHMENT E

COMMENTS AND RESPONSES

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Date	Agency	Topic(s)	Comment	Response
4/18/12	Illinois Department of Natural Resources	Agency Coordination	Did you folks get my email sent several weeks ago?? It pertains to the coordination for natural resources review on the alignments for this project. I assume you did. Call me if u need more direction. Please respond so I know and there is not a last minute deadline to meet.	Illinois DNR was contacted to request the database information for route alternative review.
4/25/12	Greater Des Moines Partnership	Public Involvement	Please clarify the location - is it at the Des Moines Public Library - Main library downtown or Grand (not E Grand) or is it at one of the buildings surrounding the Capitol complex? Also, the meeting previously scheduled at the State Historical Building later in the has been cancelled, correct?	Thank you for your interest in the Chicago to Omaha Regional Passenger Rail System Planning Study. The Stakeholder meeting you reference will be held at the Main Library, 1112 E. Grand Ave (directly to the north of the Capitol building), from 1-3pm. We are sending out a reminder on Monday; I will make sure to include these specifics in the invite. In addition, the public meeting will take place later that evening, from 4-7pm, at the State Historical Society of Iowa Building, 600 E. Locust St. Can you tell me where you heard that the meeting was cancelled so we can fix the communication error if necessary? Thank you very much! We hope to see you next week.
4/29/12	City of Mount Vernon	Routes - Alternative Route; Use of the Project; Routes - Route 2; Routes - Route 4	The ideal route would connect Omaha to Des Moines, Iowa City, Cedar Rapids, Clinton, then through the northern suburbs of Chicago to Downtown. That would be the blue route connecting to the red route at Cedar Rapids. The Crandic line could be used for the Iowa City to Cedar Rapids connection. That section betwen CR and IC alone might be a very popular trip for commuters. U of I students would provide a lot of traffic to the northern suburbs of Chicago.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
5/1/12	Sierra Club and River Action	Routes - Location Specific - IA City; Routes - Location Specific Comment	It was on the news that the route has already selected through QC and Iowa City.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
5/1/12	Iowa Assc. of Railroad Passengers also - Pro Rail Nebraska	General	I am having "major problems" with Council Bluffs Nonpareil & Omaha World Harold printing informatino in advance on these meetings. I have submitted information to them in person but they ignore the information. The Council Bluffs Chamber of Commerce has negated them publishing these notices in our newspapers & other news media too. This holds true when Governor Vilisak came in to Council Bluffs by train. The news media had information 1-1/2 weeks ahead of time but would not print these news story's till the Chamber of Commerce said okay. Later Roland M. Lynch, 5-1-2012	Concerns were discussed in person with Amanda Martin at the Council Bluffs Stakeholder Meeting on May 3, 2012.
5/2/12	City of Van Meter	Routes - Route 4A; General; Routes - Location Specific Comment	Your google map does not work correctly and does not allow me to zoom in as much as needed. Is your route 4A running throught the city of Van Meter, IA? If so, have you made the city aware of this? If so, please explain to me how this could possibly be a good thing for our city as the railroad in Van Meter runs across the only entrance from the interstate that provides access to residential properties. Also all of our city's business as well as the Rec Complex flanks the railroad running through town. Please respond to these questions as soon as possible. Thank you, Adam Coyle.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. This route does run through Van Meter on the Iowa Interstate Railroad (IAIS). The study will determine the feasibility of service from Chicago to Omaha that will be available to all of the citizens of Iowa, so as to assist in providing an alternative mode of transportation and help alleviate congestion on the highways and at airports. As part of the necessary improvements for implementing passenger rail from Chicago to Omaha, gates and flashing lights will be required at every public crossing along the entire route, including crossings that now only have lights and/or passive signage. If the speeds are ultimately higher than 79 mph, there will be a requirement to install additional safety mechanisms at the crossings.

Date	Agency	Topic(s)	Comment	Response
5/2/12	Illinois Department of Natural Resources	Agency Coordination; General	I have submitted comments twice that some one contact me on this project. At this time there has been no response. I manage the Transportation Review Program and do the environmental reviews on transportation projects. I have been involdved in the the HSR from Chicago to st. Louis. I see where u souposedly got comments from the resource agencies in early 2012 but to my knowlege I have not been contacted other than these emails u send out. out of courtesy, I would appreciate someone contact me to see how the IL. Dept. of Natural Resources is involved.	Response given via telephone conversation summarized here. Called Illinois DNR and apologized for the delay in getting back to them regarding specific future use of Illinois DNR data. Illinois DNR questions were based on the availability of the Alternatives Analysis Report and wanting to know more about the screening and subsequent environmental processes. It was explained that the screening process relied primarily on publicly available datasets equivalent for routes reviewed for IL, IA, and NE. It was also noted that the intent of the environmental screening process was to identify fatal flaws and that purpose and need, engineering, and cost considerations were the main drivers for screening out alternatives. For T&E species, the focus was on critical habitat for federal species. Although there are county lists of T&E species both at federal and state level, without knowing specific habitat along the route, a reasonable determination of potential impacts by species could not be made without an extensive effort, and a count by counties of total T&E species along a route would not lead to a reasonable comparison. This is Tier 1 and the EIS would look more along Route Alternative 4-A, and the Illinois DNR information on T&E species would be useful for the Tier 1 EIS and even more so during Tier 2. Tier 1 analysis will result some ideas on what would be needed for track and facilities, but not exact locations or dimensions. Route Alternative 4-A follows the route of a portion of the Chicago to Iowa City (Tier 1) and subsequently Chicago to Moline (Tier 2) routes, which were previously evaluated for environmental issues, including T&E species. Environmental information has been requested from Illinois DOT on the Chicago to Moline effort. Illinois DNR mentioned there is an ongoing issue with Chicago to St. Louis on the need for an incidental take that needs several months of coordination, and they didn't want that to be needed for this project. The Chicago to Omaha project is still early in the process and the plan would be to continue coordination through Tier 1 and into Tier 2, as warranted. An e-mail to Illinois DNR from the Project team requesting access to Illinois DNR data would start the approval process and the agreement would specify to protect the data and not provide specific locations of T&E species to the public. The e-mail could also note introduction to the EcoCAT process that would be forwarded to Tara Kieninger whereby Illinois DNR helps review a
5/3/12	Metropolitan Area Planning Agency	Routes - Route 4A; Rail - Operations	Agree with selection of 4-A as preferred alternative. I would recommend analysis of ridership if budgetary and political situation only allow 1-2 trips per day as part of study.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Ridership and revenue forecasts for various frequencies and speeds are being developed as part of the study and are considered by the Federal Railroad Administration (FRA) as key factors in determining the preferred alternative. At the end of the study, we will have a better understanding of the most feasible implementation plan for the service.

Date	Agency	Topic(s)	Comment	Response
5/17/12	Nebraska Department of Environmental Quality	Water Quality; Agency Coordination; General	The Nebraska Department of Environmental Quality (NDEQ) has reviewed the above-mentioned project. As with any facility, permits may be required prior to beginning construction or operation. At a minimum, you should be aware of the possible requirements for the following permits: * A Construction Storm Water Permit will be required if there is greater than one acre of disturbance of land, which is likely with this project. Highly chlorinated water for main disinfection will require de-chlorination prior to discharge. Please contact Blayne Renner at the number provided below if you have additional questions regarding the NDEQ Construction Storm Water Permit. * Wastes generated from construction and/or demolition during this project must be properly disposed at a permitted landfill or recycled. If you have questions related to the Waste Program, please contact Jeff Edwards at the number provided below. * Check with USACE for Section 404 needs. * Depending on the final route and location in Douglas County as well as installation of stationary equipment NDEQ Title 129 (outside of city limits) and/or Omaha Air Quality Control regulations (inside of city limits) would apply to the following: 1. Land clearing and construction-disposal of waste materials by open burning must be permitted by NDEQ and/or City of Omaha. 2. Asbestos assessment and abatement is needed prior to any structure demolition. Prior notification to NDEQ and City of Omaha required. 3. Fugitive dust control during all land clearing and construction activities is required by NDEQ and City of Omaha. Any contamination of city roadways will require prevention and/or clean-up per the City of Omaha specifications. 4. Construction and/or Operating permits for stationary engines, boilers, emergency generation equipment and other equipment may be required by the City of Omaha Air Quality Control and/or NDEQ. Construction Storm Water Program – Blayne Renner, 402-471-8330; Waste Compliance – Jeff Edwards, 402-471-8309; Air Quality Program – Yvonne Austin, 402-471-3305. Until further along in the planning process, it is unknown whether there may be additional regulatory requirements. We strongly urge the project sponsors to make contact with the Department; contact numbers are provided above. It has been our experience that early and open communication helps facilitate the permitting process. If you have any questions about the permitting process, or any other questions, feel free to contact me at (402) 471-6974. For more information, please visit our website at www.deq.state.ne.us. Good luck with your project!	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. The Tier 1 Service Level Draft Environmental Impact Statement (EIS) will identify the types of permits and other approvals that may be necessary for the overall Project. However, the specific permits and approvals that will be needed for each section of the overall Project will not be known until after Tier 1 is complete and the Tier 2 NEPA analysis (not funded) is completed for each of the sections. Coordination with the resource agencies will continue throughout the Tier 1 and 2 processes to facilitate identification of permits and approvals that will be required prior to construction of each section of the overall Project. We appreciate your providing the individuals to contact regarding permitting as we progress through the Tier 1 and 2 NEPA study processes.
5/21/12	Metra Commuter Rail	General; Rail - Freight Rail; Rail - Improvements; Transportation - Current Train Traffic; Funding of the Project	Metra wishes to provide the following comments regarding the Chicago to Omaha Regional Passenger Rail System Planning Study Draft Alternatives Analysis (AA) Report. The BNSF line between Chicago and Aurora, which is part of Alternative 4A, the alternative to be carried forward for the analysis in the Tier I Service level EIS, hosts 94 revenue and 12 non-revenue Metra trains each weekday (not 64 daily trains as noted in the AA) and has the highest ridership of Metra's 11 lines. The AA discusses the fact that this segment is heavily utilized by freight, Metra and Amtrak trains, but it does not specifically address how Alternative 4A will contend with congestion on this line east of Aurora. Metra believes that Chicago-Omaha passenger trains may not be able to be accommodated on this line without additional infrastructure, and that acquisition of expanded right of way will be difficult in the Chicago area. It is not clear that these additional infrastructure and right of way costs are accurately reflected in this analysis. The potential extension of Metra service beyond Aurora to Oswego, which is noted in the document, would add commuter train traffic west of Aurora and may require additional infrastructure in this portion of the line as well. Preliminary engineering and an Environmental Assessment for the proposed Oswego extension are currently underway. Another constraint, not mentioned in the draft AA, is the limited ability to accommodate additional trains on the south side of Chicago Union Station, which is currently at capacity during many times of the day. Recommendations to address this issue are currently being developed as part of the Chicago Union Station Master Plan study. In addition to Metra's concerns regarding the integration of new intercity trains with the traffic currently using the line, we want to ensure that capacity is preserved for future expansion of Metra service in this successful and growing commuter corridor. We ask that you keep Metra's Division of Strategic Capital Planning informed as this study progresses, and look forward to working with you during further development of this project. Please feel free to contact me by phone (312-322-8022) or email (lciavere@metrarr.com) with information or email	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Iowa and Illinois DOT's are aware of Metra's preliminary engineering/NEPA activities which are currently underway for the extension of service between Aurora and Oswego. BNSF and Amtrak are cooperating partners on the Chicago to Omaha Study and have been engaged throughout the alternatives analysis. BNSF is generating the RTC modeling for the corridor segment between Chicago and Wyanet which will identify the infrastructure needed to support their existing and proposed services for a 20-year horizon (as required by the federal funds) that includes operations for railroads with trackage rights on the corridor or a segment of the corridor. Due to limited funding opportunities and considering the level of investment required, a phased approach is planned for the Chicago to Omaha service, initially starting as two round trips per day to Moline with a maximum speed of 79 mph. We will conduct additional coordination with Metra as the project progresses into the Tier 2 studies.

Date	Topic(s)	Comment	Response
4/20/12	Public Involvement; Routes - Location Specific - IA City	I notice that on one of the proposed routes it shows it still going through Iowa City, yet there is no public meeting set for Iowa City. I suggest if your going to run this thing through peoples cities you have a meeting in that city.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
4/20/12	Routes - Alternative Route; Routes - Location Specific Comment; Use of the Project	First, the Chicago - Quad Cities - Iowa City proposal needs to be part of any alternatives review for service to Des Moines and Council Bluffs. At the very least, combining routes consolidates service on the eastern end and reduces operating and station costs. Second, an Iowa train must serve its most populous city and capitol. Reaching Omaha is secondary and is just across the Missouri River from Council Bluffs. Third, service should be extended to Omaha and Lincoln in cooperation with Nebraska.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. In an effort for Iowa to become eligible for future federal funds, we must prepare an Environmental Impact Statement (EIS) and submit it to the FRA (Federal Railroad Administration) for the Chicago to Omaha corridor. The EIS study requires us to analyze all of the historic passenger rail routes that operated between Chicago and Omaha. One of the routes considered in the alternatives reviews incorporates the Chicago–Quad Cities-Iowa City connection as your comment suggests. This route also would serve Des Moines and is in close proximity to Iowa's major population centers. In 2009, when the Iowa DOT applied for federal funding for the passenger rail planning study, the extension to Nebraska was considered. At that time, the Nebraska Department of Roads indicated they would not be a coapplicant for funds for the planning study. Iowa DOT and Illinois DOT determined that the study limits would be from Chicago to Omaha, which is consistent with the Midwest Regional Rail Initiative's (MWRRI) vision for expanded passenger rail in the Midwest. For more information on the MWRRI, see link at http://www.iowadot.gov/iowarail/passenger/mwrrie_exec_report_2004.pdf
4/23/12	General	Your route maps do not indicate where the Current AMTRAK routes are and will they continue with new service? A map showing the routes would be helpful. Thanks you.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Iowa, unlike some other surrounding states, is served by two long distance Amtrak routes and currently has no intercity routes. The two long distance routes consist of: 1) California Zephyr, which runs on the existing BNSF freight railroad through Southern Iowa (Route 5 on the map). This route runs eastbound and westbound daily between Chicago to California. 2) Southwest Chief, which also operates on existing BNSF railroad right-of-way has a daily operation in both directions but only stops in Ft. Madison, IA. The California Zephyr and the Southwest Chief are the responsibility of Amtrak as part of their long-distance network, and the State of Iowa is not involved in the decisions related to this service. Currently, Amtrak has no plans to modify their services on these long-distance routes.

Date	Topic(s)	Comment	Response
4/23/12	Routes - Location Specific - IA City; Routes - Route 4; General; Cummulative Impacts; Safety - Grade Crossings; Noise - Loud Rail Traffic	To the Chicago-Omaha Rail Planning Study: My comment addresses the criterion of environmental impact. As you may know, the Iowa Interstate trains run through several Iowa City urban neighborhoods including mine. They make an incredible lot of noise. We get blasted by locomotives many times each day, and because the track curves, screeching wheels. As you can imagine this is harmful to property values and neighborhood maintenance. If the traffic is to be increased by adding passenger service, the service ought to be coupled with the building of a federal Quiet Corridor to protect neighborhoods along the tracks. This improvement also should include higher-level protection for grade crossings so the locomotives won't have to blow the horn every few blocks. In my neighborhood the track runs next to a day care center for little kids. (Greenwood Ave. 52246). It has warning bells but no kidproof barrier. I urge the planning study to integrate with its plan a grant proposal for the building of the Quiet Corridor. The CC goes to Mr. Geoff Fruin of the Iowa city Council. I hope that this idea will find support among the people planning new rail service.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of the necessary improvements for implementing passenger rail from Chicago to Omaha, gates and flashing lights will be required for every public crossing along the entire route, including crossings that now only have flashing lights and/or passive signage. If the speeds are ultimately higher than 79 mph, there may be a requirement to install additional safety mechanisms at the crossings. For a community to obtain Quiet Zone status, the local jurisdiction must work with the Federal Railroad Administration (FRA) as well as the host railroad to determine eligibility for a community becoming a Quiet Zone designee. Typically, additional safety improvements are required at crossings and the cost is the responsibility of the local community. Since that initial request must come directly from the city officials, we recommend that you continue to work with your local officials to discuss options for establishing Quiet Zone(s).
4/30/12	Public Involvement	I would like to know how I can particpate in the online open house meeting regarding the Chicago to Omaha regional rail system routes.	Commenter was added to the Project email list which included emails with information on how to participate in the online open house meeting.
5/1/12	Routes - Location Specific Comment; Use of the Project	It is unfortunate that amont the several proposed passenger rail service tracks through Iowa, a Quad Cities to Cedar Rapids to Iowa City to Des Moines to Omaha route wasn't considered. I think passenger rail service linking Iowa City and Chicago is intelligent and inevitable, and I'm primarily in favor of it because so many Universtiy of Iowa students are from Chicago. Safer transportation for them to and from their parents' homes should be everyone's goal. But, not including a Cedar Rapids-Iowa City link is missing a real opportunity to serve two communites that share an untold number of commuters.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Route 2, which goes through Cedar Rapids was considered, but there is not currently an existing direct route that goes through Quad Cities, Cedar Rapids and Iowa City on to Des Moines and Omaha. We do understand that there is a large population within the Cedar Rapids metro area that would be served by passenger rail and since there currently is not a east/west route that connects all the communities mentioned, our planning includes the use of a feeder bus system from Cedar Rapids to Iowa City. This bus service is being studied as part of the project and would look into allowing passenger rail customers to buy one ticket through Amtrak to travel both on the bus from Cedar Rapids as well as boarding the train in Iowa City for travel either east or west, depending on the customer's travel plans.
5/1/12	Safety; General; Rail - Operations; Transportation - Bus Service	It is great to have the opportunity for this railroad strategic Alternative 5 routes. Level occupied? Public safety? Buses competitionn. Do we really have that many people for 5 round trips a day?	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of this study, we will be analyzing the full build out of the proposed service which would include 5 to 7 round trips per day. We will consider all the scenarios related to a full build out of the service in the Draft Environmental Impact Statement (EIS). We do though, plan to implement this service incrementally in phases. It is likely that service will not initially be Chicago to Omaha at 110 mph with 7 round trips per day, but instead more likely would be from Chicago to Iowa City at 79 mph with 2 round trips per day and incrementally increased based on funding opportunities and customer demand. This would be an extension to Iowa City of the currently funded service development program for the Chicago to Quad Cities. Increasing frequencies and decreasing travel times by increasing speeds are key factors in increasing revenue and ridership and reducing the operating subsidy for the service.
5/1/12	General	I find it hard to disagree with data presented and see routes 4 and 4A as the best route. My major interest beyond doing whatever I can to get the Iowa legislature to support this project is to make sure thruway bus service is considered. My hope is that many cities in Iowa not on selected route have access to frequently daily rail service to Omaha/Chicago, not just Des Moines and Iowa City.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.

Date	Topic(s)	Comment	Response
5/1/12	Routes - Routing Process	If you go through big cities Moline, Iowa City, Des Moines…then be sure you have a fast route in and out of town. I travel CHI-STL and it seems many delays are in Chicago or Springfield.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
5/1/12	General	How can I obtain online the complete (not just summary) Draft Alternatives Analysis? I would like to be able to study this document PRIOR to attending the Council Bluffs meeting on Thursday.	Commenter was provided a hard copy version of the document at the May 3rd public meeting.
5/1/12	Public Involvement; General	The exec study of the draft alternatives not available - clicking on the offer just sends me back to the beginning of this "open meeting". When will it be? And, it seems this "open meeting" is really just a notification of the decisions already made by the unnamed panel. Right?	Thank you for your interest in the Chicago to Omaha Passenger Rail Study. We understand your concerns. Beginning May 1st, the route alternatives screening analysis, including an explanation of the screening process, will be available to view on our website, www.iowadot.gov/chicagotoomaha. If you have any other questions, please feel free to respond directly to this email. Thank you.
5/2/12	Routes - Alternative Route; Routes - Route 2; Use of the Project	In looking at the options for routes it appears the red route from Chicago to Cedar Rapids/Iowa City is the most direct on will have the shortest travel time. From Cedar Rapids/Iowa City to Omaha it looks like the Blue line is the most direct and will have the shortest travel time. It also includes Des Moines. Is there a possibility to select part of each route and connect them just west of Cedar Rapids/Iowa City? I would try to utilize the passenger rail if it were convenient to access. Rockwell in Cedar Rapids has many business trips that go through Chicago and could utilize the rail if it were quick and efficient.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Route 2, which goes through Cedar Rapids was considered, but there is not currently an existing route that goes through Quad Cities, Cedar Rapids and Iowa City on to Des Moines and Omaha. We do understand that there is a large population within the Cedar Rapids metro area that would be served by passenger rail and since there currently is not an east/west route that connects all the communities mentioned, the next best opportunity for service is to introduce a feeder bus system from Cedar Rapids to Iowa City. This bus service is being studied as part of the project and would allow passenger rail customers to buy one ticket through Amtrak to travel both on the bus from Cedar Rapids as well as boarding the train in Iowa City for travel either east or west, depending on the customer's preference.
5/2/12	Economic Impacts; Station Facilities & Upgrades; General	Questions: 1) As part of future planning, will there be any analysis of potential economic impacts on locations along the selected route? 2) Will there be an opportunity for rolling stock construction, finishing, or maintenance? 3) Will there be any opportunity for developing concessions at stations alone the select route?	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. The ultimate goal of this study is to determine a route that is most feasible for passenger rail service with the least amount of environmental impacts. An analysis of more direct economic impacts such as short- and long-term job creation and transportation benefits including efficiency and reliability of movement of passengers or goods; reductions in operations and/or maintenance costs for existing services (i.e., highway maintenance costs); reductions in vehicle operating costs; mobility and low income mobility; environmental effects; accident reduction; and congestion relief will be included in the Service Development Plan for the selected route that is being prepared as part of this study. Planning, environmental and design for site-specific stations and equipment maintenance facility(ies) will be part of the next phase of the project which is not yet funded. Opportunities for station development, including concessions, would be identified and considered a benefit to the project. Iowa DOT will work closely with the local communities in the planning for the station sites.

Date	Topic(s)	Comment	Response
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5/2/12	Station Facilities & Upgrades; Routes - Routing Process	I have submitted comment previously online regarding the use of Iowa Interstate (Old Rock Island) Railway. Some additional ideas I have are: 1) Considering a raised line to by-pass the "diamond" at SE 18th St. 2) Developing a hub station at Bonneville, as DMACC west is nearby, Waukee is only 6 miles away, Jordan Creek Mall is just up the hill and that is the fastest growing are in the DSM metro area. There is an existing 9,000 ft siging at Booneville and a lot of open land is nearby. The grade is flat and straight. Iowa Interstate already use Booneville to pass their trains each night. 3) to get people to be "hooked" on the idea of using rail transportation, perhaps a rail version of a "park & ride" from the Iowa State Fair to somewhere near Altoona could be tried. Rail lines already exist near the fairgrounds and would encourage people who have never travelled by train to support passenger train service.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of the next step for this project, we will be reviewing the infrastructure needs as well as potential station locations for future service between Chicago and Omaha. We will not do the detailed design analysis until after this project is completed and the Tier II study starts (not yet funded). Planning for services to support special events, such as the Iowa State Fair, would occur as opportunities arise once the service is implemented. Thank you for all of your ideas and we will take all potential alternatives into consideration.
5/2/12	Rail - Speed	It's got to be really fast or it won't compete against fast cars	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of this study, we will evaluate the proposed service at various speeds including 79, 90 and 110mph. At this point in the study, we do not know what the ultimate speed will be for the service, but we do realize it is extremely important that any new passenger rail service must compete with automobile travel from Chicago to Omaha to be a viable alternative mode of transportation.
5/2/12	Routes - Route 4A; Transportation - Bus Service; Rail - Speed	4A provides the most access to population and would be the most cost effective. It would be preferable if trains could run at 110 mph for maximum competitiveness. I would use this train for maximum mobility around Iowa. The use of the Iowa Interstate Railway would probabaly be more conducive to 110 mph running. Would it be possible to increase mobility and ridership with dedicated feeder buses?	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Based on your comment, you are likely aware that we are evaluating operating at various speeds including 79, 90 and 110 mph and the associated infrastructure improvements needed to support the operating speeds and frequencies. This analysis must be closely coordinated with the host railroad so as to not interrupt the current and planned freight service. At this point in the study, we do not know what the ultimate speed will be for intercity passenger train operations, but will have a better understanding when the Draft EIS (Environmental Impact Statement) is completed in Fall 2012. Also, as part of this study, we will look at feeder bus opportunities at several locations adjacent to that can connect to the 4A route.
5/2/12	Routes - Route 4	Both as a college student and a leisure traveler I this this rail would be a huge improvement over the current road and air options. From a business traveler perspective I worry that the time it take to get from say Des Moines to Chicago would not be an improvement over driving, therefore making the limited cost – benefit insufficient. The rail would have to be both cheaper than air travel and quicker than driving to truly make it useful. The existing Amtrak service does not achieve this. The new rail system does not seem to adequately reach the biggest urban areas. A train timed for a minimal layover in Omaha to then continue west on Amtrak to Denver or onward would be hugely beneficial. As a former Omaha resident, I'd like to know where the Omaha station would be, especially since the Osceola Amtrak station is so inconvenient for a Des Moines resident.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of this study, we will be evaluating operating at various speeds including 79, 90 and 110 mph. At this point in the study, we do not know what the ultimate speed will be, but we do realize it is extremely important that any new passenger rail service be competitive with automobile travel from Chicago to Omaha to be a viable alternative mode of transportation. It is very likely that this service will be competitive with the current fare structure for air travel from airports in Iowa. The current Amtrak trains that travel through Iowa are considered long distance services, traveling between Chicago to the West Coast. This new proposed corridor service is considered intercity passenger rail which varies in many ways and thus the service provided will be different. The long distance service does typically run through Iowa at late hours in the evening so it is unlikely that the intercity services and long distance services will overlap closely, but all of those details will have to be determined as part of the Tier II study, which is not funded and will occur at a later time.

Date	Topic(s)	Comment	Response
5/2/12	Public Involvement; General; Routes - Location Specific - Grinnell	Great plan for the future of Iowa and our country. Legislative support may be needed and each of us should contact all representative and particularly the Republicans. The favored route brings so many options to our community of Grinnell. The Iowa Transportation Museum actually promotes and works to build support of passenger rail. We look forward to being a depot stop and have space available at the museum property site. Our first "phase" of construction is complete. Let us host a meeting to educate our area and the future of this dream!	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
5/2/12	Rail - Speed; Noise - Loud Rail Traffic; Rail - Freight Rail; Routes - Location Specific - Des Moines; Routes - Location Specific - IA City; Cummulative Impacts	The route from DSM to Iowa City would put the train literally in my back yard. Currently there are freight trains that travel on this, but no doubt this would add more train traffic and be louder. I'd like to know what impact this would have on a residential area, feet from houses. Will they tear up the tracks, how fast will the passenger trains go? How much noise will they make? We need to know the impact on our homes and lives before a decision is made!! Will someone please respond to me.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of the environmental analysis related to this study, we must determine noise and vibration impact on the corridor. We are currently not within that phase of the project so it is a bit difficult to answer some of the questions you have posed, but we can answer the following: 1) We are considering between 2 to 7 round trips daily in each direction for the proposed service. 2) Because this service will be supported by the state, we will be responsible for any additional maintenance on the track that would be necessary as part of the new passenger rail service. The track standards for passenger rail are quite different than that for the current freight that is on Route 4, and so we will be required to maintain the track conditions at a higher quality standard for many reasons (including safety and higher operating speeds). As well, we will be required to install lights and gates at every public crossing along the entire route, including at crossings that now only have lights and/or passive signage. If the speeds are ultimately higher than 79 mph, there will be a requirement to install additional safety measures at crossings. These crossing improvements will ultimately help make each crossing safer for the public. 3) We will be evaluating passenger train speeds of 79, 90 and 110 mph for the new service. Actual passenger train operating speeds will be determined based on the track and signal infrastructure in place on the corridor.
5/2/12	Routes - Route 4; Routes - Route 2; Routes - Alternative Route	I suggest a wise market-driven route would be the red route from Chicago to Several miles west of Cedar Rapids, there making a new connection to the blue route as its closest point, and continuing thru Des Moines. A response is optional.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.

Date	Topic(s)	Comment	Response
5/2/12	Use of the Project; Routes - Location Specific Comment	Thank you for the oporotunity to comment. I plan to use the rail system as it develops. I would have liked to see the Iowa Falls route along the former Illinois Central utilized. Perhaps an overpass might be used over the Union Pacific Kansas City line.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. We studied several routes as part of this analysis. Since it is anticipated that the State will have limited resources for the next several years, it was necessary to select just one route to determine implementation steps to initiate intercity passenger rail services from Chicago to Omaha. With all of the things we considered (environmental impact, cost of implementation, length of route, population served by the route, host railroad freight capacity concerns and other factors), it was determined that Route 4A would best meet that criteria as we move forward with this first initial route across the state. We are hopeful to be successful in implementing this service over the next several years and then we will discuss potential additional routes serving the state.
5/3/12	Routes - Alternative Route	Please consider Omaha to Denver too! Thanks!	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
5/3/12	Public Involvement; General; Transportation - Alternative Transportation Mode	Need alternative to auto and plane. Need to get going instead of studying. How can I get more involved?	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. In an effort for Iowa to become eligible for future federal funds, we must prepare an EIS (Environmental Impact Statement) and submit it to the FRA (Federal Railroad Administration) for the Chicago to Omaha corridor. If we do not follow the guidelines set forth by the federal government, we will not be eligible for any future federal funding. The State of Iowa recognizes that to implement this project, we will need the assistance of the federal funding assistance. You can get involved by visiting the following website: http://www.downtowndesmoines.com/pages/passenger-rail to see how the city of Des Moines is getting involved with the passenger rail effort. Contact information for the City of Des Moines can also be found on this website. We appreciate your continued support for this project as the study phase is completed, and hopefully as we enter into the service development program phase with future federal and state funding authorizations.
5/3/12	Station Facilities & Upgrades; Routes - Location Specific Comment	Omaha's Station: Former Burlington Station (vacant) - high speed station - Amtrak Sta - Greyhound Sta - Metro Bus Sta - Light Rail Sta (Street Car) - Taxi Sta - Restaurants - Offices for new transportation Hub. Thanks!	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Economic feasibility is being evaluated as part of the study related to the communities that will have intercity passenger rail stations on the Chicago to Omaha corridor. The initial high-level economic analysis related to the cities to be served includes identifying opportunities for intermodal connections. The actual details related to the station sites, designs, intermodal connections, and economic development are part of the next phase Tier II study which is not yet funded.

Date	Topic(s)	Comment	Response
5/3/12	Rail - Operations; Station Facilities & Upgrades	It is important to look at Missouri River crossing options – Can the swing bridge be used? – Can the U.P. expand their bridge in Blair abd off-load freight traffic from the downtown bridge? Are there long-term benefits by connecting to Eppley Airport from a Multi-modal standpoint? Similarly, are there long-term benefits from the standpoint of regional transit by connecting a portion of western Iowa to downtown Omaha and the expanding transit network in Omaha?	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. The Tier I EIS will address the passenger rail corridor alignment between Council Bluffs and Omaha, which includes the Missouri River crossing. A Tier 2 environmental document, which is not funded, will need to be prepared to determine the preferred alternative for the Missouri River crossing. This will include review of expanding the UP bridge at Blair to accommodate freight traffic, allowing use of the UP bridge at Council Bluffs over the Missouri River for passenger rail. Modifications to existing structures (including the swing bridge) or construction of new structure(s) over the Missouri River will be a significant cost element of the project and will be evaluated in Tier 2. Multimodal connections will be analyzed in the Tier 2 environmental documents and preliminary engineering for the preferred locations for station sites. Major communities throughout the study area have expressed their support of the project based on the long term economic and quality of life benefits generated from multimodal connections; revitalization of urban areas near future stations by attracting higher-density and mixed use development, which provides new employment and housing options; and linking cities along the corridor, thereby improving mobility and expanding employment opportunities over larger geographic areas which benefits employers by expanding the labor market and offering employees more choices of where to live.
5/3/12	Routes - Route 4; People with Disabilities; Transportation - Highway Congestion; Train Ammenities	Thank you for all your hard work! Your doing the right thing for us and our children. As there has been a great past history of rail travel in our area, its renewal is imparative. As I look all the schedules. I prefer the BLUE route based on population density Omaha, CB, Des Moines, colleges and proximity to I-80. Your planning on all levels especially environmental concerns are important. Since the Blue route is parallel to the Interstate. How many cars, or trucks would you take off the road? What shipping opportunities would I have shipping Omaha to Des Moines – east? With wifi and other conveniences how can we compete against the airline to make a better ride? Since I teach special needs students what about the advantage of wheel chair bound persons and their needs. For what it costs to build an interstate per foot rail should have an advantage. Thank you Iowa DOT for your time and effort. I will promote your agenda when important with family, friends and politicians.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of the Service Development Plan for the preferred alternative, a benefit cost analysis will be prepared that will include transportation benefits which consist of efficiency and reliability of movement of passengers or goods; reductions in operations and/or maintenance costs for existing services (i.e., highway maintenance costs); reductions in vehicle operating costs; mobility and low income mobility; environmental effects; accident reduction; and congestion relief. Shipping opportunities would need to be discussed with the freight railroad and are not part of this study; our effort is solely related to planning for intercity passenger rail services. The new passenger rail equipment that would be used for this service would have wifi capabilities. There would also be a café and state-of-the-art accommodations for a comfortable ride. All of the equipment and stations will be ADA accessible.
5/3/12	Station Facilities & Upgrades; Agency Coordination; Routes - Location Specific Comment	The selected route clearly makes the most sense. As the EIS process move forward, I fell it would be advantageous to approach Omaha city officials and NDOR staff about the possibility for refurbishing the abandoned Burlington Station in Omaha. The potential for it to serve as a high end terminal station with economic development consequences might persuade Nebraska to more actively engage and endorse the project.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. We have approached the Nebraska Department of Roads concerning this study and plan to discuss station logistics with the City of Omaha as well. Due to freight rail congestion, there are some complexities that need to be addressed with the host railroad to cross the Missouri River from Iowa into Nebraska. Discussions are ongoing with the host railroad and will continue as we move forward with the planning for this project. Decisions related to crossing the Missouri River will be made as part of the next Tier II study phase, which is not funded.

Date	Topic(s)	Comment	Response
5/3/12	General; Routes - Route 4A	From a 10,000 foot view, the route 4a looks good. If the data that supports the "screening findings" is accurate than it looks fine. 26 miles separates 4 and 4a, not sure the difference in cost, but I imagine it is cheaper to go with less miles (unless terrain or other factors cancel that out). I look at this from the view of Chi to Omaha though, so the stopping points in Iowa do not really mean much to me; Citizens from Iowa/Illinois may feel more loyalty to their respective cities. It would be nice if we could compare with each alternative. 1. total costs; 2. theoretical travel speeds/times; 3. How this will be funded in the future	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. As part of this analysis we have reviewed all initial 5 routes with some of the following screening criteria: environmental impacts, cost of implementation, length of route, population served by the route, host railroad freight capacity concerns and other factors. Based on the criteria used as part of the study with FRA's involvement, Route 4A was deemed as most reasonable and feasible. We anticipate that we will need to seek federal funding for implementation of the service with a state matching funds likely required.
5/6/12	Transportation - Current Train Traffic; Rail - Speed	Would the current Amtrak service be eliminated if this project is approved? IMO, two competing rail services between Chicago and Omaha are not financially viable. At what speed would this rail service travel? IMO, this service needs to travel at speeds in excess of 100 mph in order to compete with air service and be successful for the long term. If the speed is only 50-60 mph, people will continue to drive their cars. Please respond.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. There is no intention of eliminating the current Amtrak long-distance services, traveling between Chicago and the West Coast, in Southern Iowa if this service is implemented. The current long-distance Amtrak service is not funded by the state of Iowa, it is solely operated by Amtrak in coordination with the host railroad, BNSF, as part of Amtrak's core network. This new proposed service would be state-funded with coordination from Amtrak and the host railroads, but would run solely between Chicago and Omaha, unlike the long-distance service. We are looking at various speeds for this route, including 79, 90 and 110 mph. We understand the need to be competitive with the automobile and so it is very important to create a service that can be used by the traveling public as a transportation option. More information concerning these details will be available in the Fall 2012 when we release the draft Environmental Impact Statement (EIS).
5/7/12	Drugs/Crime; Funding of the Project; General; Mailing List Request; Transportation - Highway Congestion	I had a lengthy conversation with a gentleman from Cedar Rapids today. He discussed his concern with new passenger rail service from Chicago to Iowa and so I have listed some bullet points below based on what I captured from the conversation. He wanted the subject of his concern to be called "Hypothesis of Concern". - Most of his concerns were about the increase in crime in the Cedar Rapids that has attributed with additional folks from Chicago moving to the area lately. He is worried that the new passenger rail service could help increase this activity/problem. - Concerned that if we introduce new passenger rail service, Iowa won't be the best kept secret in the country anymore. - Encouraged us to look at improving highways near Cedar Rapids and Iowa City to help with traffic congestion versus new passenger rail. - Concerned about government spending for a new project like this versus upgrading our current highway system. He did seem to want to get a better understanding of the project so he also asked to be included in our mailing list request.	Amanda Martin, Iowa DOT, talked with a gentleman from Cedar Rapids by phone on Monday, May 7, 2012, regarding his concerns related to initiating intercity passenger rail service on the Chicago to Omaha corridor. His concerns are documented in Public Comment #144. In order to provide the gentleman with information on the project as it progresses, he has been added to the mailing list for the Chicago to Omaha Regional Passenger Rail System Planning Study.
5/16/12	Rail - Speed; Transportation - Current Train Traffic; Rail - Improvements; Routes - Route 4; Rail - Operations; Use of the Project; Routes - Location Specific Comment; Station Facilities & Upgrades; Rail - Freight Rail; Corrections to the Document; Routes - Alternative	Comment superceded by resubmittal on May 21, 2012. Due to the length of the May 21, 2012 comment email and length of the response, they are reproduced in full following this table.	Comment superceded by resubmittal on May 21, 2012. Due to the length of the May 21, 2012 comment email and length of the response, they are reproduced in full following this table.

Date	Topic(s)	Comment	Response
5/17/12	Routes - Route 3; Routes - Route 5; Rail - Freight Rail; Routes - Route 4	I have seen the different routes, and I think it is down to the IAIS and the old Milwaukee Road. The UP line through Ames and Boone has rigorous freight traffic, the BNSF in Osceola already has passenger rail going over it, and the CP through Fort Dodge is WAY too far from Des Moines (although I think they are working on a Chicago to Dubuque line). The IAIS is good due to the fact it hits all the major locations, however it is not a good choice for high speed rail. It is noted that the IAIS's line basically weaves around I-80 like a snake, which will limit it's speed. The old Milwaukee Road right of way is essentially a double track straight shot across Iowa, the old streamliners were able to go up to at least 120 miles per hour on that route. It is also abandoned, which means newer and better track could be put in without having to upgrade current track. However checking the route on Google Earth, there are a couple houses and rail trails occupying some space. It doesn't serve Des Moines directly, however a light rail or bus line could be put in to connect it to wherever the station is (Slater, Woodward, Madrid?) To conclude, the IAIS would work great for a commuter rail. However if you're aiming for a real high speed system, the Milwaukee Road's right of way is your best bet. A reply is not required, however it would be nice for me to know whether this is being considered or if it goes straight to the trash	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. After careful evaluation of the key criteria identified by the Federal Railroad Administration (FRA) for developing a high-speed intercity passenger rail corridor, Route Alternative 4-A has been identified as the corridor meeting the project "purpose and need." Route Alternative 4-A is composed of the BNSF-owned corridor between Chicago and Wyanet and the Iowa Interstate Railroad-owned corridor between Wyanet and Council Bluffs. Key criteria evaluated included: 1) Purpose and Need including travel demand, ridership and revenue forecasts, preliminary running time, and competitive and attractive travel modes; 2) technical feasibility including passenger and freight capacity, and economic feasibility related to alignment, structures, and grade crossings; 3) economic feasibility; and 4) environmental concerns.
5/19/12	Public Involvement	This comment form does not let us see or interact with other comments?	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.
5/21/12	Support the Project; Transportation - Bus Service; Routes - Location Specific - Des Moines; Routes - Location Specific Comment; Station Facilities & Upgrades	I am very much in favor of a passenger rail system in Iowa. Specific recommendations and ideas I suggest are: 1. Plenty of long-term parking – hopefully free. This is very important. People have to be able to access the train. 2. I can see the logic of having the rouge to through Des Moines, but I hope you will carefully consider going through Ames. It is home to the Iowa DOT, the Animal Disease Lab. and most importantly, Iowa State University. Ames also has a major medical center. Perhaps it would be possible to go through Ames some days and Des Moines other days. 3. Whichever city it goes through, could a shuttle service be coordinated between that city and the other one? If the train goes through Ames, I'll be able to use it. If it goes through Des Moines, it would depend on being able to get to and from my home and the train station in a timely manner. I'm sure this would be true for many people in both cities.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. Route 2, which goes through Ames was considered, but is highly congested with freight traffic and cannot handle the addition of passenger trains. We do understand that there is a large population within the Ames metro area that would be served by passenger rail so we will research the possibility of introducing a feeder bus system from Ames to Des Moines. This bus service is being studied as part of the project and would look into allowing passenger rail customers to buy one ticket through Amtrak to travel both on the bus from Ames as well as boarding the train in Des Moines for travel either east or west, depending on the customer's preference.
5/21/12	Safety - Grade Crossings; Transportation - Current Train Traffic; Rail - Speed; Routes - Alternative Route; Rail - Upgrades; Rail - Freight Rail; Routes - Location Specific Comment; Station Facilities & Upgrades; Rail - Operations; General	Due to the length of the comment email and length of the response, they are reproduced in full following this table.	Due to the length of the comment email and length of the response, they are reproduced in full following this table.

Date	Topic(s)	Comment	Response
5/21/12	Rail - Speed; Cummulative Impacts; Project Need; Transportation - Alternative Transportation Mode; Funding of the Project; Rail - Freight Rail; Project Purpose; Transportation - Highway Congestion; Economic Impacts; Transportation - Bus Service; Transportation - Current Train Traffic; Rail - Operations	Purpose and Need: Is travel demand really increasing that much? FHWA travel monitoring trends show nationwide vehicle miles traveled levels the same as 7 years and 9 months ago. Expansion of highways may be increasingly more costly and can create severe impacts on adjoining properties. May be so, but. High Speed Rail is likely much more expensive per dollar of user value created. See CHSRA and their ballooning costs. High Speed Rail can also create sever impacts to adjoining properties. Please document based on study findings to date evidenced of reduced impact via use of HSR compared to other reasonable and prudent modes. The cost of rail is less influenced by fossil fuel prices is irrelevant if the fluctuation other modes is still lower than the expected price of high speed rail including capital subsidies and operating subsidies. Purpose and Need Slide II: Are other alternatives such as eliminating current mode bottlenecks and assisting curbside bus service being considered. These two alternatives may at a much lower price provide a much higher return on investment? Reducing travel times compared to an automobile seems predetermined that rail is the solution. What if reducing travel time of the automobile is more efficient in terms of total cost including assessing the externalities of all modes considered. How do you know their will be reduced fuel compared to the automobile? Does that assess the price before or after consideration of subsidies to all modes under consideration? Improve travel reliability is an excellent goal as long as cost including subsidies is used to assess the reliability. Improve ride quality and comfort is an excellent goal as long as cost including subsidies is used to assess comfort. By how much and at what cost would highway and airport be reduced. Routes: What about routes for other modes? What about bottleneck corrections for existing modes and along existing routes between termini. Screening does not contain comparison to the potentially reasonable and feasible alternative of providing additional capacity to existing modes between the termini specifically at bottlenecks. Screening does not address potential curbside bus service. Screening use of High, Medium and Low ridership is not placed in context. Suggest you use High ridership as no subsidy for capital and operating costs. Medium as no subsidy for operating costs and low requiring subsidy for both operating and capital costs. Economic feasibility seemed to need more substance. Are there any funding sources for HSR when compare to value other alternative will provide! What are the impacts to existing freight lines and how are they shown. Tier 1: The selection of the Tier I route should not be made until assessing other potentially reasonable and feasible modes other than HSR. Other Passenger Rail Corridors: Did these others compare return on investment versus other existing modes? The big question is how you find the funding for the improvements. Planning without consideration of funding will and what value is demonstrated by users spending money to purchase the rail service will likely lead to no project or a wasteful project. Consideration of Environmental benefits should be an important part of the analysis, but that cannot be done without establishing the Env. costs of all the potential reasonable and feasible options.	Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study. The Tier 1 NEPA analysis of alternatives included consideration of other travel modes such as cars/trucks, buses, and airplanes. Projected changes in ridership based of the Project were evaluated and compared to future baseline conditions without the Project. Service alternatives (frequency of trains, station stops, and speeds) were considered, with some carried forward for detailed analysis in the Tier 1 Service Level Draft EIS. Potential impacts to the human and natural environment, both adverse and beneficial, were evaluated as part of the Alternatives Analysis and will be documented in the Tier 1 Service Level Draft EIS.
5/21/12	Routes - Location Specific Comment; Use of the Project; Rail - Operations	I live in Dubuque, Iowa. If I was able to complete a trip from Dubuque to Chicago in a maximum of 5 hours, including an automobile drive from Dubuque to where I could catch the train, then I'd probably use this service four times year, round trip.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.

Date	Topic(s)	Comment	Response
[redacted]			
5/21/12	Rail - Freight Rail; Use of the Project	I have long been in favor of a rail line across the busiest cities in Iowa. For one thing there are always college students who need to get back and forth from home to college. However we need to make sure that the passenger train does not sit in the Chicago rail yards - second to a freight train - as can heppen now - we have used the train. We go to Chicago a couple of times a year.	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Your comment has been submitted. Public comments provide valuable input and contribute to the development of a complete environmental analysis. The Tier 1 Environmental Impact Statement (EIS) and planning effort will take approximately 18 months to complete. We will be collecting comments on the draft alternative analysis through May 21, 2012. All comment received will be reviewed and considered. We appreciate your input and participation in the project.

Comment:

From:	[redacted]
To:	email@chicagotoomaha.com
Subject:	Comments on the Draft Alternatives Analysis Report - Revised -Part 1
Date:	Monday, May 21, 2012 5:42:25 PM
Attachments:	Chicago to Omaha Exhibit 1.pdf Chicago to Omaha Exhibit 2.pdf TEMS for Iowa DOT - Chicago to Omaha Alternatives Analysis - 1998.pdf
Importance:	High

Attachments available upon request

Gentlepersons:

I live in Villisca, Iowa. I am writing as a private individual. I apologize for including so many references, but at the Council Bluffs Open House, it became evident that not everyone had seen or had access to some of them, so I have incorporated references to documents when available online and attached copies where not generally available. Because of the size of some attachments, these comments are being sent in multiple parts.

This revision supercedes my previous submission and I request that you please address only the last revision of my comments you receive. I apologize for providing more than one edition of comments, but have been trying to provide comments within your time windows.

The Draft Alternatives Analysis Report
http://www.iowadot.gov/chicagotoomaha/pdfs/DraftAlternativeAnalysisReport.pdf
can be improved by

- o being serious about higher speed rail and even high speed rail,
- o being less pusillanimous in its approach to maximizing the population served,
- o paying editorial attention to not overstating what is being studied and achieved,
- o carefully labelling the consultants and firms who contributed to the report at least on the title page, and
- o showing the actual values of the base in comparisons is included as well the comparative values throughout chapters 6 and 7 most notably in tables like those on pages 6-29, 6-31, 7-3 and 7-4

In seeking to maximize the overall benefit of rail service between Chicago and greater Omaha, one needs to maximize the population served, particularly as one moves further westward and one needs to maximize average speed over the route. By following these two guidelines, although the capital costs increase with population served and speed, there are INCREASING RETURNS TO SCALE as speed increases, leading to reduced operational subsidies, then to the revenues fully covering depreciation and replacement of equipment, and finally at high enough speed leading to the revenues paying off the initial capital costs.

In support of these points, I include several documents.

- o A TEMS analysis of the economics of different speed regimes in the DC to Hampton Roads area
- o The SNCF's deadly serious proposal for HSR200 in the midwest (They called it 220 but they limited maximum operating speed to 200 mph)
- o A study by TEMS comparing results under HSR150 and HSR220

o A table comparing passengers, speed, and revenues over the same routes for current Amtrak, MWRRI, SNCF HSR200 , TEMS HSR150, TEMS HSR220, and my CSS240. This is a preliminary draft from a detailed analysis forthcoming within the next two months. The CSS240 service in the table assumes 240mph top operating speed, .1g/2mphpersecond acceleration, and end point networking as shown in the Omaha example below.

The first two comments are directed toward the overall speed issue. The remaining comments are directed toward significantly increasing the number of people served west of Chicago by loosening the constraints on the choice of alignment. First, by moving the termini from the center to the edge of the greater Omaha area and the greater Chicago area. A well selected station configuration will add over 300,000 people in Nebraska and 100,000 in Iowa to the service area and increase the passengers crossing the Iowa-Nebraska border by 50 to 70 per cent. Then, by revitalizing abandoned right-of-way, doing selective greenfield construction, and running express and local service on different routes, another 600,000-plus people in Iowa can be added to the approximately 1,000,000 served by route 4a.

1. **SPEED -**

Passenger perception of speed is driven by the overall elapsed time it takes to complete their journey. While the curve or ridership to speed is relatively smooth, it has two important knees. The first is when the end to end speed of the journey including getting to station, waiting for train, ... is less than or equal to the driving time. The second is when the end to end speed is less than or equal to that for air travel; if one can get rail time within air gate-to-gate plus TSA 1 hour and match or exceed frequency, rail quite effectively displaces air.

By pushing the speed being projected to somewhere between HSR220 and HSR240, a back-of-the-envelope calculation suggests that service to Omaha would be fast enough to displace 60 plus percent of air service and about 17 percent of auto trip. . Ridership over this long route at an average fare of 20 cents per mile, would be sufficient to generate approximately $1 Billion per year in revenue and operate profitably after paying all expenses and depreciation and paying back the capital with interest using 30 year bonds at present federal rates. This study would be far more interesting and worthwhile comparing top speeds of 79 mph, 110 mph, and 240 mph; if that option exists, one would strongly recommend performing analyses in those speed regimes in the later stages of this study.

a. To attain good average speeds over the route, one needs to be able not just to attain high speeds but <u>to sustain</u> high speeds. The performance of the rolling stock is important, but the actual alignment, elevation, and condition of the roadbed and signalling system are controlling.

.1. The **Employee Timetable** shows elevation, curvature, ... for a railroad. It would be helpful to have this information included as an appendix in the next report in this series, if not in the present one.

.2. It is often tempting to believe that one can speed up an alignment merely by increasing the cant of the track in curves. This helps by optimizing the tracks for a higher speed. When operating both passenger and freight service over an alignment, the difference in proposed speeds is such that setting the cant at optimum levels for passenger service will produce track that is so canted as to make the freight operator at least uncomfortable and often legitimately lead him to reject the proposed cant for reasons of safety.

.3. As one speeds up service over an alignment, the need to straighten curves rather than just bank the track, grows with the square of the speed. As a result
an important step in any evolutionary plan should be to straighten the alignment by eliminating speed constraining curves as one improves and double tracks it. An actually not unreasonable goal would be to eliminate all curves greater than 3 degrees (and outside of cities almost all curves of 0.5 degrees or more) as one double tracks, installs cross overs, resurfaces, . . . Similarly one needs to eliminate speed limitations on bridges . . .

.4. It is critically important to grade separate rail to rail interactions if at all possible. Grade separation of rail to road (sometimes through road closure) should also be pursued whenever alignment is significantly revised.

.5. When running passengers over a smaller freight railroad like IAIS, it may be economical to separate tracks by 40 feet and move to PTC over full bidirectional CTC and operate passenger service at a higher speed than otherwise expected.

.6. Analysis of what is required to enable high average running speeds (100 mph or better for conventional equipment; 200 mph or better for true high speed equipment) all the way into Chicago and through the Quad Cities, Des Moines, and Council Bluffs is necessary if good overall average times are to be achieved.

b. The study is clearly stuck at a 110mph max speed. However, a step to higher speed rail can be made by focusing on the average speed over the entire run. Even with less than ideal track attention to two unmentioned characteristics of the rolling stock can dramatically shorten overall journey times -

.1. The rate of **Acceleration** realized by the proposed rolling stock has a dramatic effect on overall speeds and how many stops can be accommodated. Specifying equipment capable of maintaining uniform accelerations and decelerations of .1g (2mph per sec) all the way to top speed, and supporting that acceleration and speed on a 2 per cent grade, significantly changes the selection of stopping patterns and the potential running time. - A smoothly initiated and concluded .1g acceleration;deceleration (i.e. one with smooth 3rd and 4th derivatives) is far more comfortable for passengers than the jerky less than .025g acceleration/deceleration often experienced with conventional rail rolling stock. And, an acceleration of less than .15g, particularly when smoothly initiated and concluded, is low enough that it will not interfere with passengers freedom of movement including standing. - Equipment with .1g acceleration through the entire speed regime to 120 mph is commercially available from German, Japanese, and Spanish suppliers. - Assuming that the alignment and rolling stock support 120mph operating, accelerating and decelerating at .1g a station stop adds 1min plus the dwell time in the station to the journey. If one assumes level loading platforms, dwell times of 1min are practical and dwell times of 1min30secs gracious if not leisurely. Assuming a 1min30sec dwell time, and a 20 sec safety factor, adding a stop to a .1g capable 120 mph train adds 2min50sec to the schedule. Thus, for example, one could add stops in Atlantic, West Des Moines, and Davenport with a total increase in scheduled time of

8min30sec.

.2. **Passive or active TILT** permits higher track super-elevation AND significantly increases the realized speed when following more curved than desirable alignments. It also increases passenger comfort. - Note the experience with Talgo equipment in the Pacific Northwest, with Pendolino equipment in Helsinki-St.Petersburg service, and with positionally-activated active tilt in Japanese narrow-gage service.

.3. Clearly achieving HSR is a phased effort. The rolling stock used to extend the new Chicago to Quad Cities service to Iowa City should be compatible with what Illinois is going to use from Chicago to Quad Cities. (One probably could continue using this equipment and double Iowa ridership by extending the service northward the 28 or so miles from Iowa City to Cedar Rapids and turning it around there.) However, in later phases when service is being increased from twice per day each way to higher frequencies and extended westward to Des Moines and Omaha, equipment with better acceleration and curve speeds, needs to be very strongly considered. In other services such an equipment choice has reduced operating times up to 30%.)

2. **Speed comparisons -**

I was struck by the number of people at the Council Bluffs open house who explicitly believed that high speed rail is something significantly faster than conventional rail or auto travel; they correctly intuited that high speed rail should be competitive with air for distances up to five hundred miles, especially given the need to add a TSA hour to gate-to-gate times. Further, they are confused by the suggestion that a 70 or 90 or even 110 mph maximum speed represents even higher speed rail. As shown below, the historic time from Chicago to Omaha for conventional rail and for auto travel is around 7 and a half hours. If the proposed service is not making the journey from Chicago to Omaha in significantly less time than 7 hours, it is not in any way higher speed service than Midwesterners have been experiencing for more than three quarters of a century.

a. **Historic Rail -** Omaha is the virtual midpoint of Chicago to Denver passenger service. By the late 1930's, when passenger rail service was still PROFITABLE because it was faster and more reliable than competing modes of transport, three railroads were competing for passengers from Chicago to Omaha.

o From **1936** to 1952, Chicago, Burlington, and Quincy train #10, the Denver Zephyr ran every day from Omaha to Chicago in **7 hours 51 minutes** for an average speed including stops of 63.44 mph.
http://www.streamlinerschedules.com/concourse/track8/denverzephyr193809.html

o The Chicago and North Western ran competitive service to Omaha that continued westward on the Union Pacific. (In the years since UP has purchased C&NW and this route is UP all the way to Chicago.) C&NW times between Chicago and Omaha were most competitive for the "City" trains, which could run as long as 17 cars. In **1938**, C&NW train #103 the City of Los Angeles westbound took **7 hours 36 minutes** form Chicago to Omaha. C&NW train #104, the City of Los Angeles eastbound took 7 hours 45 minutes from Omaha to Chicago.

http://www.streamlinerschedules.com/concourse/track5/cityla193809.html

o The Rock Island (officially Chicago, Rock Island, and Pacific) had notoriously twisty track and not always the best maintenance. The Rock Island also lacked its own bridge across the Missouri River; they had to use the Union Pacific's tracks from Council Bluffs to Omaha, which slowed things down. (The Rock Island alignment is now owned by Metra from Chicago to Joliet and by IAIS the rest of the way to Council Bluffs.) In spite of these adversities, the Rock Island introduced a competing service the Rocky Mountain Rocket in **1939**. Rock Island train #7 the Rocky Mountain Rocket westbound took 9 hours from Chicago to Omaha via the Quad Cities, Iowa City, Des Moines and Council Bluffs. Rock Island train #8 The Rocky Mountain Rocket eastbound took **8 hours 44 minutes** Omaha to Chicago. http://www.streamlinerschedules.com/concourse/track8/rockymtrocket194106.html

b. **Today Amtrak** serves only the former CB&Q route (now Burlington Northern Santa Fe). Seventy-five years later, they have slowed down service on the CB&Q alignment so that

o In **2012** Amtrak train #6, the California Zephyr eastbound, takes 9 hours 36 minutes; Amtrak train #5 the California Zephyr westbound takes **8 hours 45 minutes** from Omaha to Chicago, still nearly an hour longer than the Denver Zephyr took on the same tracks. http://www.amtrak.com/servlet/ContentServer/Page/1237405732505/1237405732505

c. **Proposed Rail -** It is not clear that proposed services are going to match even Amtrak's current leisurely timings. http://www.qcrail.com/Iowa%20City-QC%20feasibility%20study.pdf

o The **new service** between **Chicago and the Quad Cities** will take 3 hours 52 minutes from Chicago to Moline, **more than an hour longer than the Rocky Mountain Rocket**'s 2 hours 47 mins more than 70 years ago.

o When the **new service** is extended to Iowa City under Scenario A6, BNSF-IAIS 79mph, found on p. 10 of the Executive Summary of the Feasibility Study, it will take 4 hours 58 minutes to travel from **Chicago to Iowa City**, still **more than an hour longer that the Rocky Mountain Rocket**'s 3 hours 55 minutes, and without meal or beverage service. These times are longer even though the alignment has been shortened by approximately 20 miles. (In fact, re-establishing any rail service between Iowa City, the Quad Cities and Chicago is an important step. But, it is a first step, and in studying HSR from Chicago to Omaha a series of FURTHER STEPS need to build upon this first step.)

d. **Auto Today** - Google maps proposes legally driving the 468 miles from Amtrak Station Omaha to Chicago Union Station in **7 hours 40 minutes.** I and many other drivers tend to make the journey in a bit less time. (The draft study claims 8 hours 30 minutes driving time.)

e. **Air Today** - Ramp-to-ramp times between Omaha and Chicago are between 1 hour 20 minutes and 1 hour 30 minutes, and the TSA hour seems here to stay. So, any rail service making the journey in **2 hours 30 minutes** or less is fully competitive and should be able to garner 60 per cent or more of air travelers (30 percent or more are connections which are harder to displace.) Because of the time getting from gate to take off, from take off to altitude, getting out of airport flight patterns, ..., the time for almost any air journey is at least an hour 10 minutes, which with TSA time, means two hours 10 minutes by rail is fully competitive, which will make rail the dominant high speed mode for any journey less than the cross-over point which would appear to be Omaha to Chicago, if rail is competitive Omaha to Chicago.

3. THE ENDS OF THE LINE

Ending an alignment in a downtown terminal almost always diminishes ridership. So, fixing the termini of the Chicago to Omaha alignment beyond the downtown station can VERY SIGNIFICANTLY increase ridership especially in lightly loaded segments on the western end.

a. The WESTERN TERMINUS -

The alignment from Chicago to Omaha does not end in Council Bluffs, IA, nor should it end in today's Amtrak station in a less than ideal neighborhood near downtown Omaha. The greater Omaha end of the study alignment should be in downtown Lincoln, NE. One does not need to do a full environmental analysis West of the Missouri River, but the study should include an estimate of the within Nebraska traffic, the ridership across the Nebraska-Iowa border, and the ridership consequences farther east of two cases - first, terminating in the existing less than ideally located downtown Omaha station and, second, making the following station stops (from West to East) in the greater Omaha area.

As no alignment and no stations are presently proposed for the greater Omaha area, I offer the following proposal Illustrated in Exhibit 2 attached.

- Lincoln downtown
- Lincoln suburban (at the edge of the city which is incredibly well defined)
- Omaha suburban (at approximately the intersection of I80 and the UP mainline)
- Omaha downtown (on Dodge Street, probably at 13th)
- Eppley Airfield station (either subsurface or elevated but absolutely between the existing air terminal and the parking garage; *nota bene,* Eppley is actually in Iowa)
- Council Bluffs (may be omitted for expresses once the express cut off is completed)

The preferred alignment from Lincoln to Omaha downtown station follows the existing Santa Fe alignment straightening as required from Lincoln Downtown to its divergence from US Route 6 at approximately County Road 84. Continue parallel to Route 6 making a high speed convergence with I-80 somewhere north of Fairview Road. Continue along I-80 using the median as right of way if necessary until turning into Omaha suburban station just south of the UP elevated east-west line. Coming out of Omaha suburban station, follow the UP elevated line with appropriate straightening until diverting northward along 13th Street to the new Omaha downtown station at 13th and Dodge. (The UP elevated line was built for four tracks and the UP seems to be using only one on it at the moment. It could be possible to get their cooperation in letting two tracks be for passenger only in exchange for building and signalling the freight alignment back to two tracks as well.)

Phased implementation of new alignments out of Eppley would be desirable. Initially, the alignment would proceed southward from Eppley Airfield station, then westward across the Missouri River on a rebuilt CN railway bridge, going south to Council Bluffs and finally heading northeastward on the IAIS (former Rock Island) alignment. *Nota bene,* use of trainsets with control at both ends will greatly facilitate this routing. In a later phase, the alignment could be shortened by several miles and accelerated even more by proceeding northeastward from Eppley Airport station directly to a new bridge across the Missouri River, thence through significant civil engineering works to a high speed intersection with the IAIS proceeding northeastward between Underwood and Neola)

Benefits - One would expect that extending the service from Omaha to Lincoln, and adding stations in Council Bluffs, Eppley, and Omaha suburban to add 50 to 80 per cent to the number of passengers crossing the Nebraska-Iowa line. One would also expect a measurable regional traffic between Omaha and Lincoln that could fill otherwise empty train-sets during morning and evening commute hours. Factors leading to these results include the following.

.1. **Serving more people -** The Census 2011 population of Lincoln MSA is 302,157. Comparable population of Omaha MSA is 742,185, excluding the three Iowa counties which add 123,145.
http://en.wikipedia.org/wiki/Nebraska_census_statistical_areas

.2. As the data from passenger service to Detroit and Boston illustrate, having interstate trains make passenger stops going into and out of metropolitan areas can increase overall passenger loads by 30-50% for each side of the city served. In planning stops for the greater Omaha area. One would suggest stops in Lincoln, suburban Omaha, downtown Omaha, and Eppley Airfield (which is actually in Iowa). Connections to the south including Bellevue and to the east including Council Bluffs, need to be made using other intercity rail alignments and regional rail services.

.3. Factors that generate passenger traffic in excess of that predicted by raw population include the following -

(a). sites of large **university** (For example, Ann Arbor, MI) - The University of Nebraska is located in Lincoln has 24,593 students. (The most important schools for seminars and athletic events for Nebraska are Iowa State in Ames and U of Iowa in Iowa City.)

(b). **state capital** - Lincoln is the capital of the state of Nebraska; (The heaviest in-state traffic comes from Omaha; the most important interstate relations of Nebraska are with Iowa whose capital is Des Moines)

(c). average **wealth** - Lincoln, excluding students, is more prosperous per capita than Omaha

.4. Regional connections -

(a). Lincoln and Omaha are close enough to generate

commuter traffic. (The Nebraska Transit Corridors Study prepared by Wilbur Smith and Associates

for the Nebraska Transit and Rail Advisory Council and the Nebraska Department of Transportation in 2003 http://www.nebraskatransportation.org/docs/ntrac-final.pdf shows that even a minimal service running slower than automobiles would generate 140,000 to 200,000 passengers per year. A more frequent service running above 100 mph with .1 g acceleration/deceleration, should generate easily three times that traffic, i.e. 420,000 to 600,000 passengers per year. With a little artful use of equipment laying over, one can generate significant commuter revenue on the light end of the passenger load factors.)

(b). **Eppley Field** which serves Omaha, is the nearest major airport to Lincoln. Travelers from within a 150 - 200 mile radius of Omaha, including those from Lincoln, Fremont,Sioux City, Grand Island, and Sioux Falls, need a connection to Eppley.

.5. **Rough Quantification -**

(a). Extending GREATER OMAHA service to Lincoln will increase greater Omaha passengers crossing the Missouri River by at least 38% and Omaha-induced induced passenger miles by at least 41%.

(b). Adding Omaha suburban station and Council Bluffs station will each increase greater Omaha passengers crossing the Missouri River and Omaha-induced passenger miles by at least 10% for a total increase in passenger miles of at least 20%.

(c). The consequences of adding Eppley Airport Station are somewhat less clear, but for purposes of analysis let us assume that service directly into the airport terminal will add another 5 to 15% and arbitrarily select an 8% increase in greater Omaha passengers and Omaha-induced passenger miles.

(d) Utilization of stored trainsets to provide commuter service between Lincoln and Omaha at an average speed of 100 mph including stops, and enabling through the day connections between Lincoln and Omaha using Intercity trains, should capture an additonal 220,000 passenger boardings (110,000 round trips) for a distance of 60 miles (should be less but am using current BNSF alignment mileage) or an additional 6.6 million passenger miles annually.

(e) In 1998, TEMS prepared an Iowa Rail Route Alternatives Analysis for the Iowa Department of Transportation. (Because this study has not been available online for some time and is not cited in the 2012 Draft Alternatives Analysis, I am appending a copy.) Hardly surprisingly, TEMS arrived at the 2012 Draft Alternatives Analysis route 4A, and had passenger load estimates 10 -20% higher than those of the 2012 Draft Alternatives Analysis. (TEMS p. 94 , use the 2010 estimates; Draft Alternatives Analysis use the 110mph estimates. The TEMS study was notable for the care with which it dealt with segmental loading and the overall contribution to passenger miles and revenues of different segments of the route. Using the 2010 numbers on pages 92-94, one can calculate the contributions to overall passengers and passenger miles of three segments. Then one can show the effect of changes a through c above.

Route Segment	Passengers original	Passenger Miles original	Passengers w/ a, b, and c	Passenger Miles w/ a, b, and c	Passengers w/ commuters	Passenger Miles w/commuters
Quad Cities East	599,000	79.7million	599,000	79.7million	599,000	79.7million
Iowa City - Des Moines	284,000	79.9million	284,000	79.9million	284,000	79.9million
Greater Omaha	108,000	48.0million	180,000	80.0million	400,000	86.6million
TOTAL	991,000	207.6million	1,063,000	239.6million	1,283,000	246.2million

The effect of properly serving the greater Omaha area, is to increase overall revenue by 16-19 per cent, at an increased capital cost of less than 12 percent.

6. **History** - In the once upon a time when railroads actually expected to make a profit from passenger service, the CB&Q did continue its Chicago to Omaha services through downtown Omaha and terminated them in Lincoln. Doing so might make financial sense again.

7. **Editorial** - While not doing an environmental analysis, one should generate an appendix to the next report comparing the ridership by segment from Lincoln to Omaha for this proposed station structure to simple termination at a single station in downtown Omaha, and doing no other analysis west of the Missouri River. HNTB did something very similar in Appendix A11 to the July 2007 Ohio Hub Full Report. Because this report is difficult to locate online, a copy of the report and appendices is forwarded as Attachment 1 to these comments under separate cover.

2. **The EASTERN TERMINUS -**

The alignment should continue through Chicago Union Station to a station under O'Hare International Airport and perhaps one beyond O'Hare. In addition, there should be a connecting service between either Chicago Union Station or a suburban Chicago station and Midway Airport. The O'Hare,Chicago North Suburban station is likely to add another 10% to overall passenger count on the route.

The SNCF argues for these connections eloquently in its Midwest HSR220 (Actually HSR200 through self-imposed limitation) Proposal of 14 SEP 2009, MWRRA in its planning also at least pays lip service to these inter-modal connections. The FRA encourages such intermodal connections by treating them as benefits in considering construction subsidies. Aside from its intermodal role, the O'Hare connection also enables the many travelers in Chicago's northwest suburbs to get to the train without having to go downtown. One would expect the O'Hare (or beyond) eastern terminus to add another 15 per cent to ridership initially and as much as 25 percent if HSR220 or better service is run over the Chicago to Omaha route.

(While not directly germane to the location of the eastern terminus, it is important that the SNCF proposal not only shows that one can have a positive cash flow while covering all operating expenses and depreciation; if one redoes the arithmetic so as not to gild the French lily, the report also shows that revenues are sufficient to pay off the capital costs in 40 years assuming historic inflation. Because the SNCF proposal for the midwest is sometimes difficult to locate online, a copy is forwarded under separate cover as Attachment to these comments.)

4. **Using ABANDONED RIGHT-OF-WAY and GREENFIELD Construction** need to be included in the terms of reference.

a. **Revitalizing abandoned right of way** provides opportunities to get through otherwise impassable urban areas. It provides connections where current operating lines are either absent or indirect. Also, construction on abandoned right of way avoids property acquisition delay while permitting construction to full operating standards without having to work around ongoing operations. Not having to work around ongoing operations can make re-activation of abandoned right-of-way less expensive than upgrading tracks currently in operation. - Because of Iowa's history of railroad overbuilding in the late 19th Century, there are unusually large amounts of abandoned right-of-way for possible use.

b. One often needs **greenfield construction** to connect one alignment to another, even where alignments intersect, as the state of Illinois is now doing at Wyanet. One also needs greenfield construction to connect new points to the alignment.

c. The relative time consumed by the passenger end-to-end, not just on the railroad, directly impacts the passenger's perception of the convenience and therefore the desirability of traveling by train. Frequency of service, station location and convenience, and actual train speed are key determiners of end-to end time. How fast a train goes is limited by the alignment of the track over which it's operating. So, straight and non-conflicted alignments are critical. Often one can dramatically increase the speed of trains between two points with (sometimes modest) greenfield construction to shorten, straighten and grade separate.

Two examples of shortening the right of way follow. (All distances calculated using the North American Railroad Map, and adding the segment lengths)

.1. The IAIS (formerly Rock Island) alignment from Des Moines to Iowa City is 119.9 miles long. A high speed, nonstop service should follow a greenfield direct alignment approximately 108.8 miles long from Des Moines to Iowa City shown as alignment 4e on Exhibit 1 attached. This greenfield direct alignment would shorten the route by 11 miles.

.2. The IAIS (formerly Rock Island) alignment from Moline to Wyanet is 49.7 miles long. The BNSF (formerly CB&Q) alignment from Wyanet to Mendota is 29.7miles long. Used end-to-end, this alignment from Moline to Mendota is 79.4 miles long. A high-speed, nonstop service should follow a tangent greenfield alignment 66.4 miles long. Thus, a greenfield direct alignment would shorten the route by 13 miles.

(It should be noted that the alignment from Chicago to Wyanet is also used by the service from Chicago to Galesburg and thence to Quincy and would be used by high speed service from Chicago to Kansas City. Thus running the longer route to Wyanet might make HSR240 more affordable on all three routes.)

Taking these two examples together along with the direct Eppley to IAIS route, straightening between Atlantic and Des Moines, and straightening between Iowa City and Davenport can reduce the overall length of the express rail trip from Chicago to Omaha to near 430 miles, making 2 hour 15 minute journeys possible with HSR240 rolling stock.

d. The principal rationale for not revitalizing abandoned right of way centers on the process delays due to needing approval of environmental impacts and avoidance of property taking. Simplification of this process appears to be an issue on the table as a possibility for the transportation bill now in Conference. Even should it fail, both parties are friendly to it, and it is likely to be approved within a matter of years. Further, the highway builders do not seem to have nearly the difficulty with environmental impediments that railway construction has. Adjustments in process to more closely match FRA practice to FHWA practice are not impossible, and should be sought.

5. **PARALLEL RIGHTS OF WAY** need to be included in the terms of reference.

a. **Complementary alignments -** When alignments are separated by a sufficient time and distance, i.e., more than 25 miles in Iowa, they may be largely independent so that operation of both may provide significant benefits in public service. Should an Omaha to Chicago passenger service go across Iowa north of the former Burlington Route, it may be that continued, and perhaps increased, service on the Burlington Route would be complementary, because it serves places not served by the alternate route.

b. Sometimesnonstop service should take a shorter path than a "less express" service that stops at stations not necessarily on or near to the express line. Between Detroit and Chicago, for example, one stopping alignment through South Bend, Fort Wayne, and Toledo is significantly longer than the non-stop alignment; it adds nearly an hour to the trip, but provides service to nearly 2 million otherwise unserved people. Using different express and stopping routes is particularly important because the speed of non-stop service has a halo effect on perception of stopping service and resultant passenger use. -

.1. **Lengthening the stopping route -** Two examples

.a. By adding 40 miles to Alignments 4 and 4a, the existing IAIS alignment from Des Moines to Iowa City, one can create new alignment 4b which is125.9 miles long, adds three intermediate stops - Ames, Marshalltown, and Cedar Rapids airport, and serves 473,170 more people (Ames 148,458; Marshalltown 39,555; Cedar Rapids 285,157) than alternative 4a for a total of 1,507,292. This alignment is shown in red on Exhibit 1 attached. To put alignment 4b together one does the following

(1). From Des Moines to Ankeny, revitalize abandoned Fort Dodge, Des Moines and Southern right of way. (Consider a possible suburban station stop in Ankeny.)

(2). From Ankeny to Ames, revitalize abandoned Chicago and North Western right of way.

(3). From Ames to Cedar Rapids, either

(a). Follow the present Union Pacific (formerly Chicago and North Western) mainline. or if, as is often the case, UP would rather not be bothered by passenger traffic, then

(b). Divert from the abandoned Chicago and Northwestern algnment at Slater and build a greenfield alignment due north into a 6 mile radius turn eastward onto parallel Lincoln way alignment. Follow the Lincoln Way alignment without any turning to a new Ames Station east of the intersection of Lincoln way with University Boulevard. (It may be necessary to trench/tunnel this alignment through Iowa State University and to elevate it through the rest of Ames.) Continue along this perfectly tangent alignment with no turning whatsoever to a new Marshalltown Station on "Business 30". (It may be necessary to elevate the tracks for several miles along "Business 30".) Continue with no turning on this perfectly tangent alignment until it makes a 6 mile radius turn onto state highway 94 which it follows slightly straightened to a new downtown Cedar Rapids Station. - This straightened alignment saves approximately 7.8 miles over the UP route to downtown Cedar Rapids.

(4). From Cedar Rapids Station proceed south on the partially abandoned former Rock Island alignment.

(5). Make as large a radius a turn as possible onto a greenfield alignment proceeding due south along C street. After crossing Pheasant Run Road, make a curve of the greenfield alignment over to run southward straightened-parallel to I380.

(6). Where I380 intersects the IAIS, make as large diameter a turn as possible onto the IAIS and follow that through a possible new station between Melrose and Finkbane in Ames to the existing station at Wright Street, Ames.

b. By adding 66 miles to alignments 4 and 4a, one can create a new alignment 4c that goes through Ames,takes a greenfield alignment to Cedar Falls where it stops at the new station on University Avenue at Iowa Northern, then follows straightened existing routes to Waterloo, then Cedar Rapids, and Iowa City. This alignment adds Cedar Falls/Waterloo and subtracts Marshalltown from the population served, 598,971 more people than alternative 4a for a total of 1,633,093. It is shown in purple on Exhibit A attached.

c. One would also suggest

c. Quantifying the consequences,

Route Segment	Passengers original	Passenger Miles original	Passengers w/ Cedar Rapids, Waterloo and Ames	Passenger Miles	Passengers w/ Omaha and Omaha Commuters	Passenger Miles
Quad Cities and East	599,000	79.7million	599,000	79.7million	599,000	79.7million
Iowa City through West Des Moines	284,000	79.9million	635,000	179.7million	635,000	179.7million
Greater Omaha	108,000	48.0million	108,000	48.0million	400,000	86.6million
Total	991,000	207.6million	1,342,000	307.4million	1,634,000	346.0million

.2. Were true high speed service to be implemented from Omaha to Chicago, one would expect super-expresses competing with air service from Omaha and Des Moines to Chicago to take the 108.8 mile straight alignment between Des Moines and Iowa City and stopping trains to take the 77mile longer alignment (36minutes longer including stops and margin at HS240, 52minutes at HS110) through Ames, Cedar Falls, Waterloo, and Cedar Rapids. An alternative approach would be to have synchronized cross platform transfers at Des Moines and Iowa City to and from locals following the stopping route.

.3. I am embarrassed that I made a significant error in recording the route length data before coming to the open house in Council Bluffs. I apologize to any whom I presented the fallacious result, and thank them for their courtesy and patience.

If these comments need clarification or I can be of further help, please feel free to contact me by phone or email. Thank you for your consideration.

Sincerely,
Charles Smith

POBox25, Villisca, IA 50864
712-826-3848
altos@netins.net

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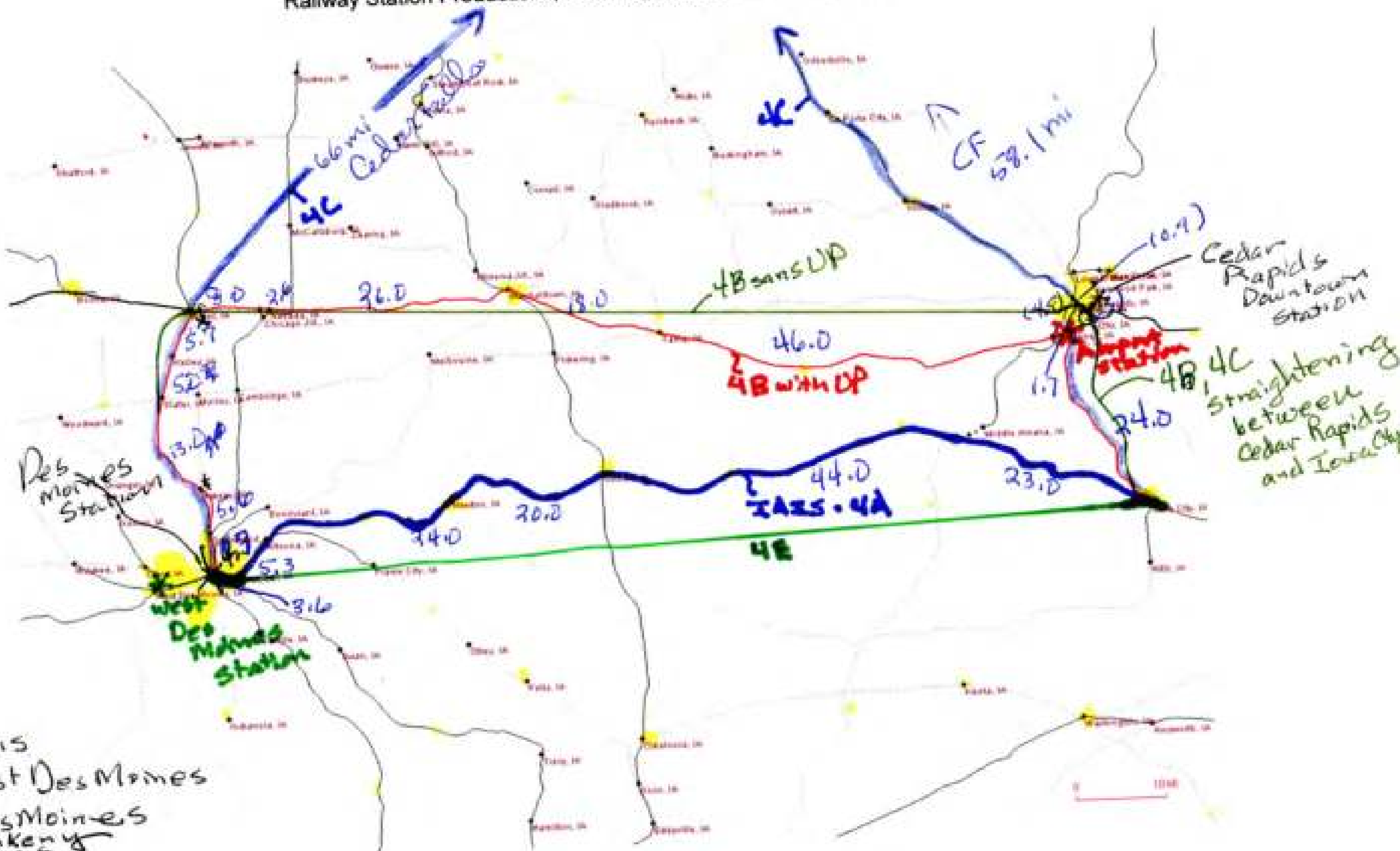
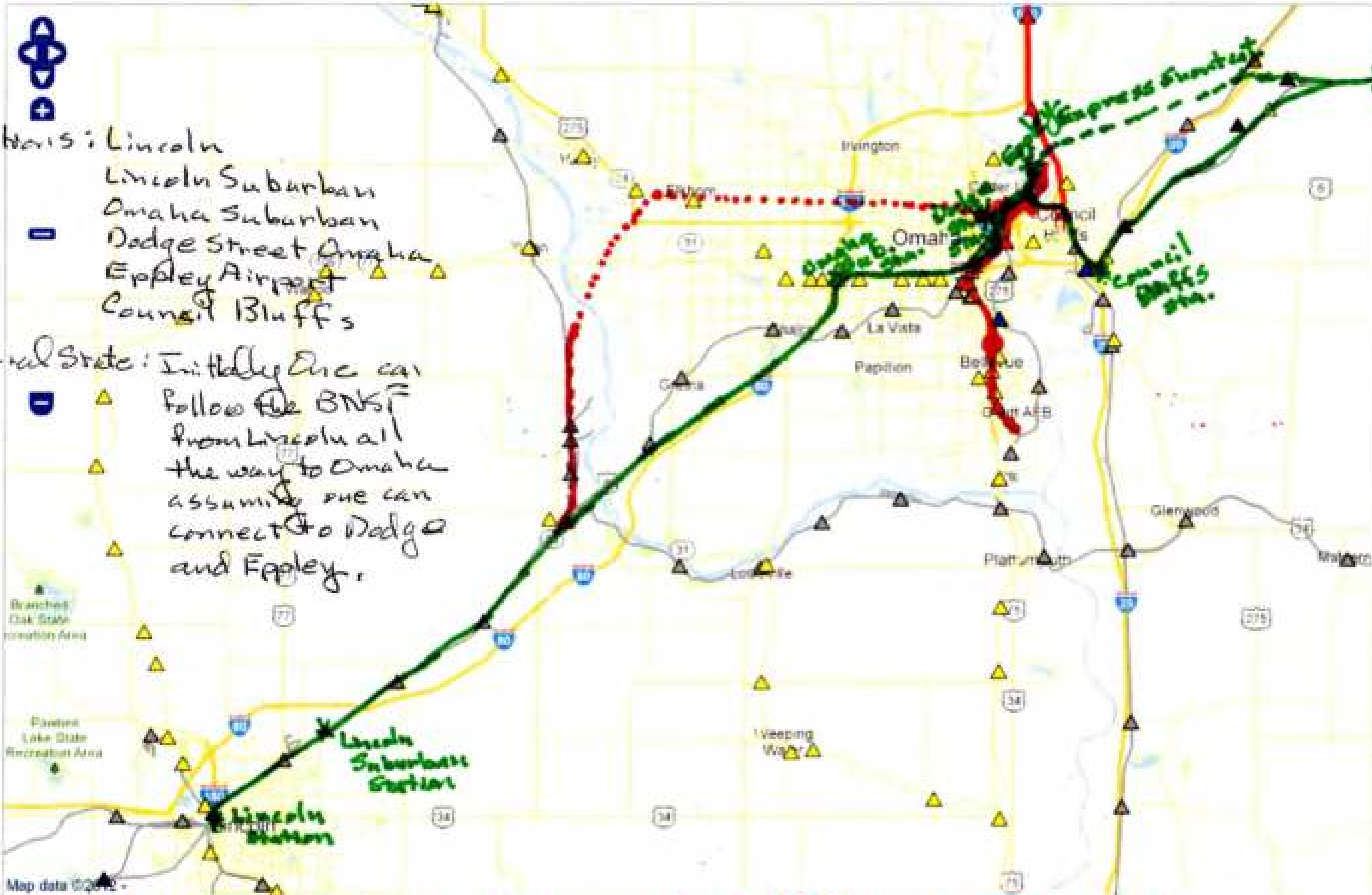
Exhibit 1

North American Railroad Map
Railway Station Productions, LLC http://www.Railroadmap.com



Stations
West Des Moines
Des Moines
Ankeny
Ames
Cedar Falls
Waterloo
Cedar Rapids
Iowa City
Local: Amana
Grinnell
Newton

Exhibit 2



HSRail —— Late phase HSRail ---- Regional Rail ..... new or —— existing track

Nota bene, Regional Rail not part of Omaha-Chicago

RESPONSE:

Thank you for taking the time to provide us with comments as part of our Alternative Route Analysis effort for the Chicago to Omaha Regional Passenger Rail System Planning Study.

With the inception of high-speed intercity passenger rail funding in 2009 and additional funds being authorized in 2010, the Federal Railroad Administration (FRA) has developed the guidelines for the grant applications and passenger rail corridor planning studies, individual projects, and service development programs. Any study undertaken must be prepared in accordance with the Federal guidelines in order to be eligible for future federal funding when available.

Based on an application submitted by Iowa DOT in 2010 for high-speed intercity passenger rail funds, the FRA has authorized $1 million, with a state match of $1 million, for a total of $2 million to produce a Passenger Rail Corridor Investment Plan consisting of a Tier I Environmental Impact Statement for the Chicago to Omaha corridor in compliance with FRA's *Procedures for Considering Environmental Impacts* (64 *Federal Register* 289545, dated May 26, 1999) and the Council of Environmental Quality's (CEQ) NEPA implementing regulations (40 CFR §§ 1500-08) and a Service Development Plan (requirements listed in the Federal Register 2010 Notice of Funding Availability for High-Speed Intercity Passenger Rail Programs, Volume 75, No. 126, available at www.fra.dot.gov/downloads/PubAffairs/2010-15992.pdf - 84k - 2010-10-28).

The Chicago to Omaha corridor is a major component of the Midwest Regional Rail System (MWRRS) and is one of ten federally-designated high-speed rail corridors in the United States. The MWRRS is designed as an integrated system operating intercity passenger trains at speeds up to 110 mph. The MWRRS corridors interconnect in Chicago to enable passengers to begin their journey on one corridor and end on another. Individual corridors have intermodal connections at major stations to enable the passengers to connect between long-distance and short-distance transportation modes. The intent of MWRRS is to use common rail passenger equipment, marketing, ticket systems, and operations management to provide a seamless transportation system for the traveling public.

In 2010, the FRA authorized $230 million in high-speed rail corridor funding for the Chicago to Iowa City segment of the corridor. This service is currently under development for implementation in the first phase between Chicago and Quad Cities and is a component of one of the potential Chicago to Omaha alternatives. Capitalizing improvements made on federal- and state-funded rail programs will facilitate in expanding the passenger rail network throughout the United States.

While there is a universe of rail corridor possibilities that could be evaluated as alternatives, the alternatives that were evaluated were identified by the FRA and Iowa DOT as feasible based on the funding available for studying the Chicago to Omaha service:

1. Illinois Central: CN via Rockford, Illinois, and Dubuque, Waterloo and fort Dodge, Iowa
2. Chicago & Northwestern: Union Pacific via Clinton, Cedar Rapids, and Ames, Iowa
3. Milwaukee Road: CP from Chicago to Sabula, Iowa and BNSF from Bayard, Iowa, to Omaha, and abandoned except for several small stubs in between
4. Rock Island: CSX from Chicago to Utica, Illinois, and Iowa Interstate Railroad via Moline, Illinois, and Iowa City and Des Moines, Iowa
5. BNSF Railway: BNSF via Galesburg, Illinois, and Burlington and Ottumwa, Iowa

The No-build and Route 4-A alternatives are being carried forward in the Tier I Service Level EIS. The No-Build Alternative will be used as the basis for comparison. Route 4-A, a combination of Routes 4 and

5, is composed of Route 5 between Chicago and Wyanet, Illinois, and Route 4 between Wyanet and Council Bluffs. The Route 4-A will be carried forward because, compared to other route alternatives, it:

- Meets project purpose and need.
- Has low construction complexity and low construction costs.
- Has modest grade crossing complexity.
- Does not require a new bridge over the Mississippi River.
- Is the shortest route alternative.
- Has close to the shortest travel time.
- Serves a large population.
- Has a direct connection to Union Station in downtown Chicago.
- Has no unreasonable environmental resource issues.

The Tier I EIS for the Chicago to Omaha corridor is being prepared to make high-level decision for the program evaluating routing and service alternatives and program phasing. This document will incorporate the purpose and need for the program; alternatives analyzed including selection of the preferred alternative; affected environment and consequences; comments and coordination; next steps; list of preparers and references.

The next phase of the program (not funded) will include preliminary engineering and Tier II environmental documents for specific infrastructure improvements on the corridor including stations and maintenance facility(ies). Tier II NEPA documents and preliminary engineering will be completed providing sufficient detail to support obligations for final design and construction for site specific improvements and implementation of service on the corridor.

The host railroad's design criteria will be used to meet FRA Class VI requirements for 110 mph operations on the Chicago to Omaha corridor. Amtrak design criteria (MW 1000) will supplement the host railroad's criteria if none is available for FRA Class VI track. Also, other railroad industry guidelines, such as AREMA and APTA, along federal, state and local codes will apply to the development of the design for the Chicago to Omaha passenger rail corridor infrastructure including highway/rail crossings, stations and maintenance facilities.

Buy American provisions have been established for the federally-funded high-speed intercity passenger rail programs under the Buy America provision at 49 U.S.C. § 24405(a) which applies to all PRIIA authorized spending, including all ARRA funds and FY 2010 DOT Appropriations Act funds. It is the intent of this program that high-speed and intercity passenger rail infrastructure components and passenger equipment can and should be manufactured in the United States. The FRA Buy American guidelines can be found on the FRA's website at http://www.fra.dot.gov/Pages/251.shtml.

We encourage you to continue to stay informed on the progress of the Chicago to Omaha Regional Passenger Rail System Planning Study through updates posted on the project website at www.chicagotoomaha.com. Future public meetings/hearings on the draft EIS for the Route 4-A Alternative are scheduled for early December 2012.

APPENDIX B

CHAPTER 3 FIGURES

PART 1 OF 3

CHICAGO, ILLINOIS TO ROCK ISLAND, ILLINOIS

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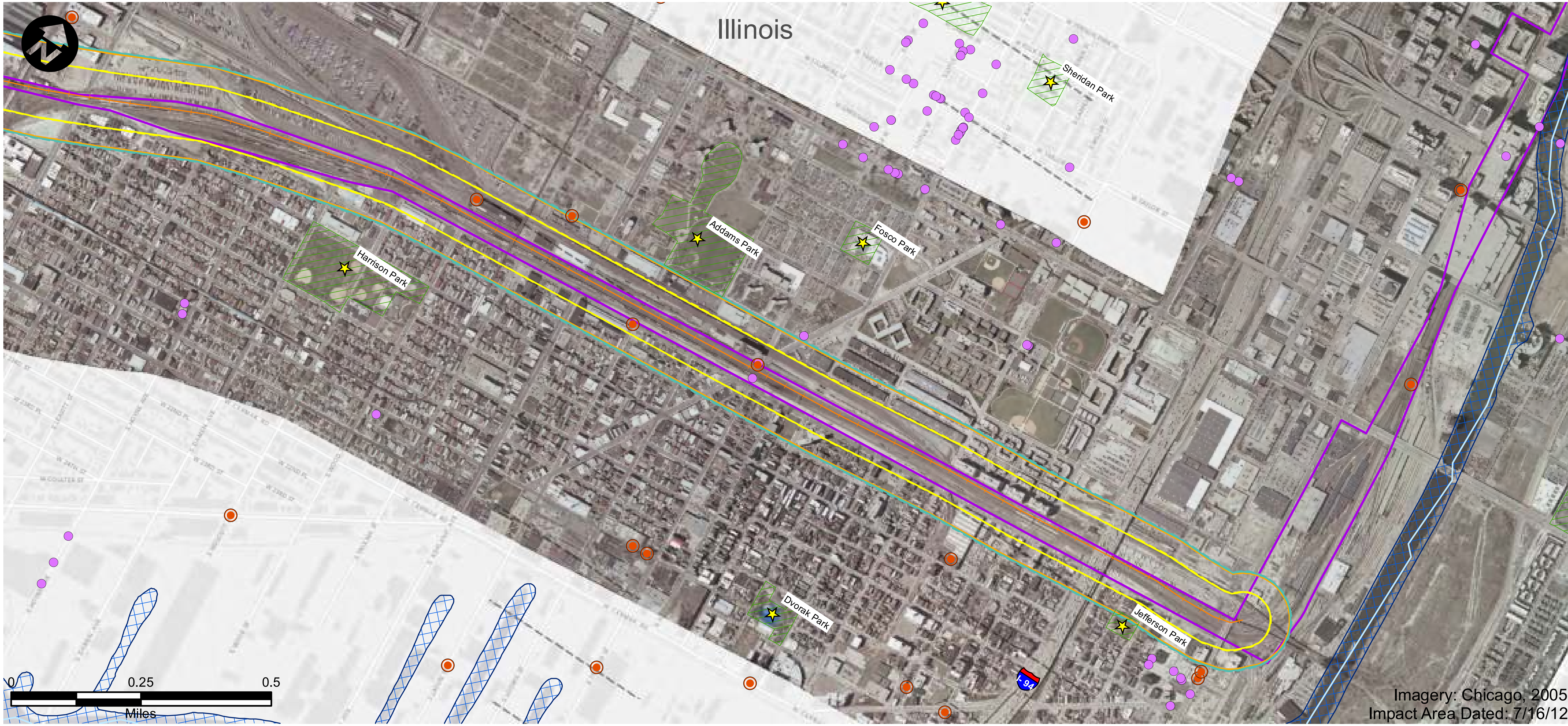

- Route Alternative
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- Streams
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- National Priority List Sites
- Hazardous Material Sites
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- Parks
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- Topeka Shiner Critical Habitat
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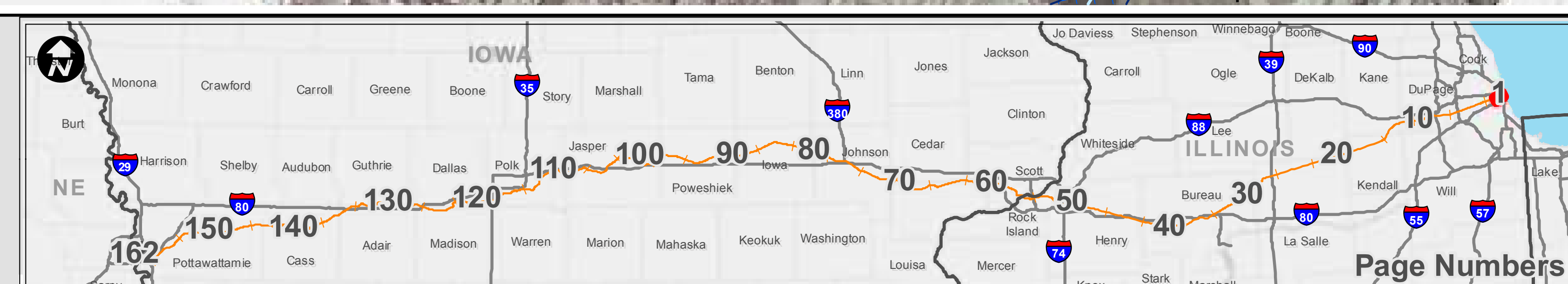

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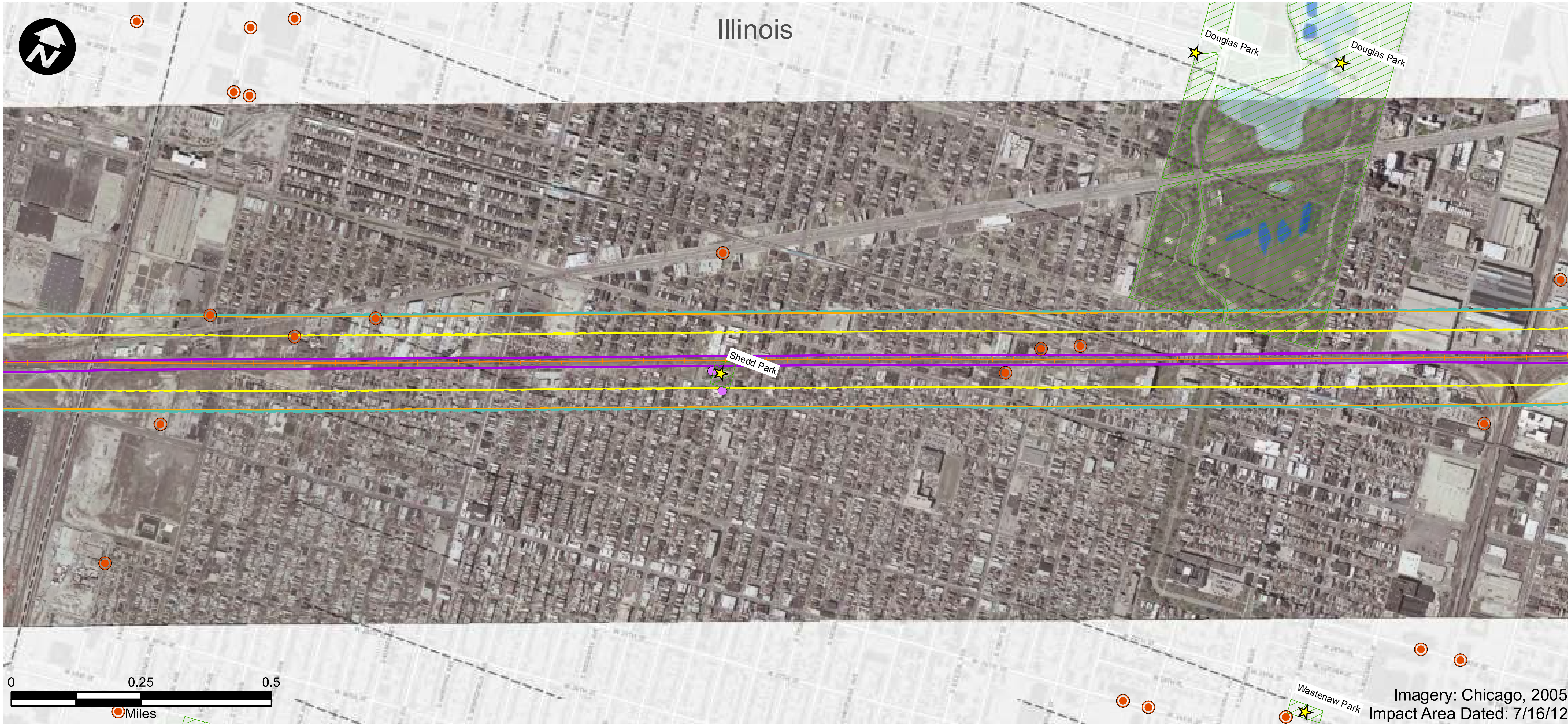

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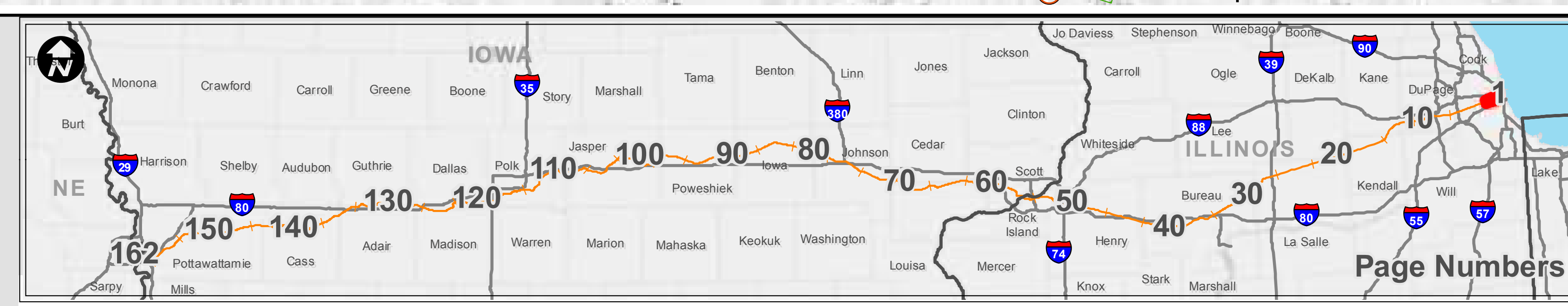

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FIGURE
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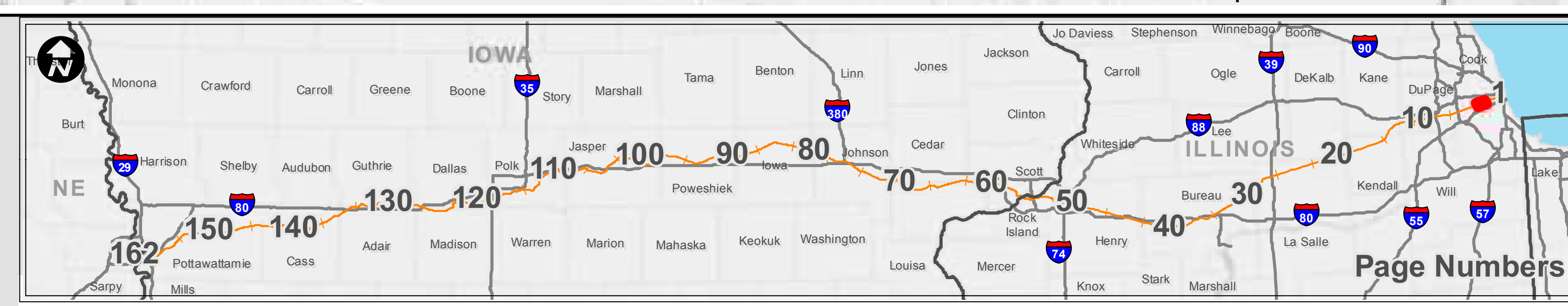

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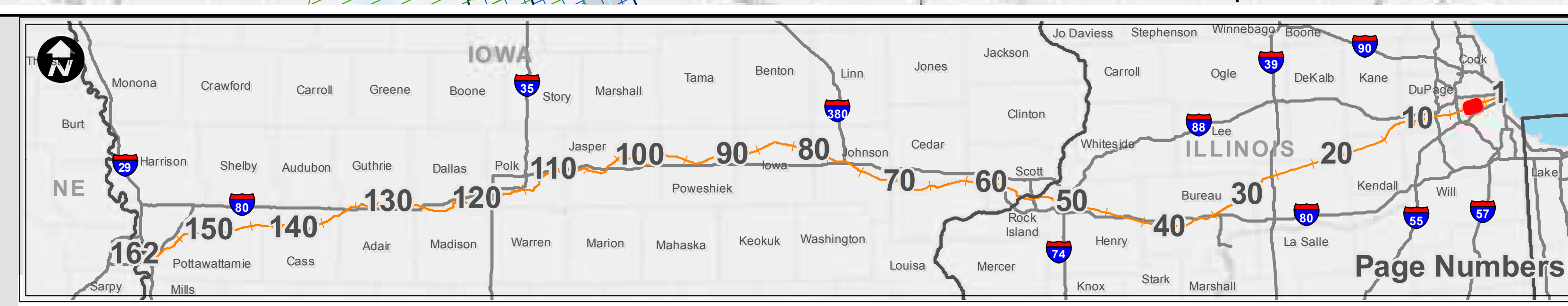

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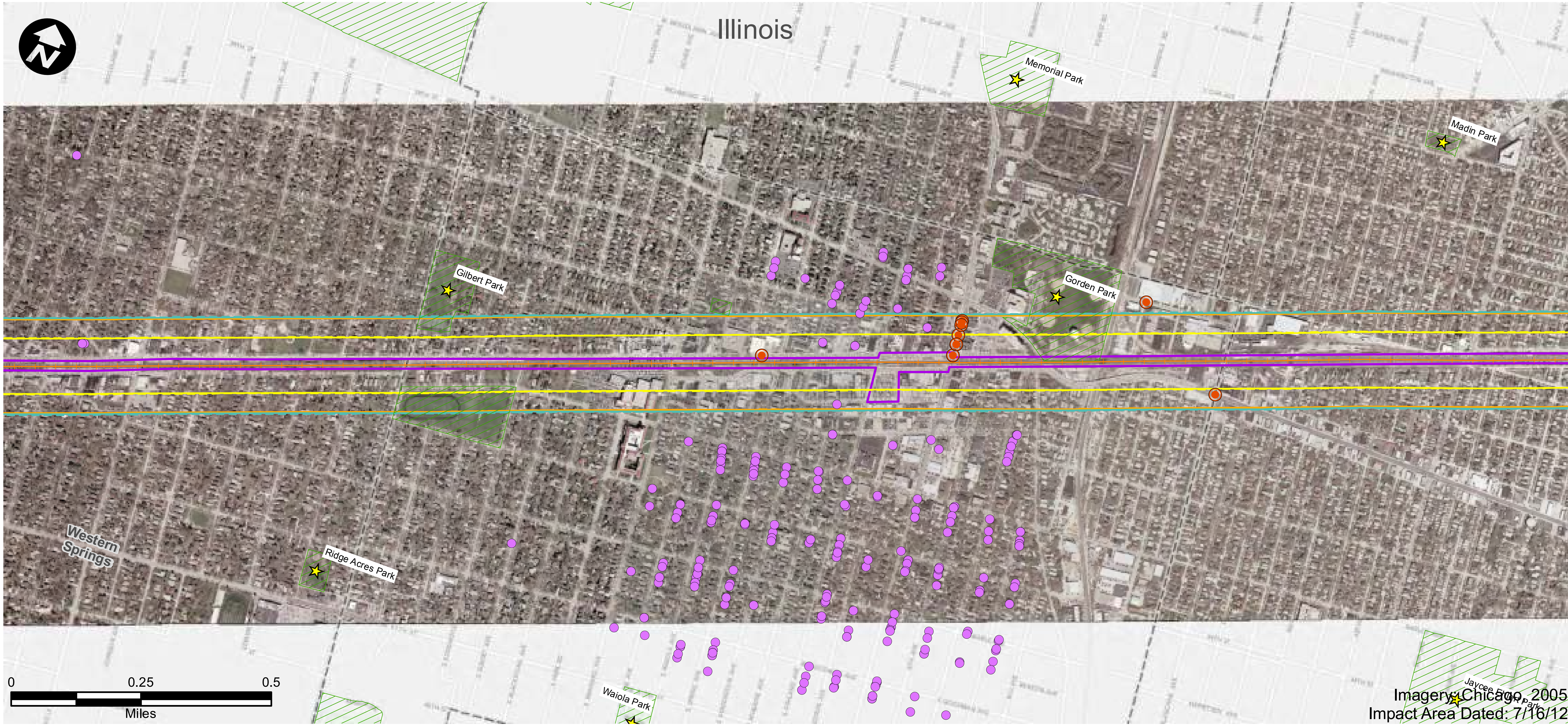

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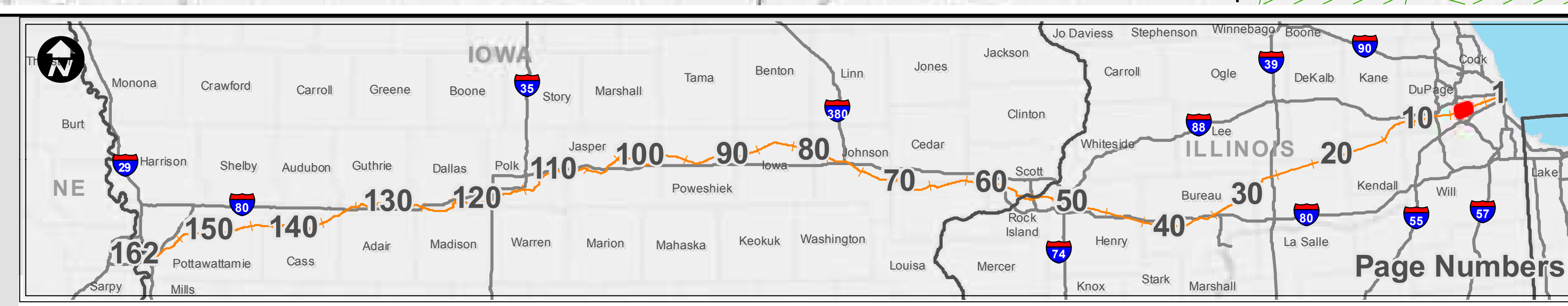

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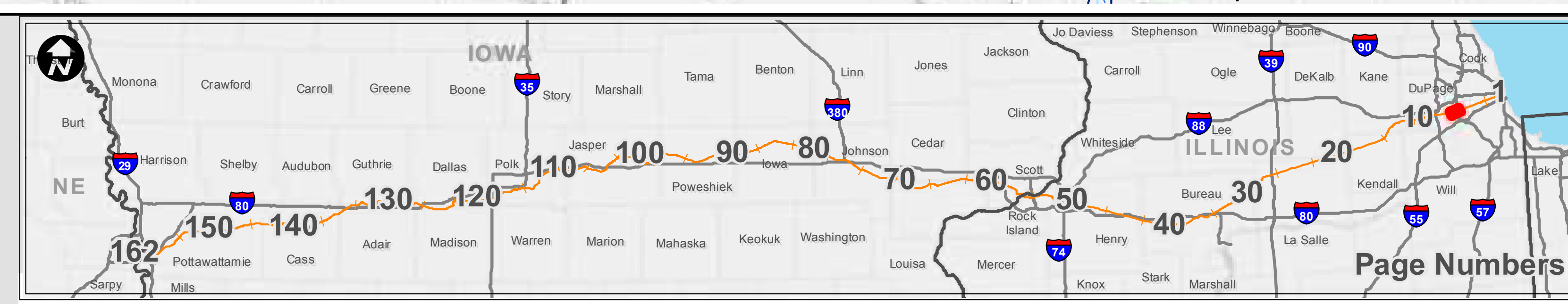

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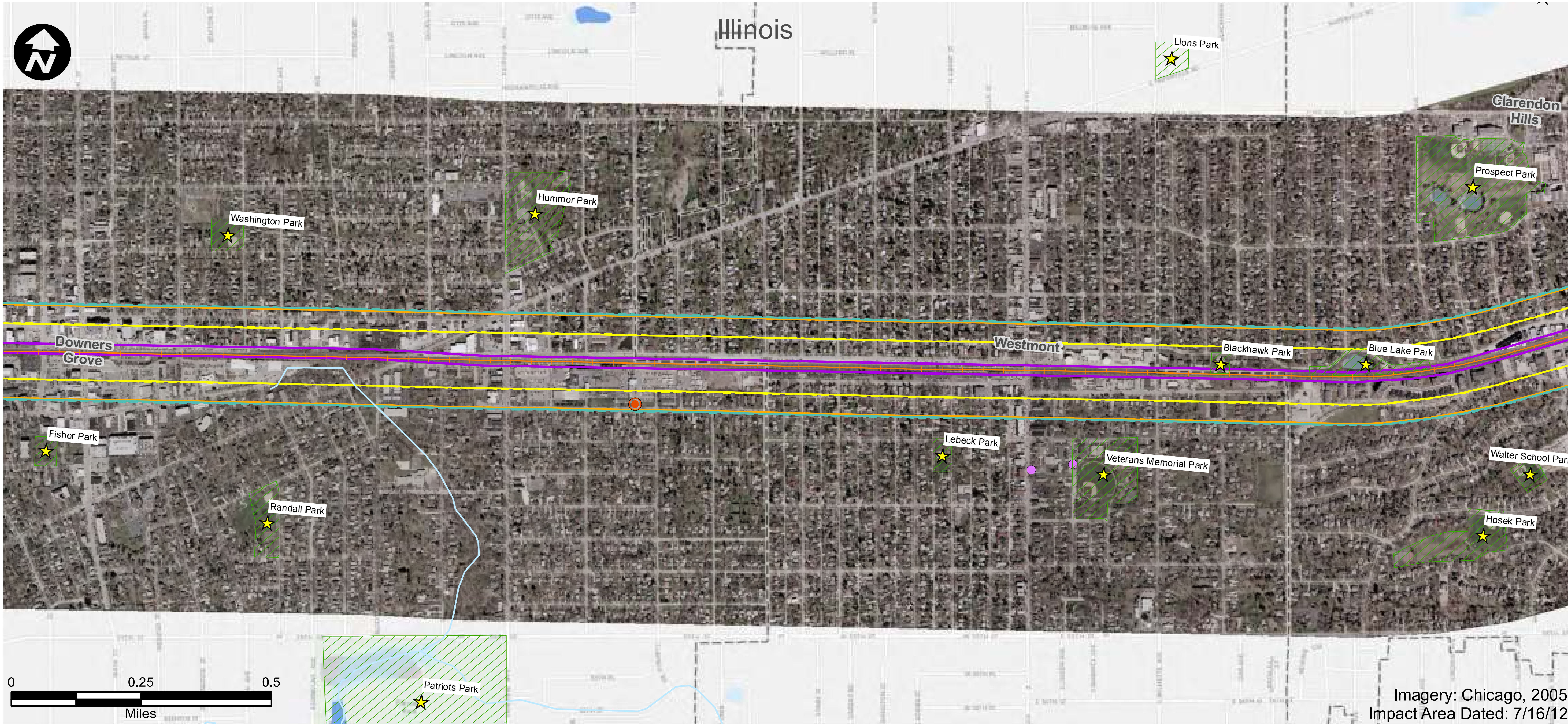

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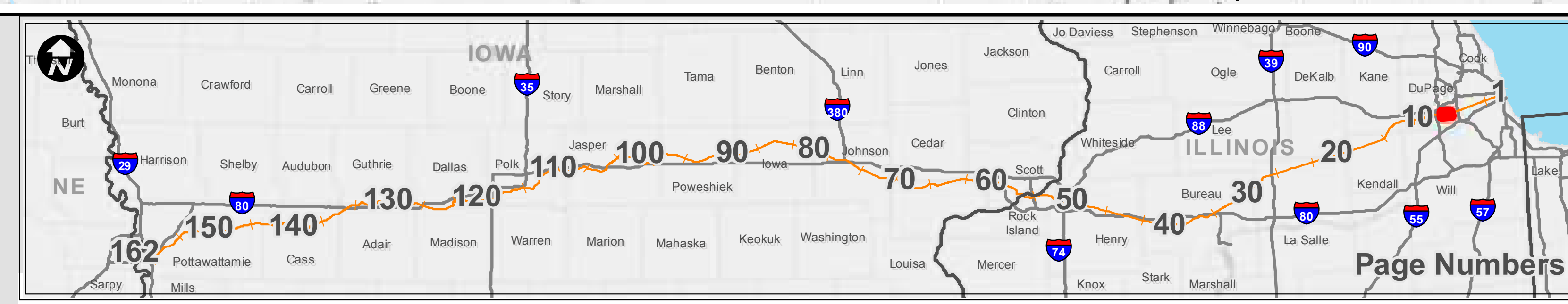

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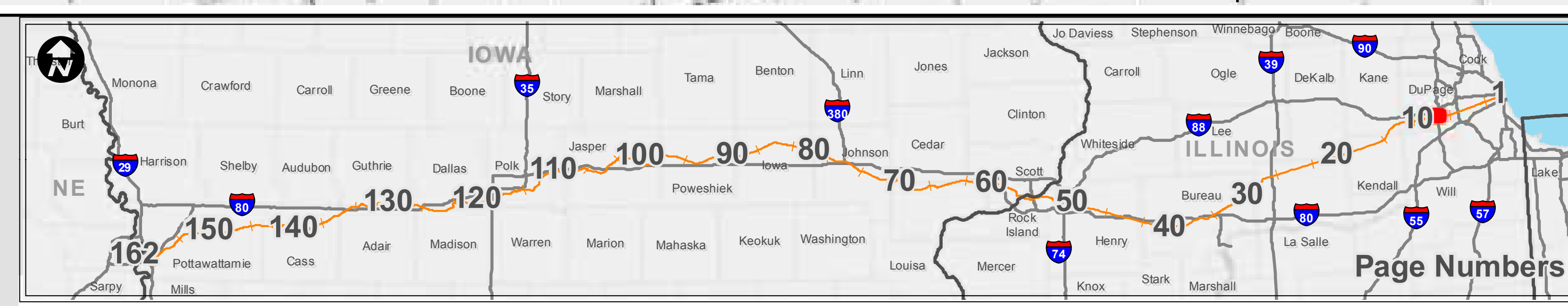

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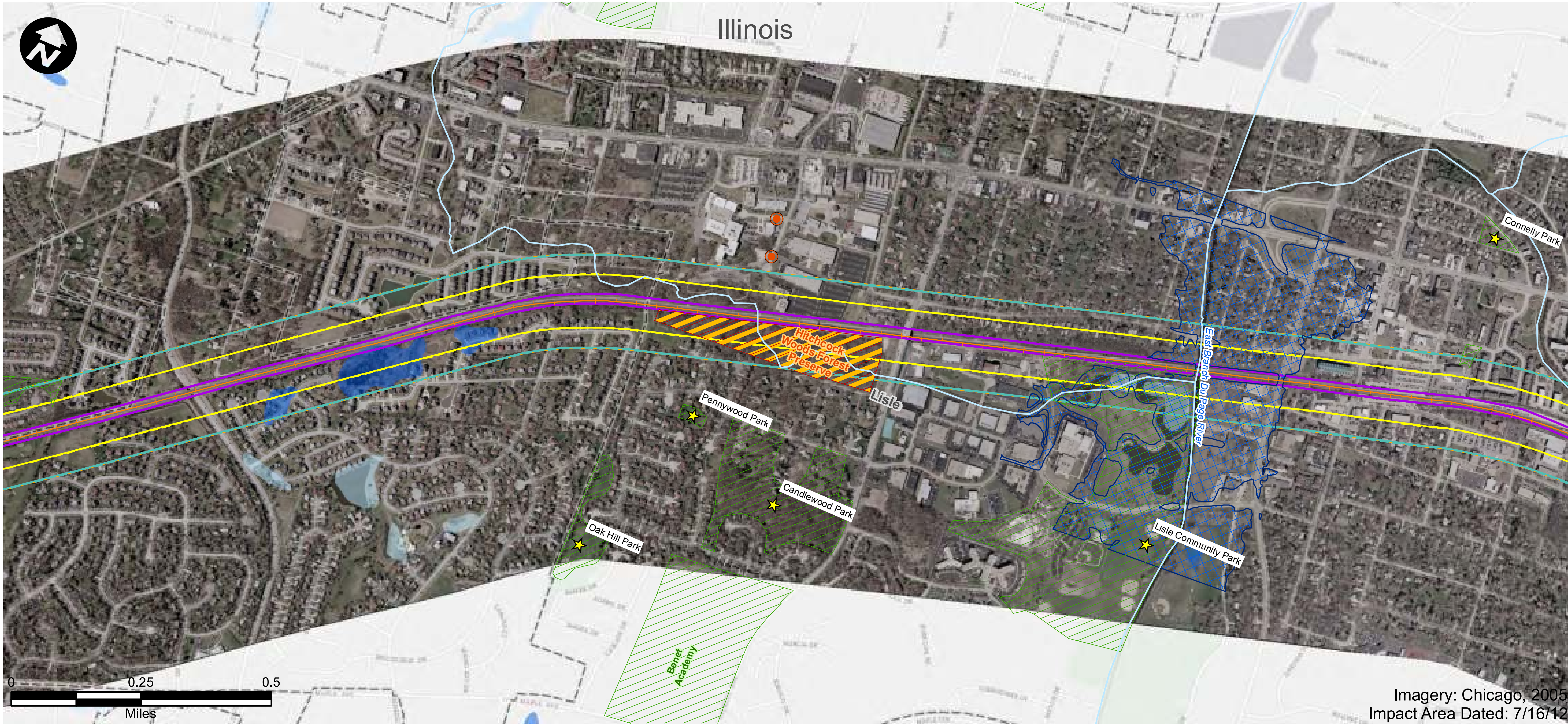

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- Recreation Area
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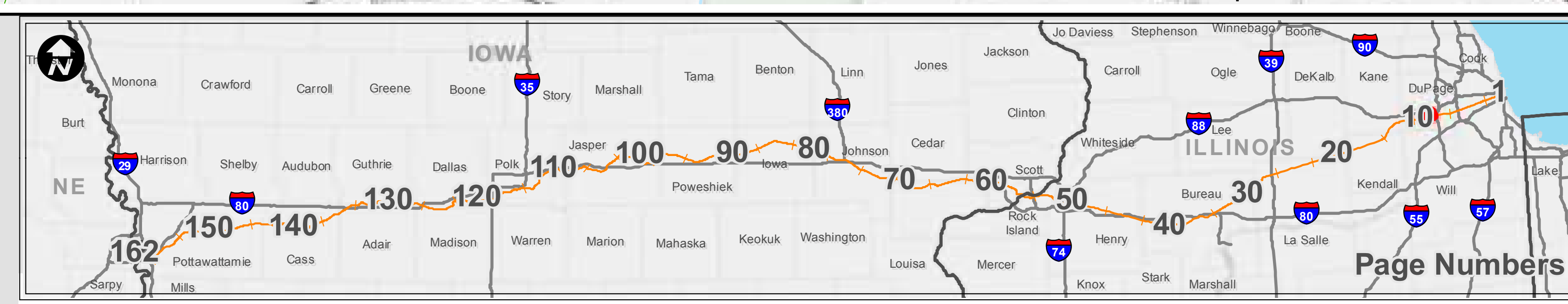

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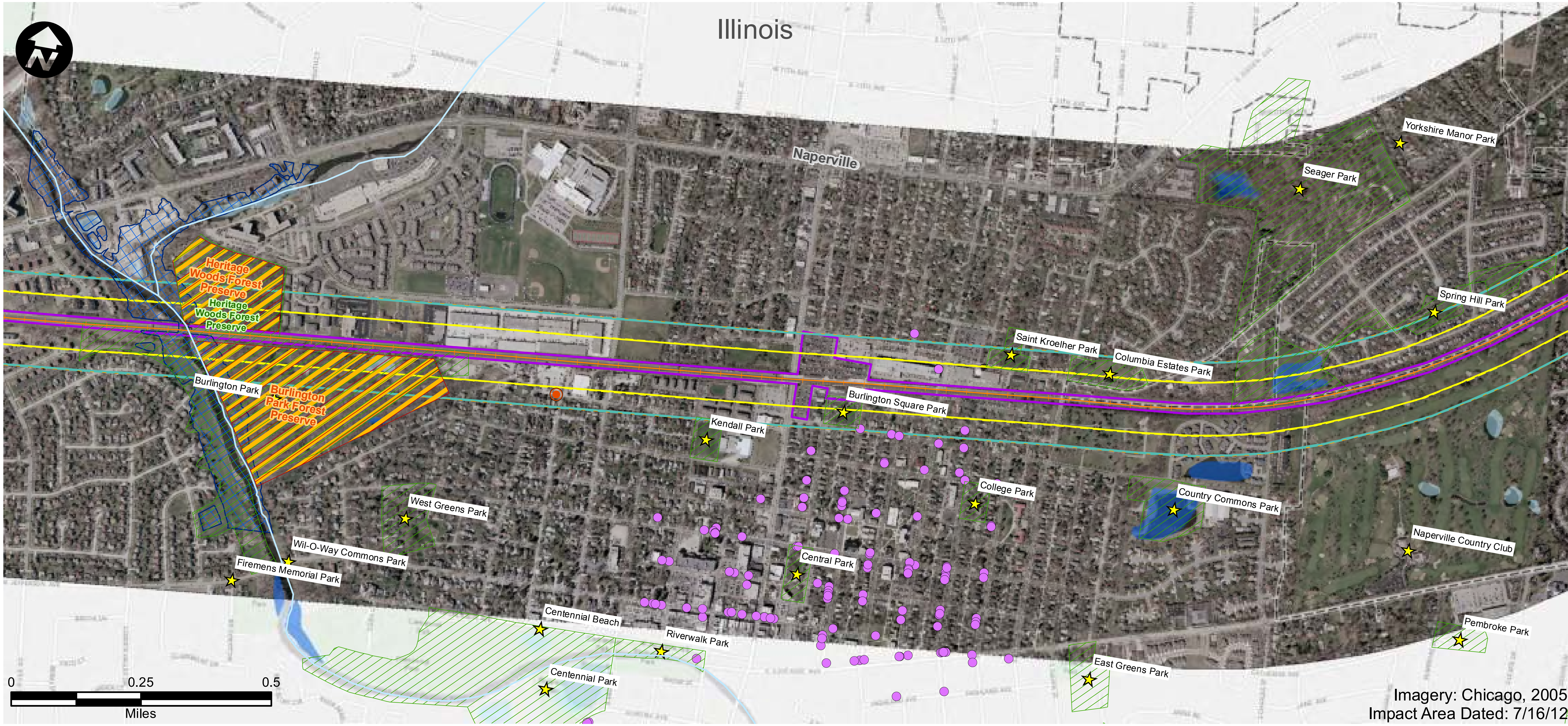

Route Alternative
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Historic Sites
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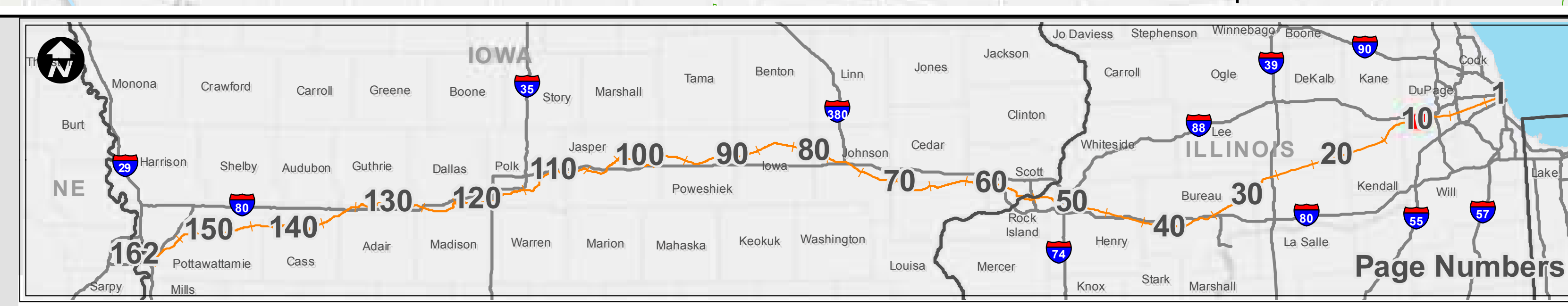

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- Route Alternative
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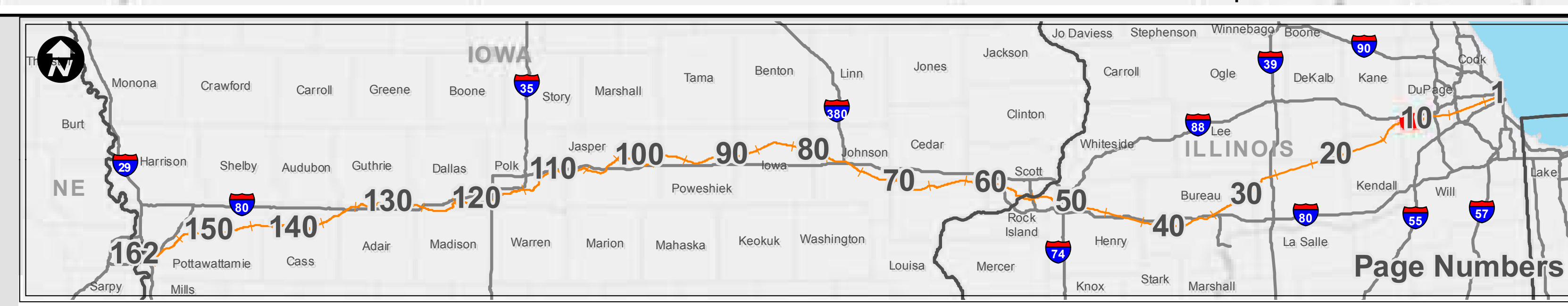

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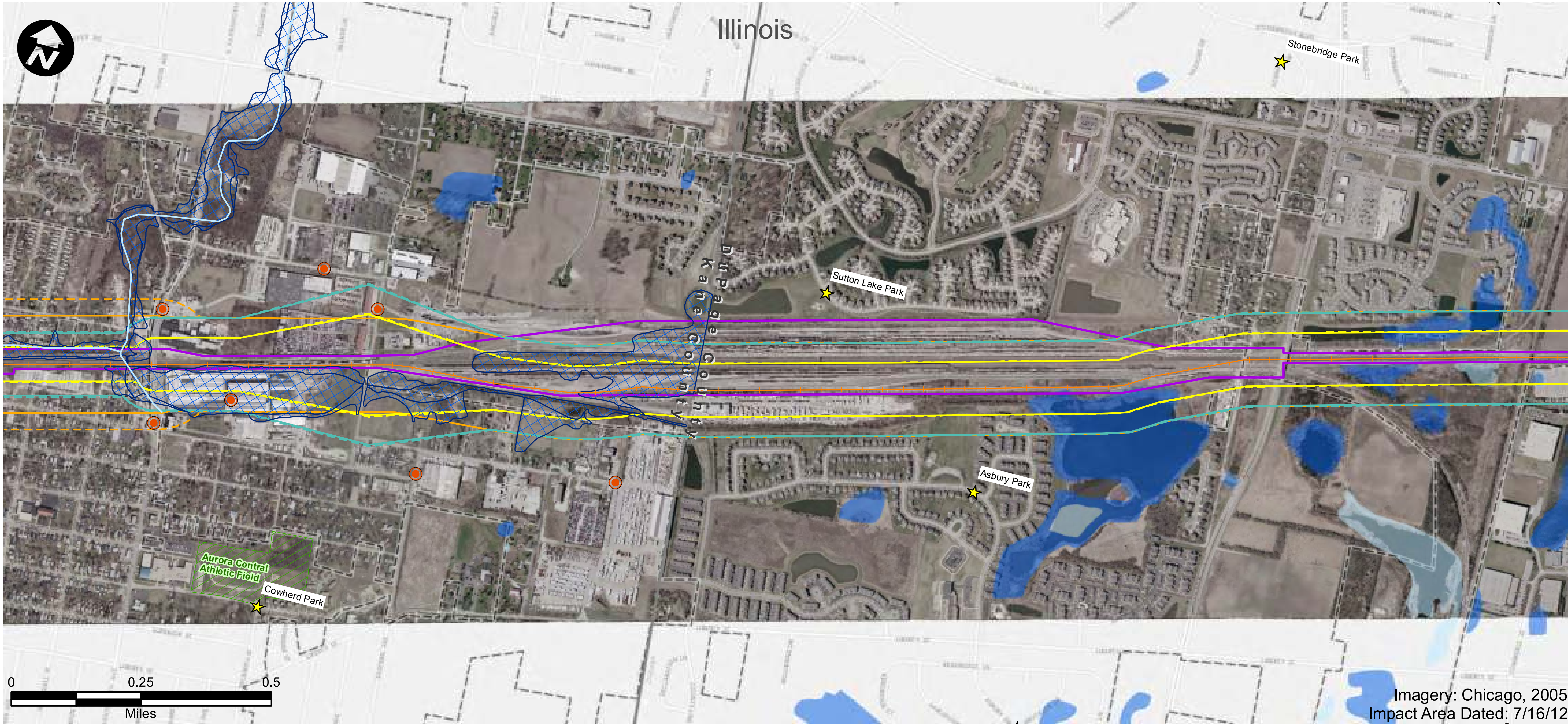

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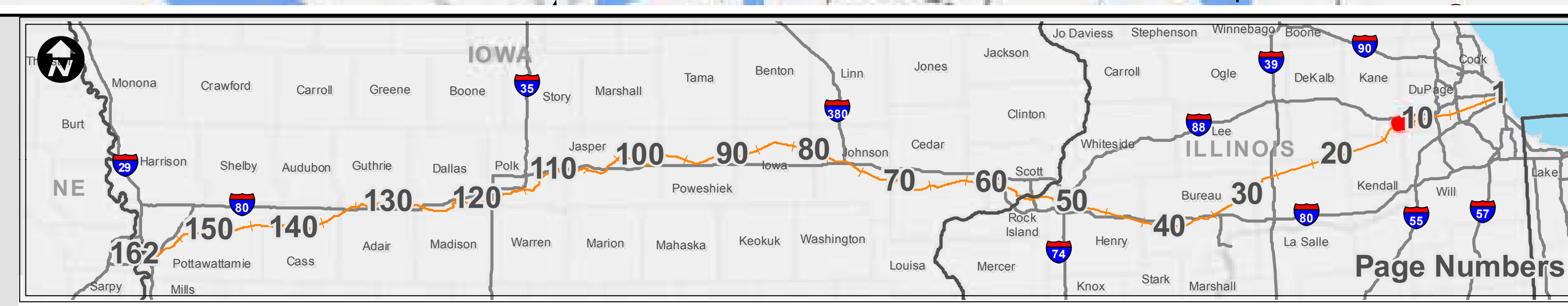

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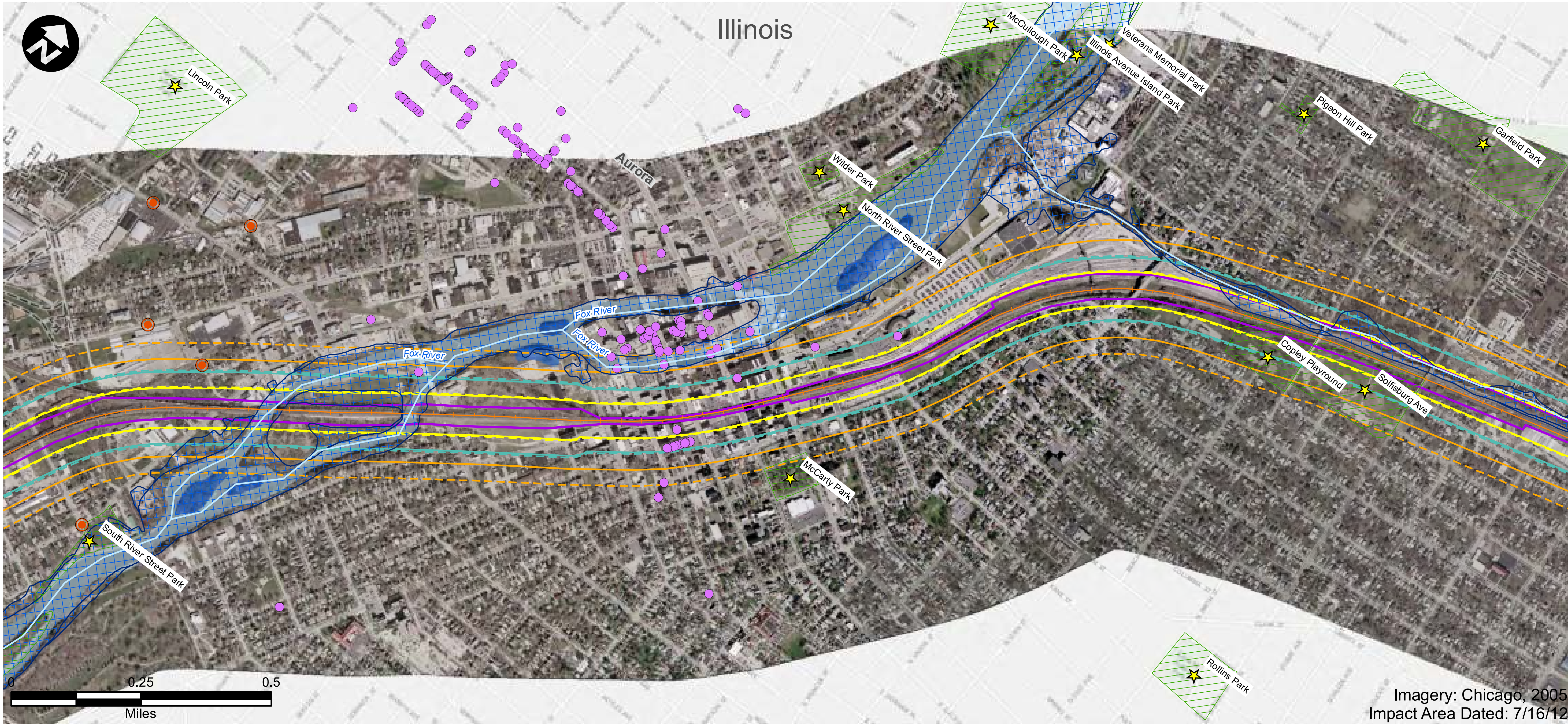

Route Alternative
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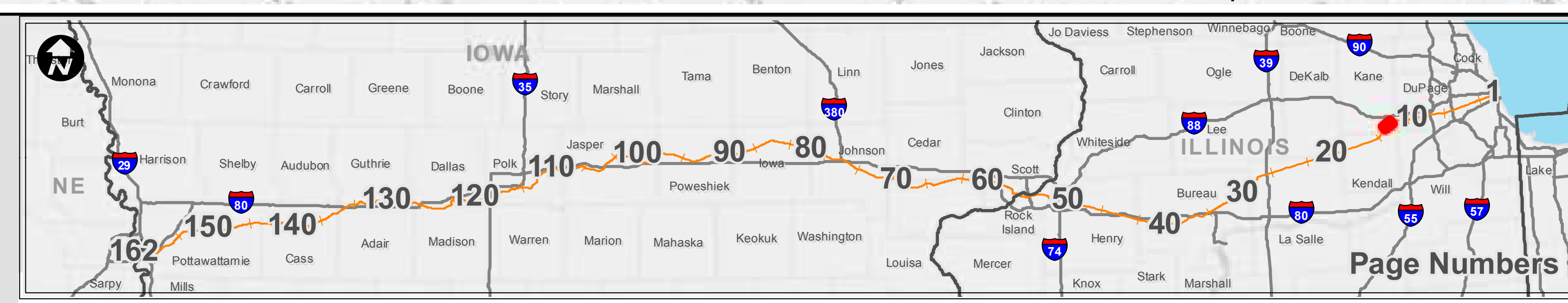

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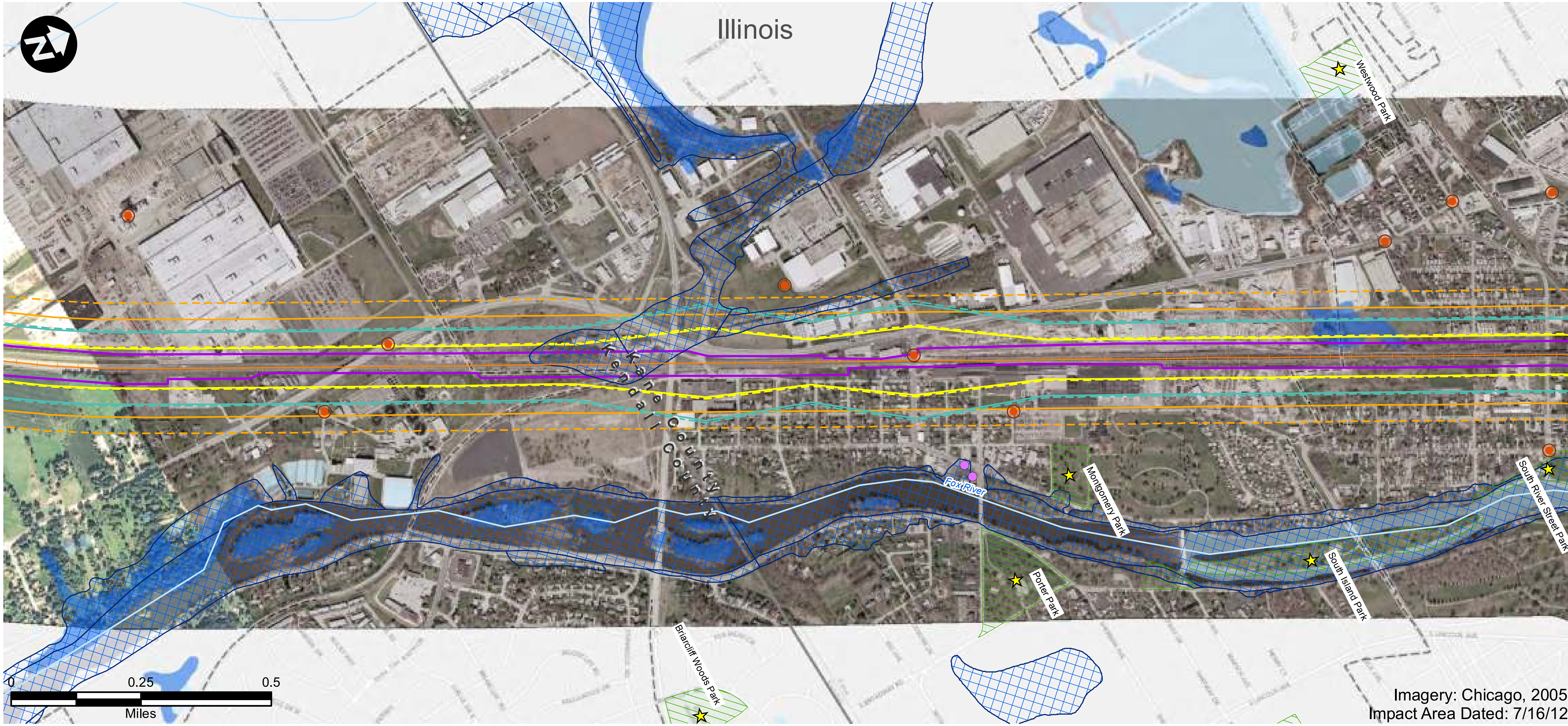

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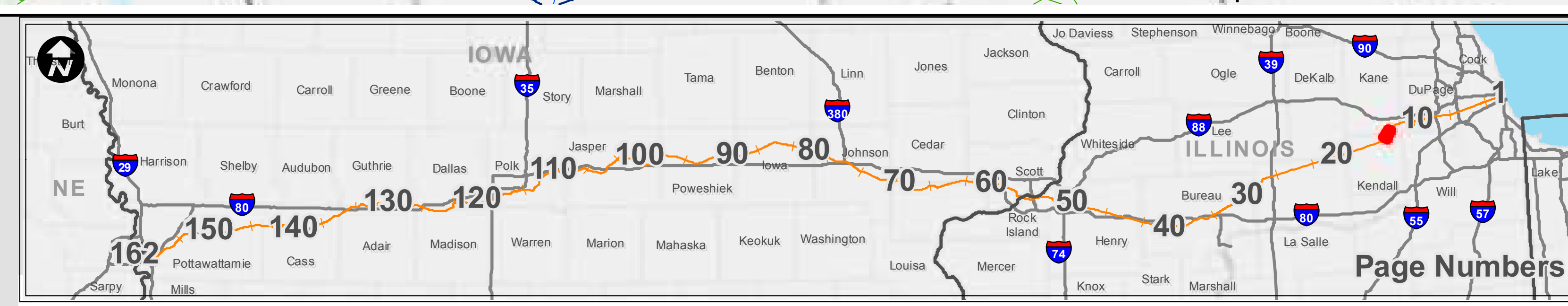

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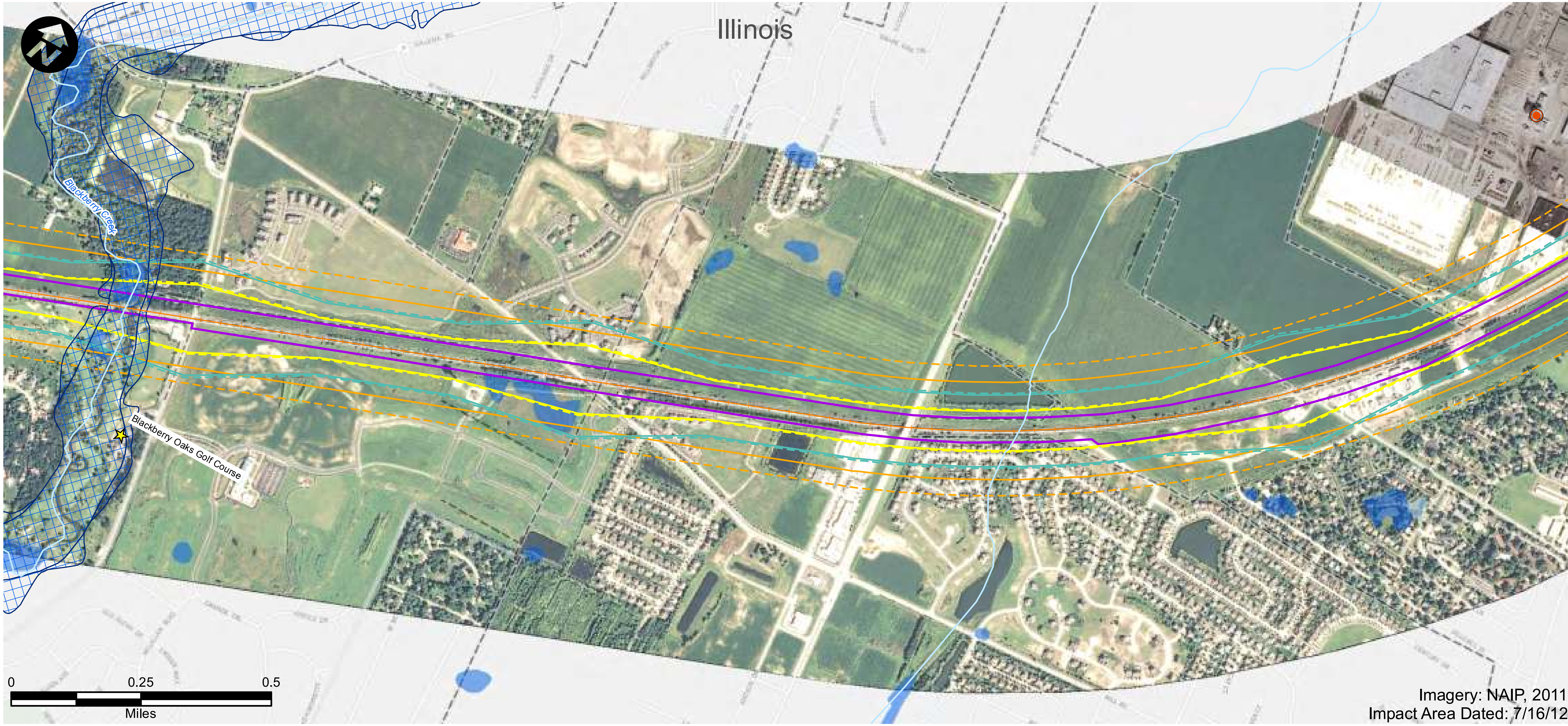

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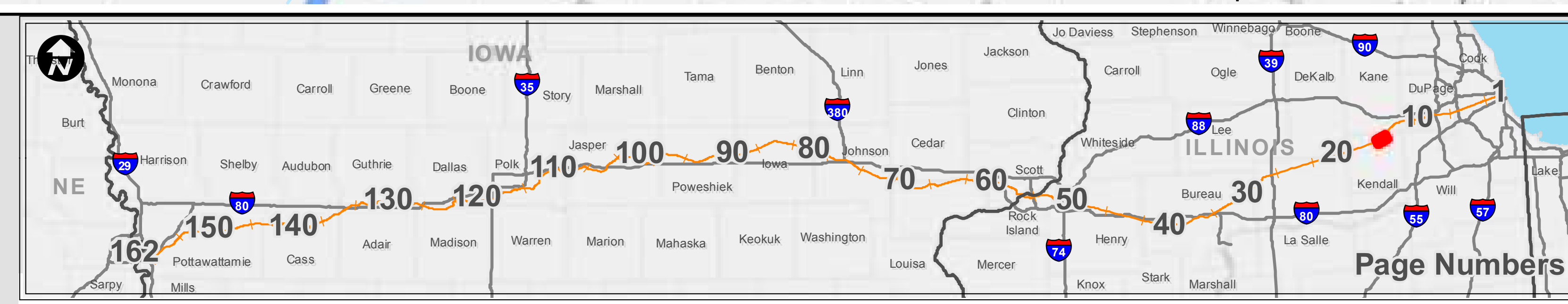

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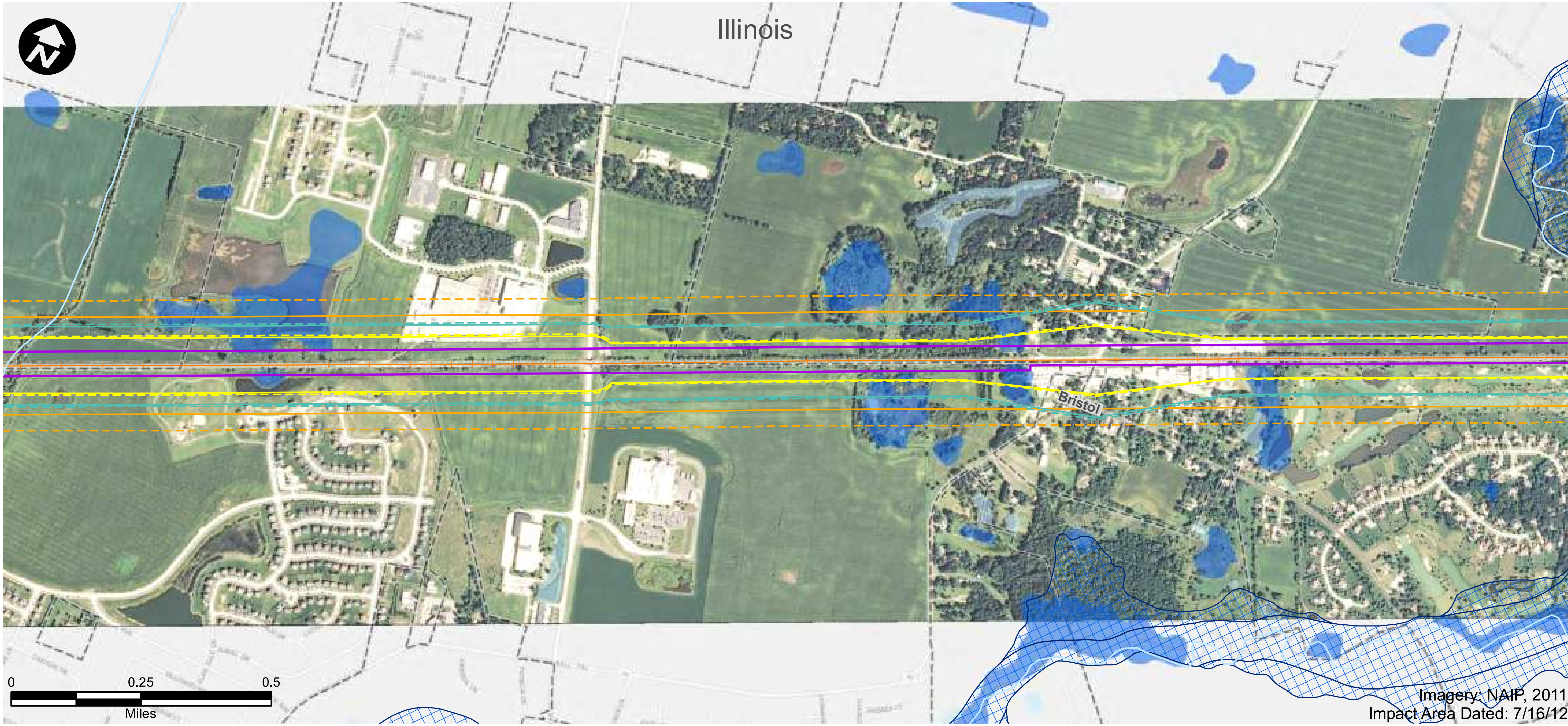

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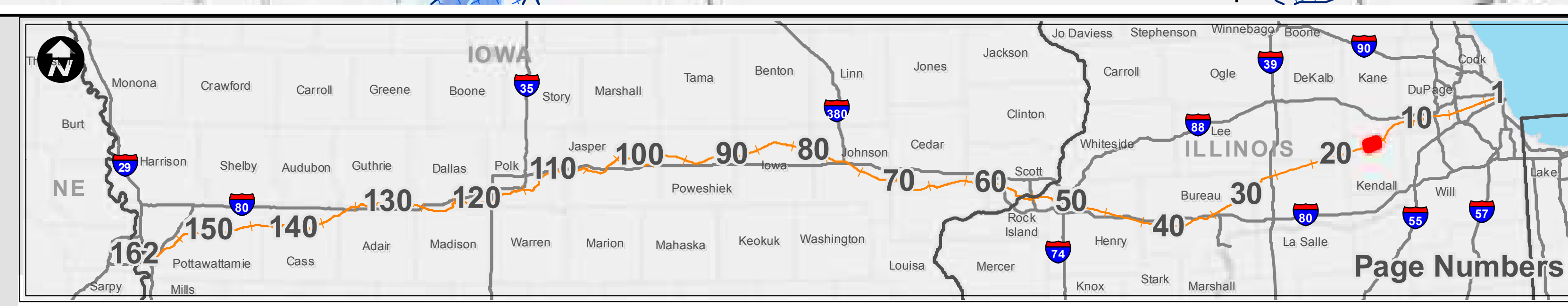

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Route Alternative
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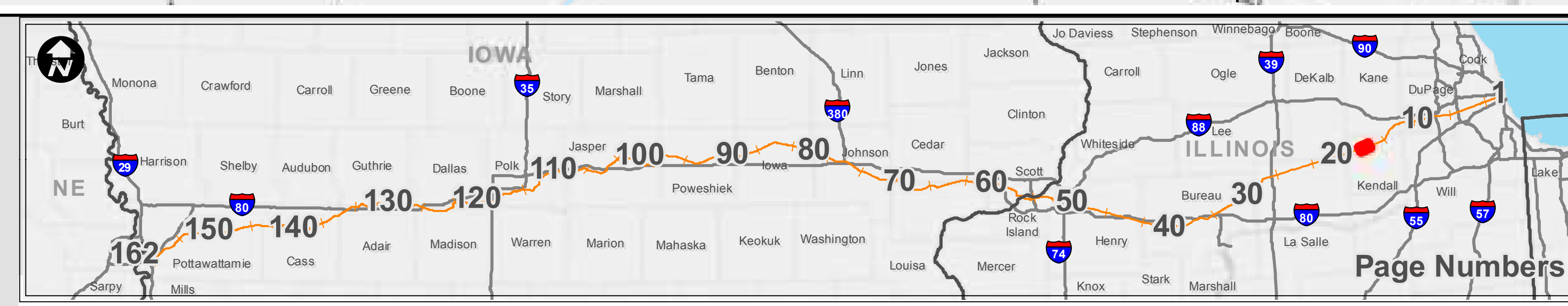

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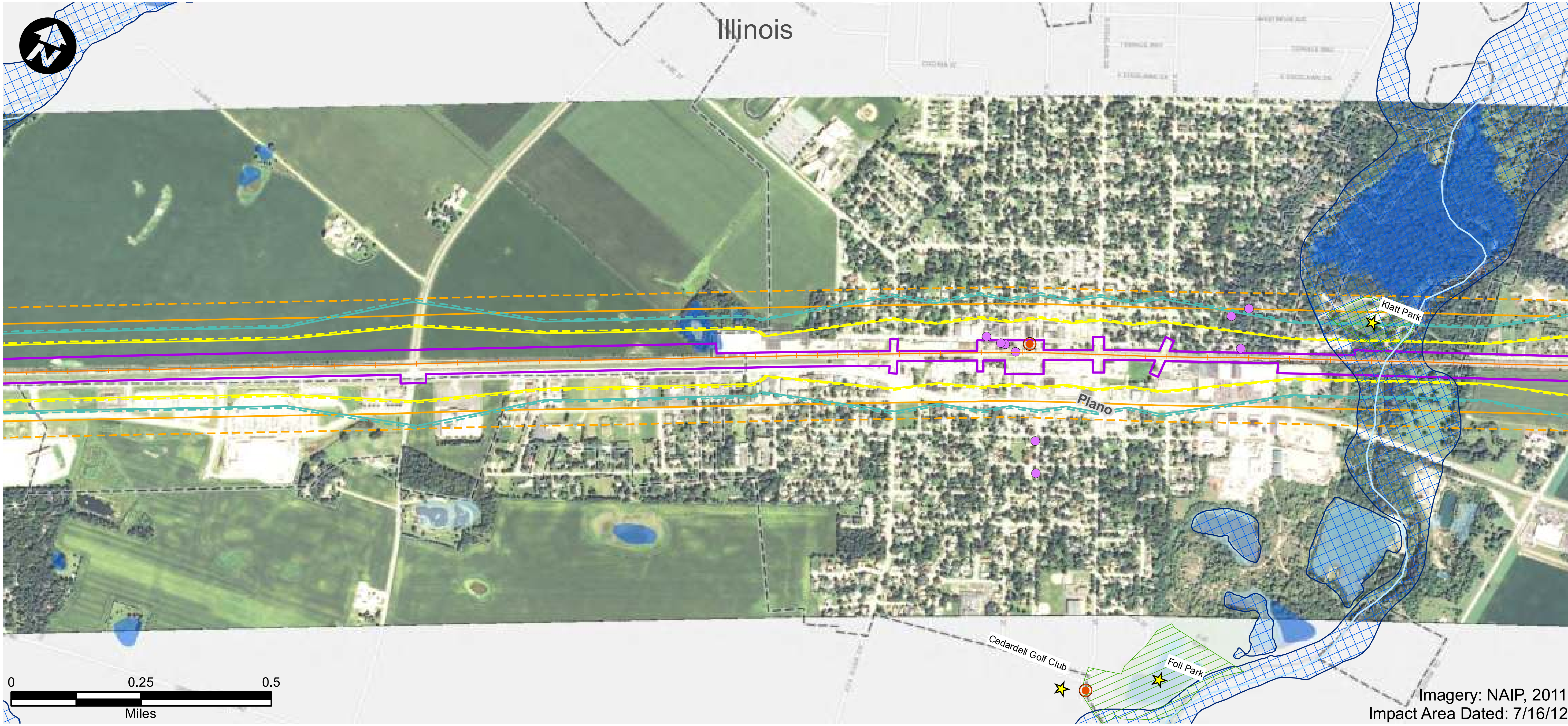

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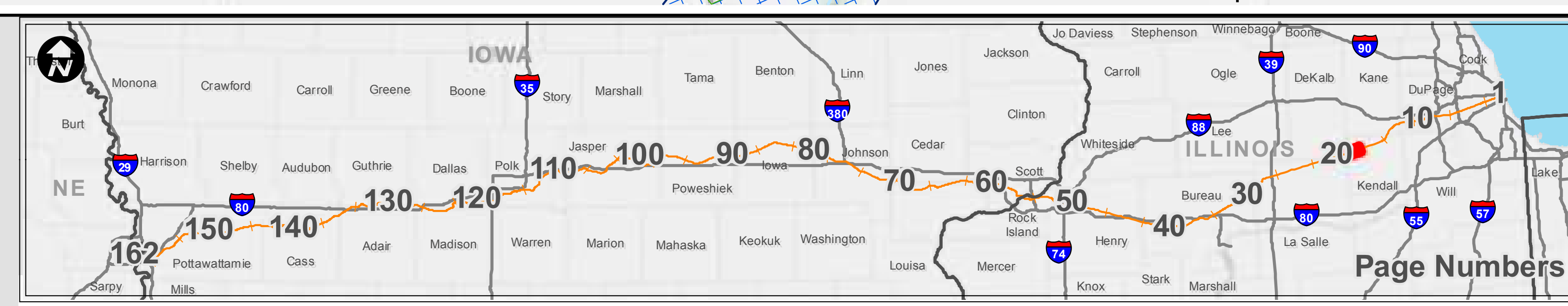

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Route Alternative
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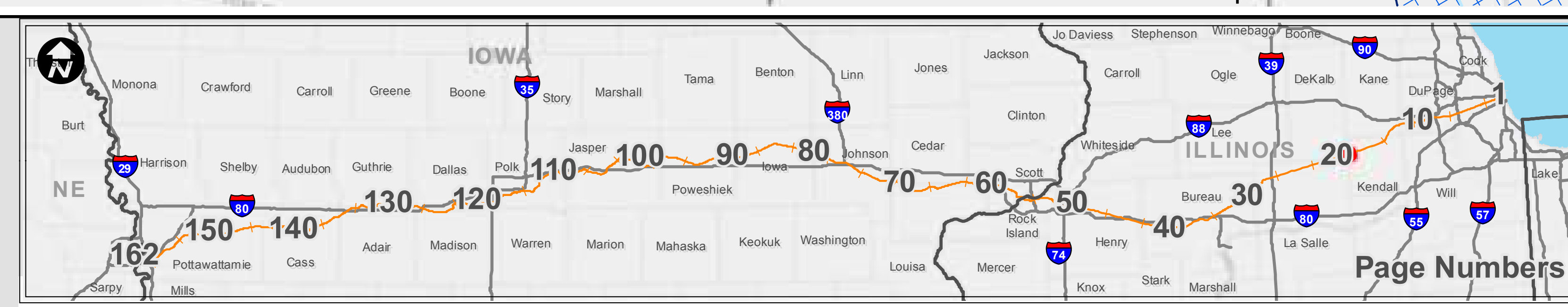

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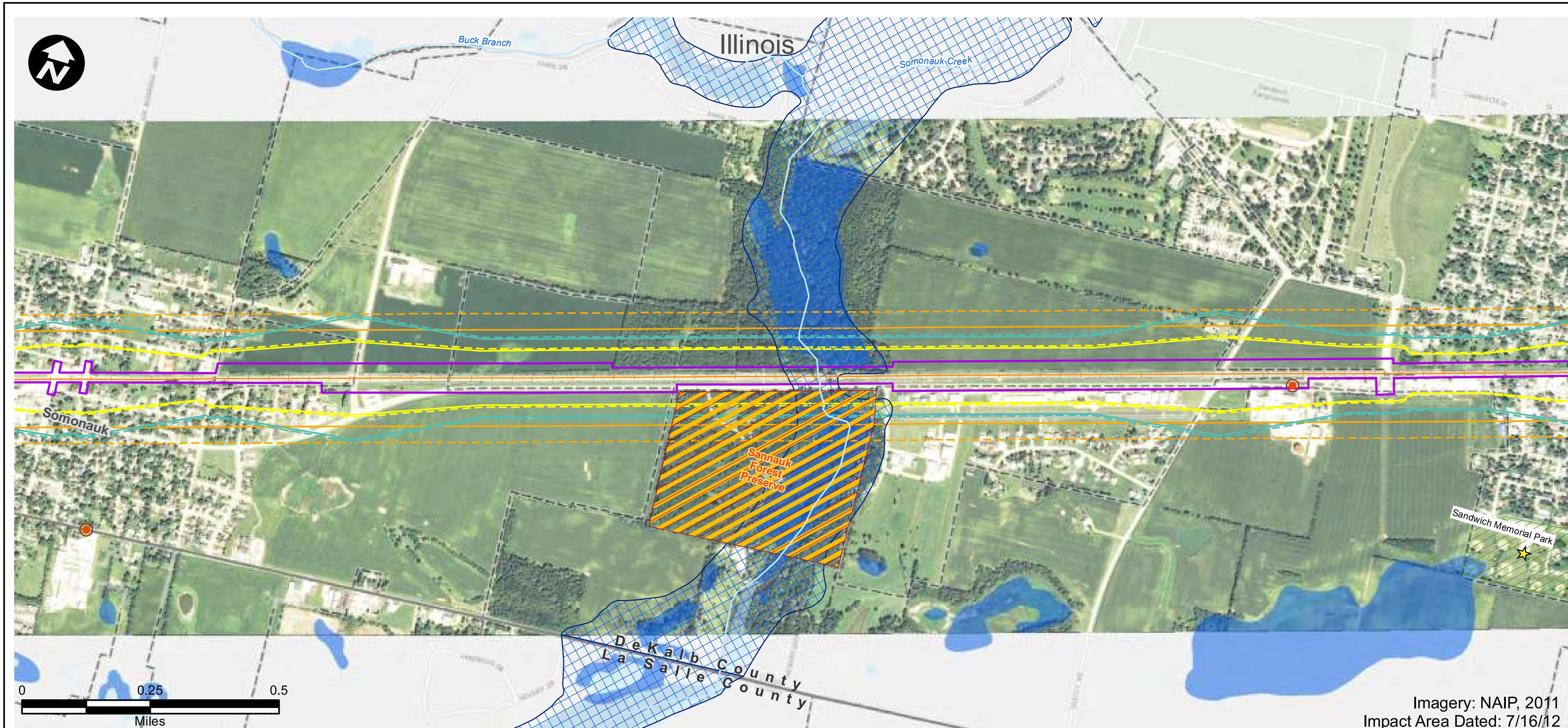

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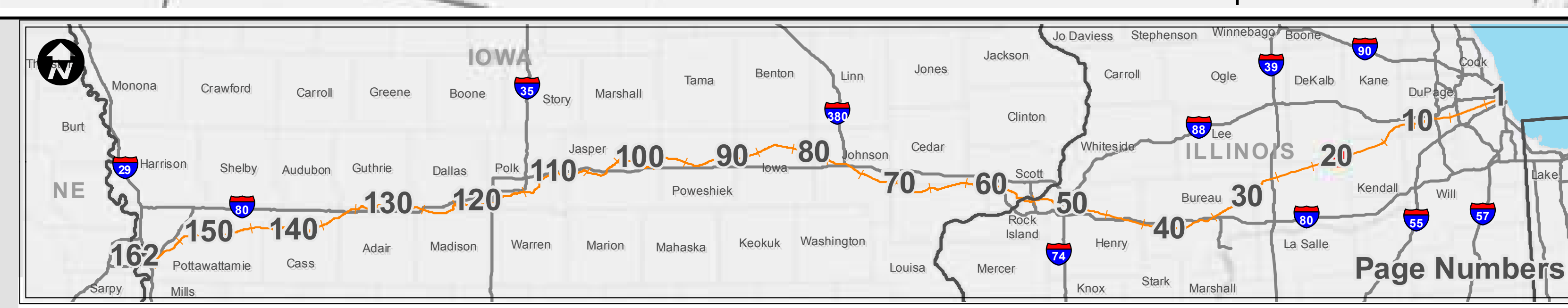

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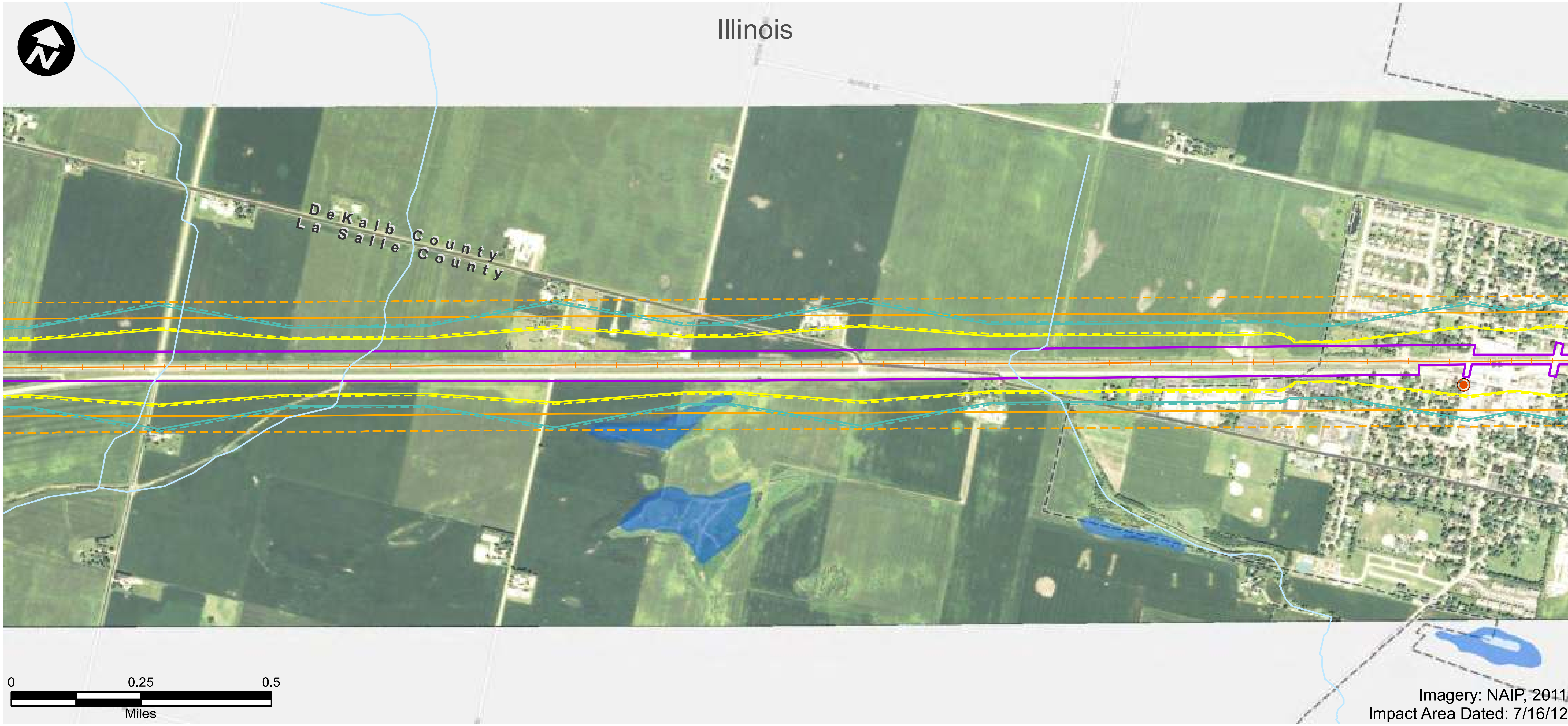

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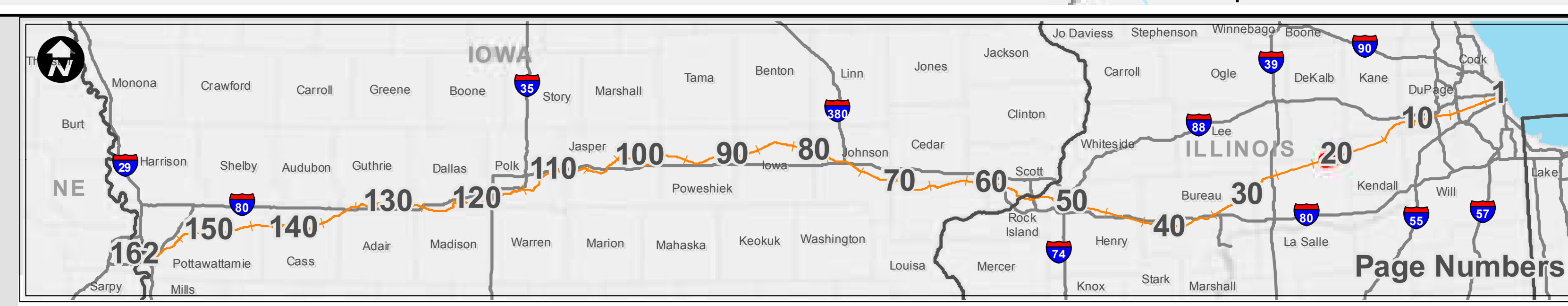

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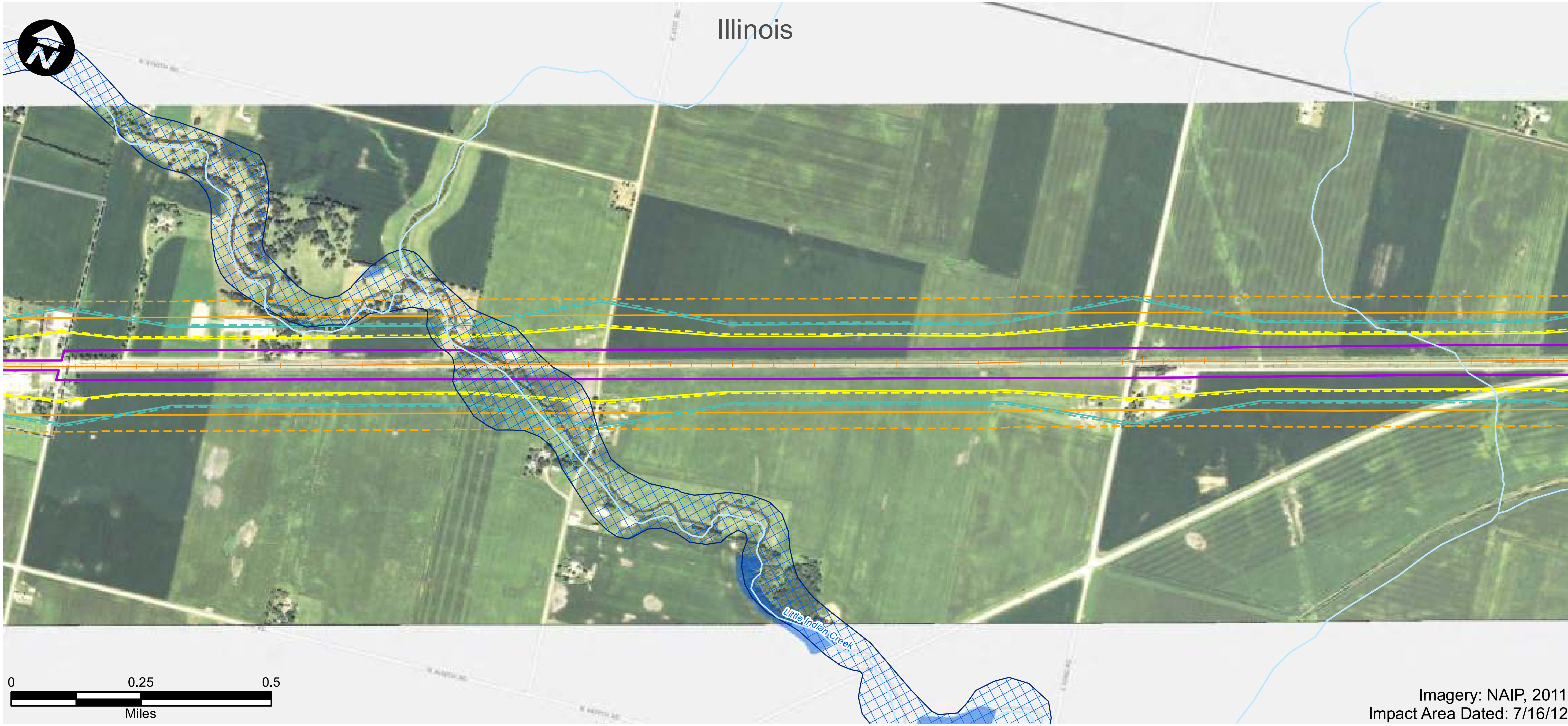

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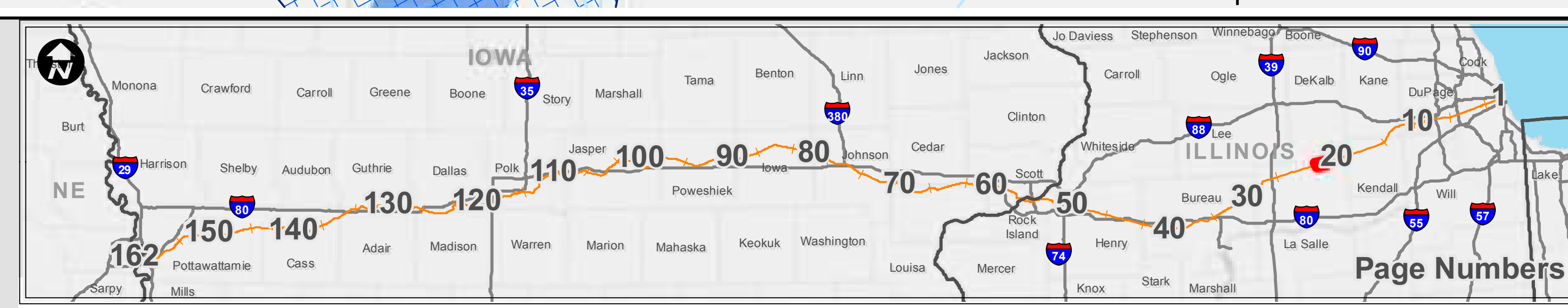

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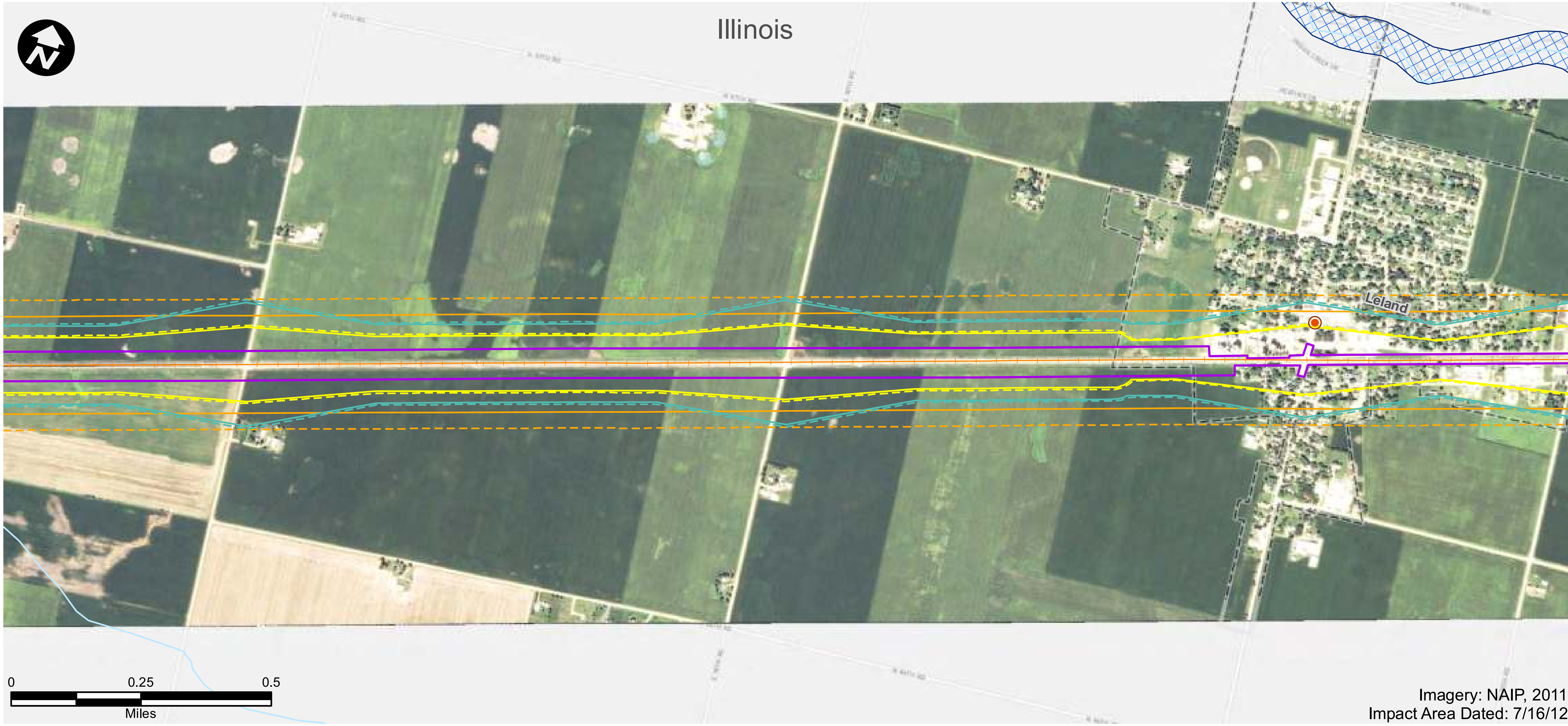

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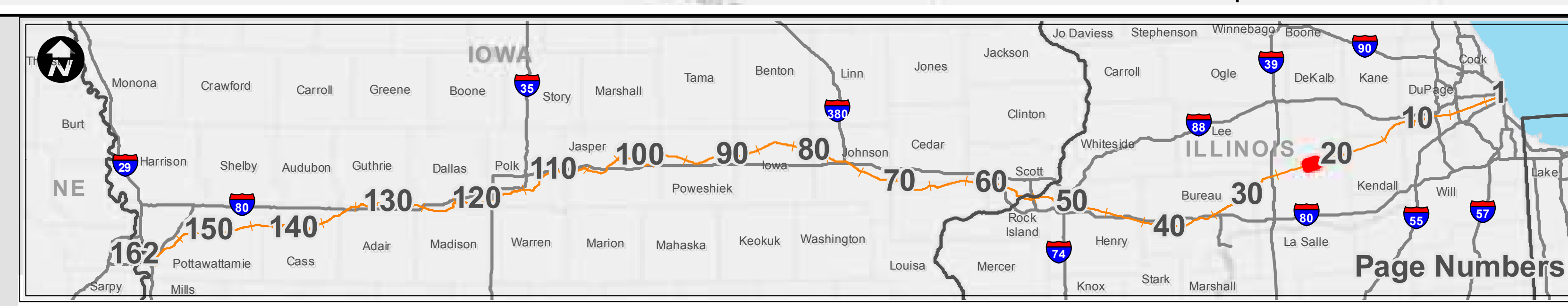

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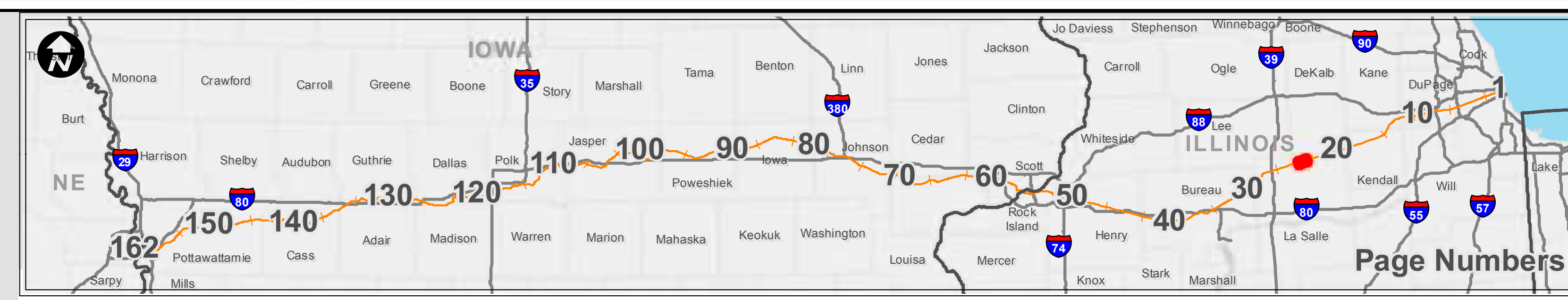

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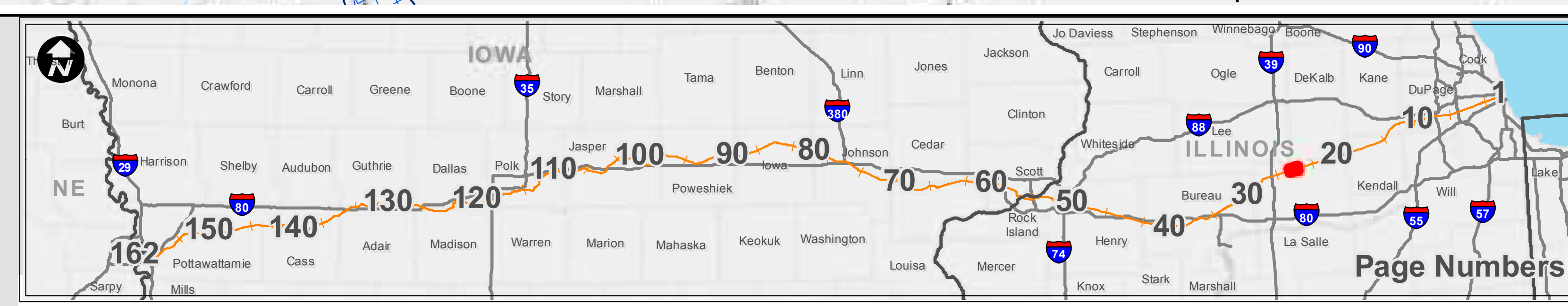

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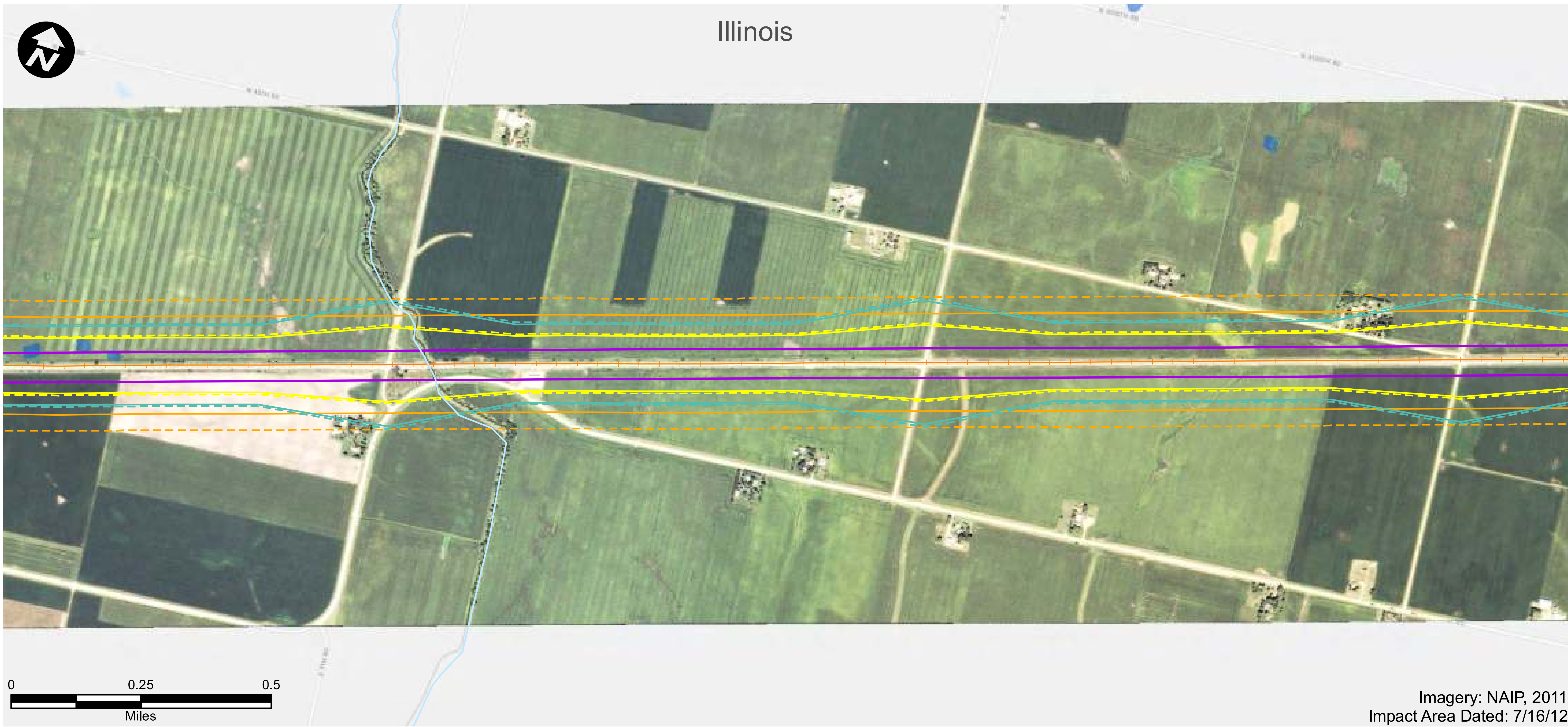

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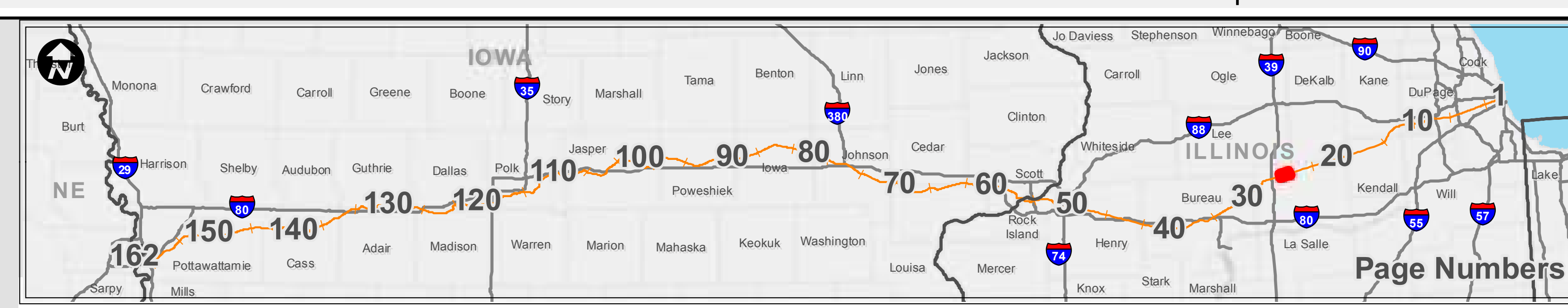

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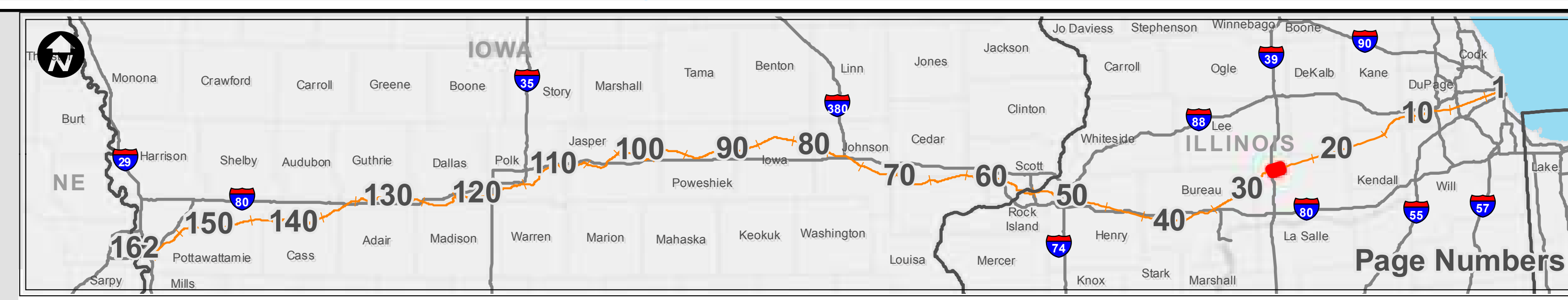

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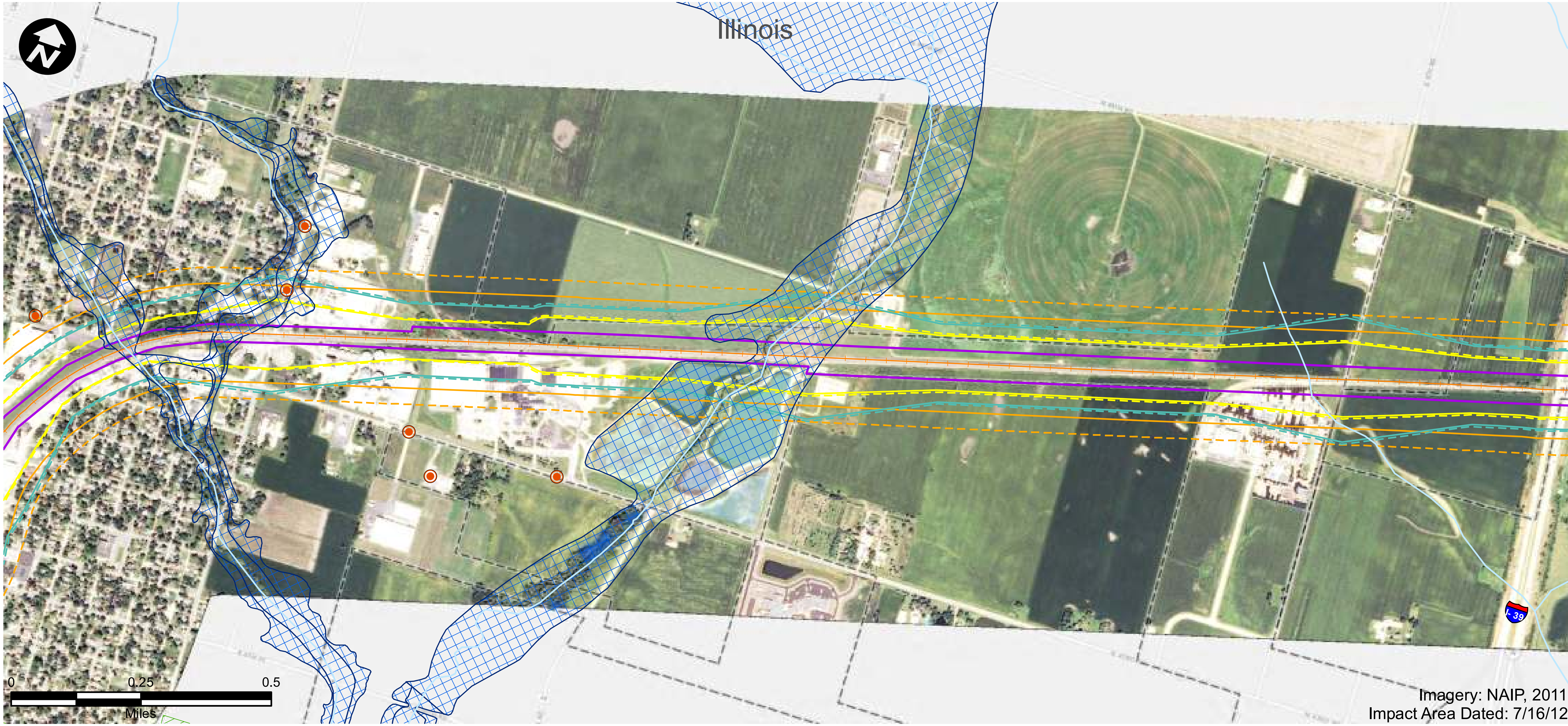

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Future Severe Level Noise
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Future Moderate Level Noise
Existing Vibration Contours
Future Vibration Contours
NWI Wetland (PAB~, PEM~, PFO, and PSS~)
NWI Lake or Pond
100-Year Floodplain
USFWS Land
IA Prairies
IA Forest Stands
IA Wildlife Management Areas
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border

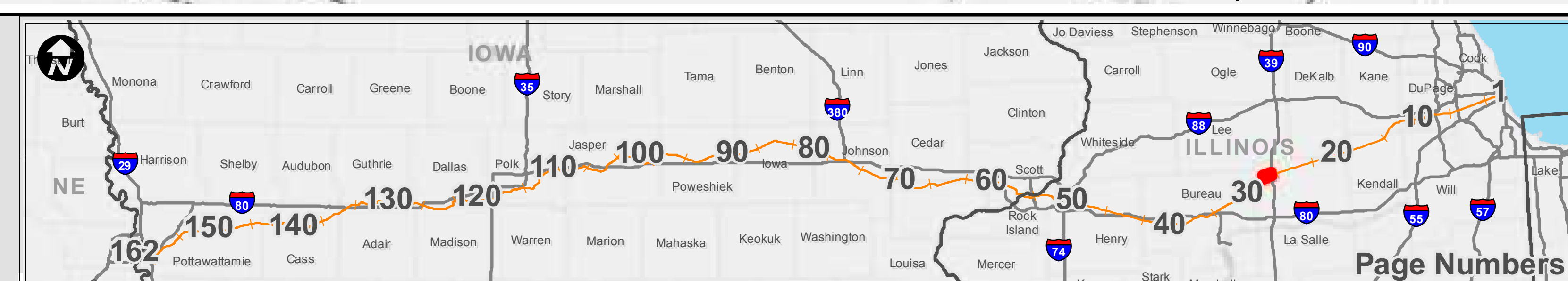

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FIGURE
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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
Existing Moderate Level Noise
Future Moderate Level Noise
Existing Vibration Contours
Future Vibration Contours
NWI Wetland (PAB~, PEM~, PFO, and PSS~)
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USFWS Land
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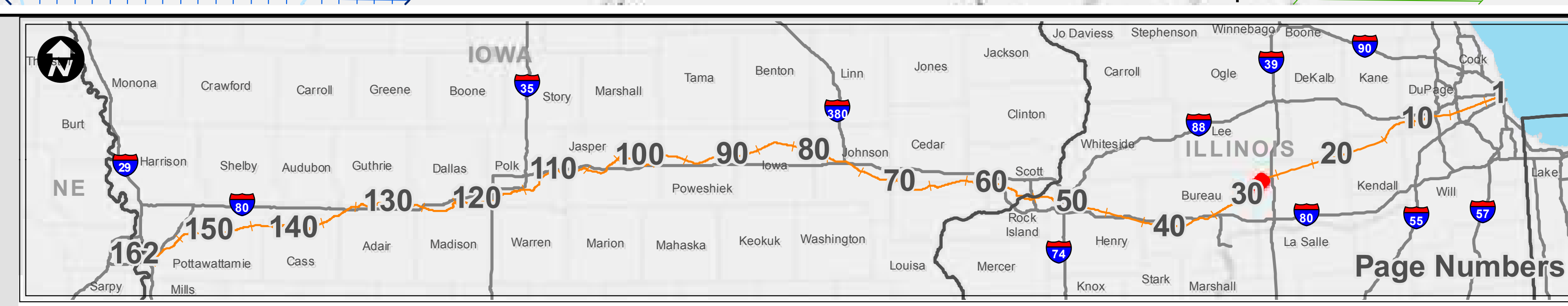
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
Existing Moderate Level Noise
Future Moderate Level Noise
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Future Vibration Contours
NWI Wetland *(PAB~, PEM~, PFO, and PSS~)*
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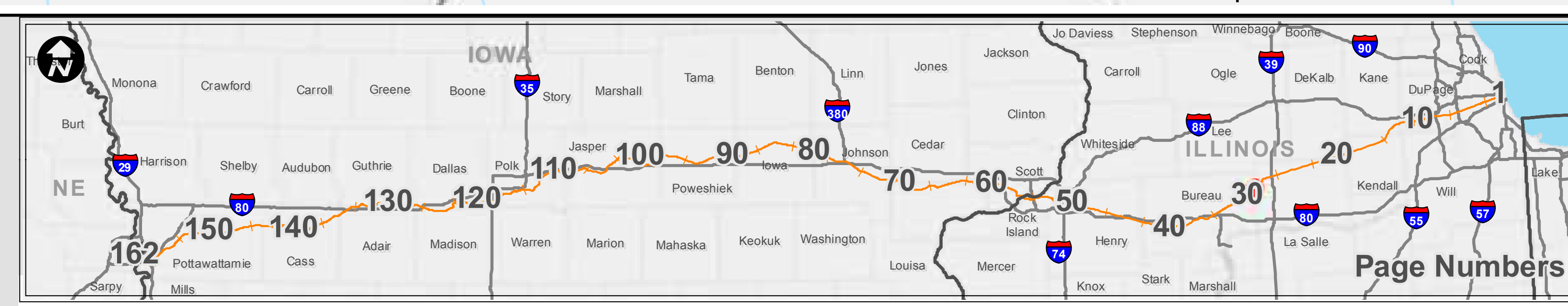
100-Year Floodplain
USFWS Land
IA Prairies
IA Forest Stands
IA Wildlife Management Areas
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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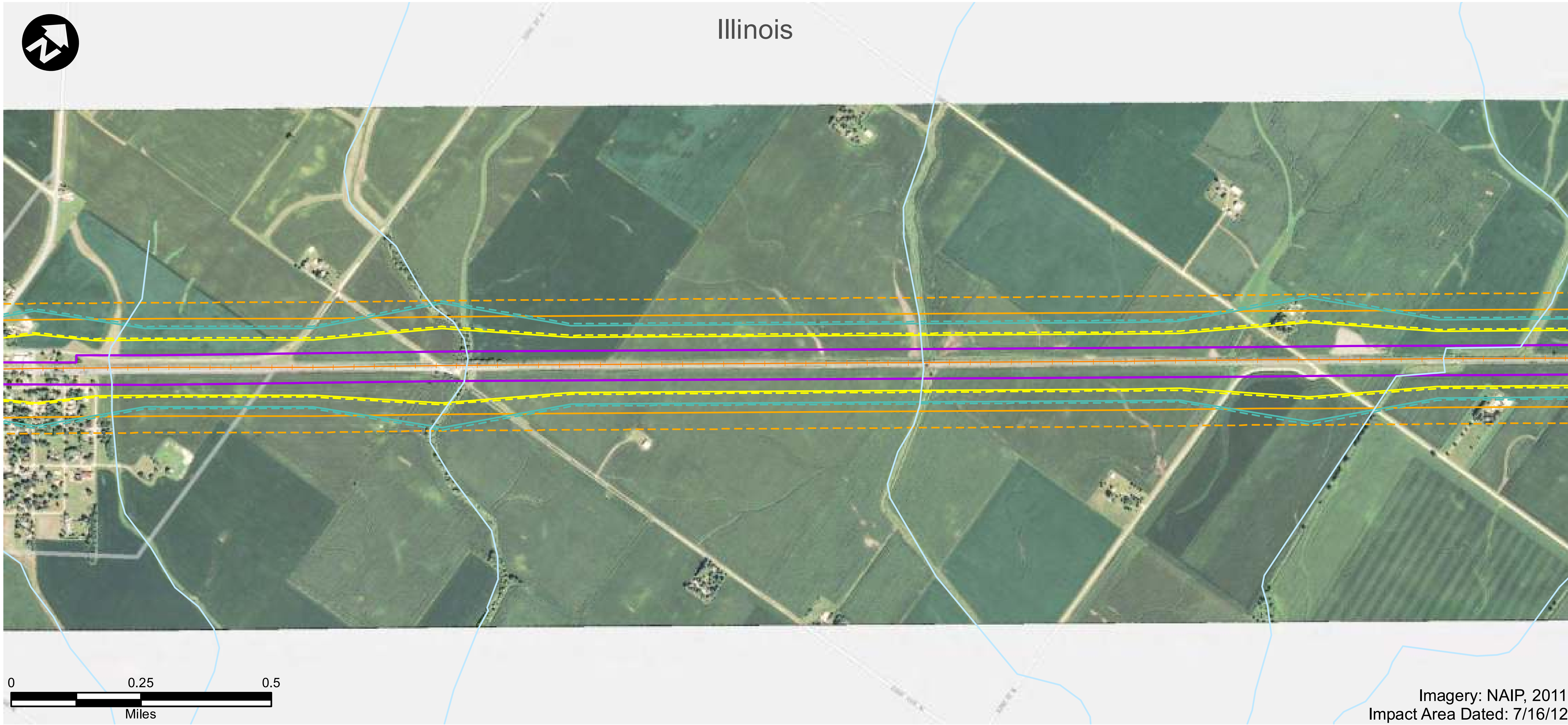
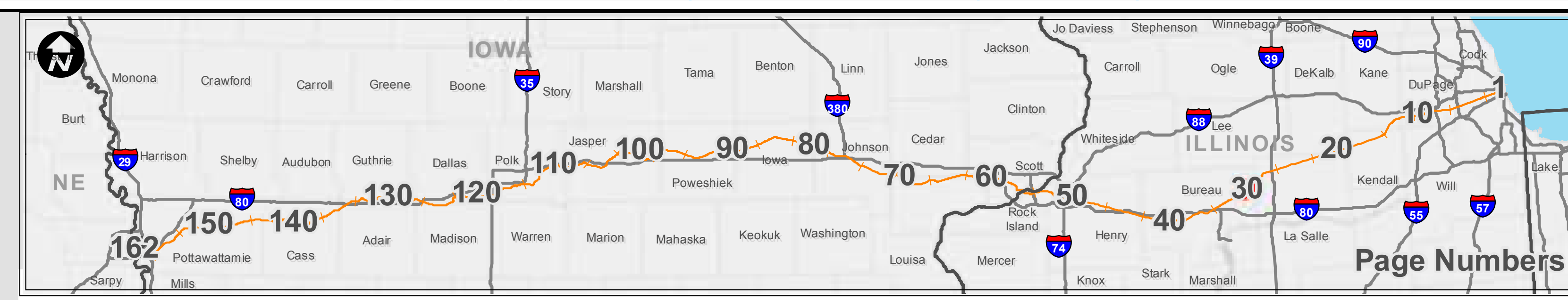


Route Alternative	Recreation Area	USFWS Land
Potential Impact Area	Existing Severe Level Noise	IA Prairies
Streams	Future Severe Level Noise	IA Forest Stands
Historic Sites	Existing Moderate Level Noise	IA Wildlife Management Areas
National Priority List Sites	Future Moderate Level Noise	IL State Natural Area
Hazardous Material Sites	Existing Vibration Contours	IL County Forest Preserves
Omaha & IA Trails	Future Vibration Contours	Topeka Shiner Critical Habitat
Parks	NWI Wetland (PAB~, PEM~, PFO, and PSS~)	City Boundary
IA State Recreational Land	NWI Lake or Pond	County Border
	100-Year Floodplain	



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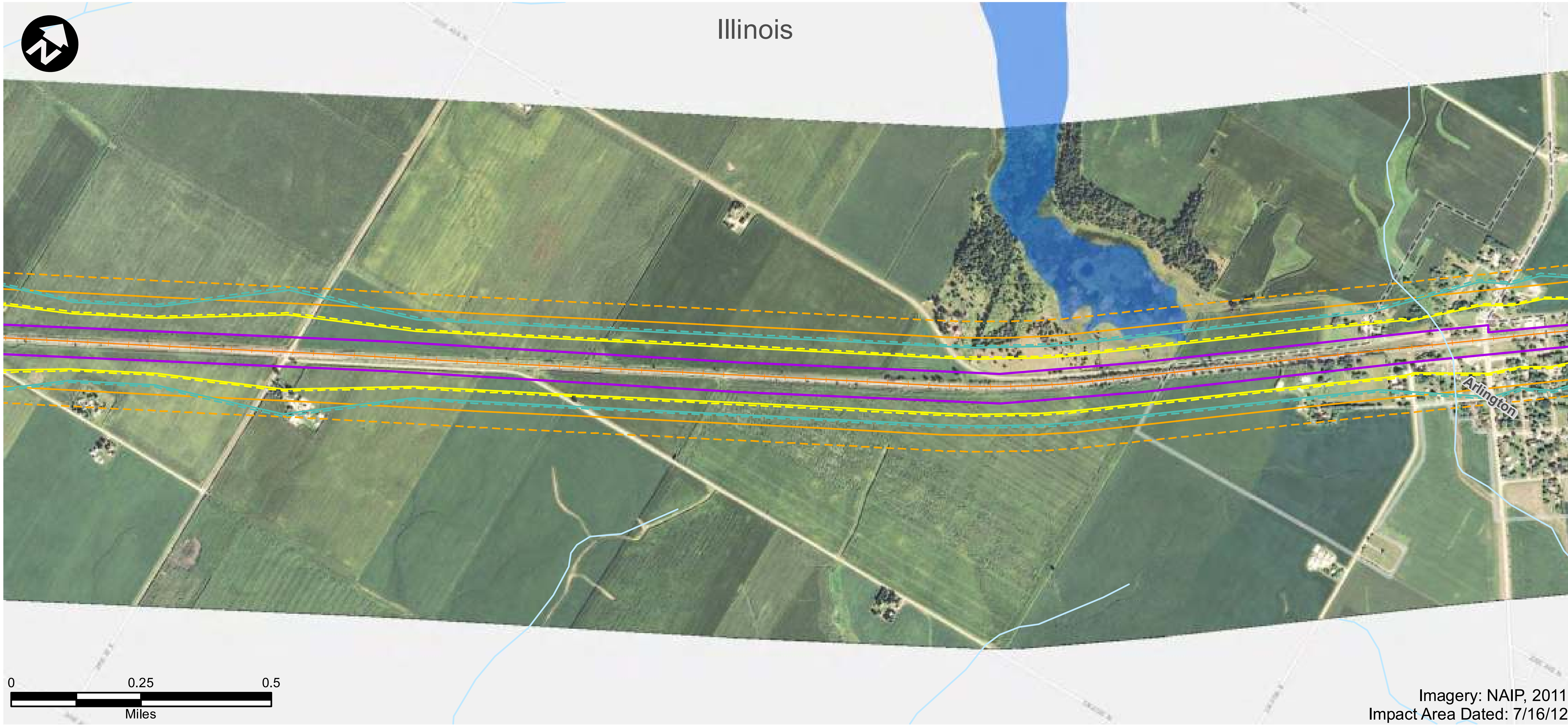
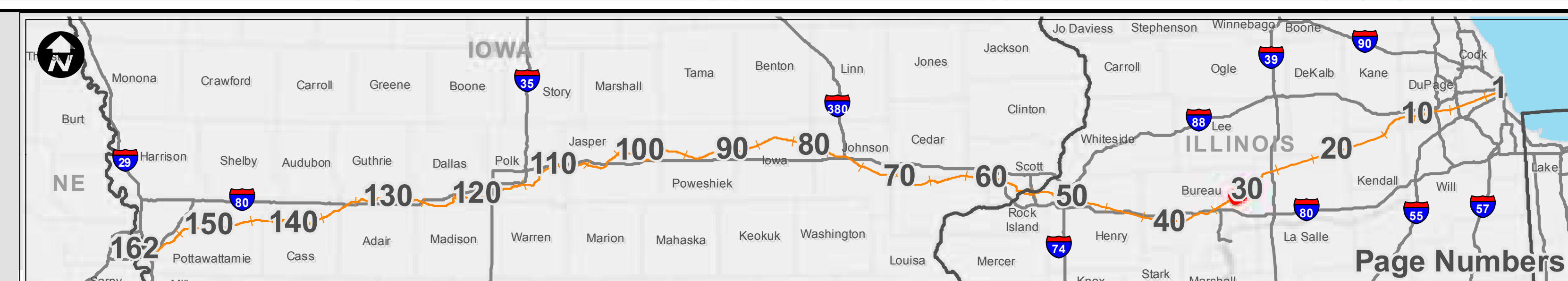


- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
- Existing Severe Level Noise
- Future Severe Level Noise
- Existing Moderate Level Noise
- Future Moderate Level Noise
- Existing Vibration Contours
- Future Vibration Contours
- NWI Wetland (PAB~, PEM~, PFO, and PSS~)
- NWI Lake or Pond
- 100-Year Floodplain
- USFWS Land
- IA Prairies
- IA Forest Stands
- IA Wildlife Management Areas
- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border



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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
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Future Moderate Level Noise
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IA Prairies
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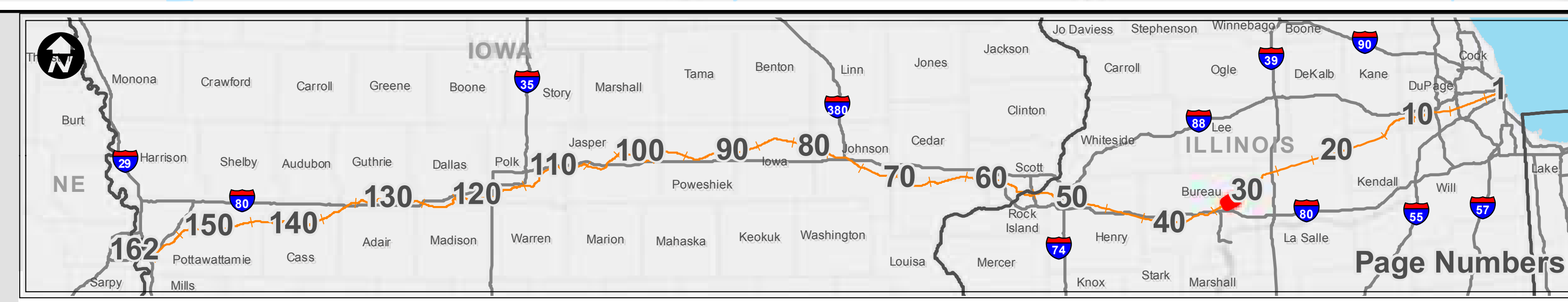
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
- Existing Severe Level Noise
- Future Severe Level Noise
- Existing Moderate Level Noise
- Future Moderate Level Noise
- Existing Vibration Contours
- Future Vibration Contours
- NWI Wetland (PAB~, PEM~, PFO, and PSS~)
- NWI Lake or Pond
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- IA Forest Stands
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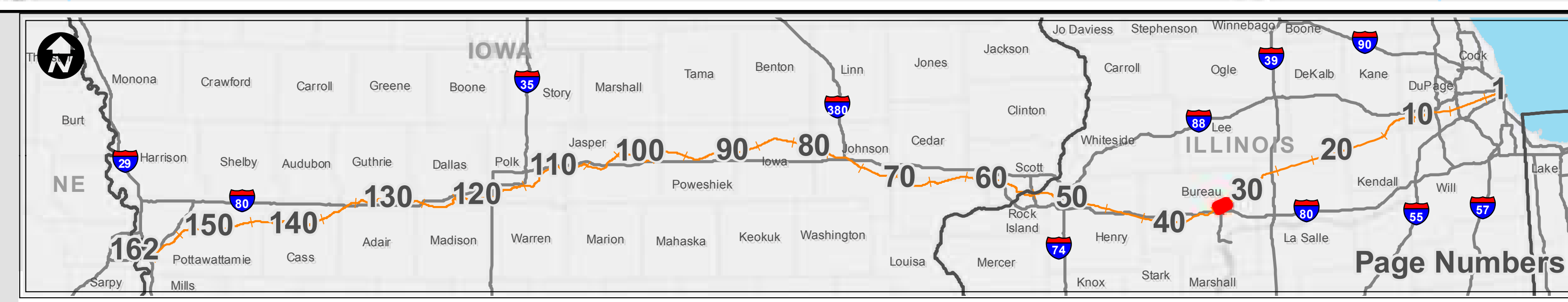
- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border



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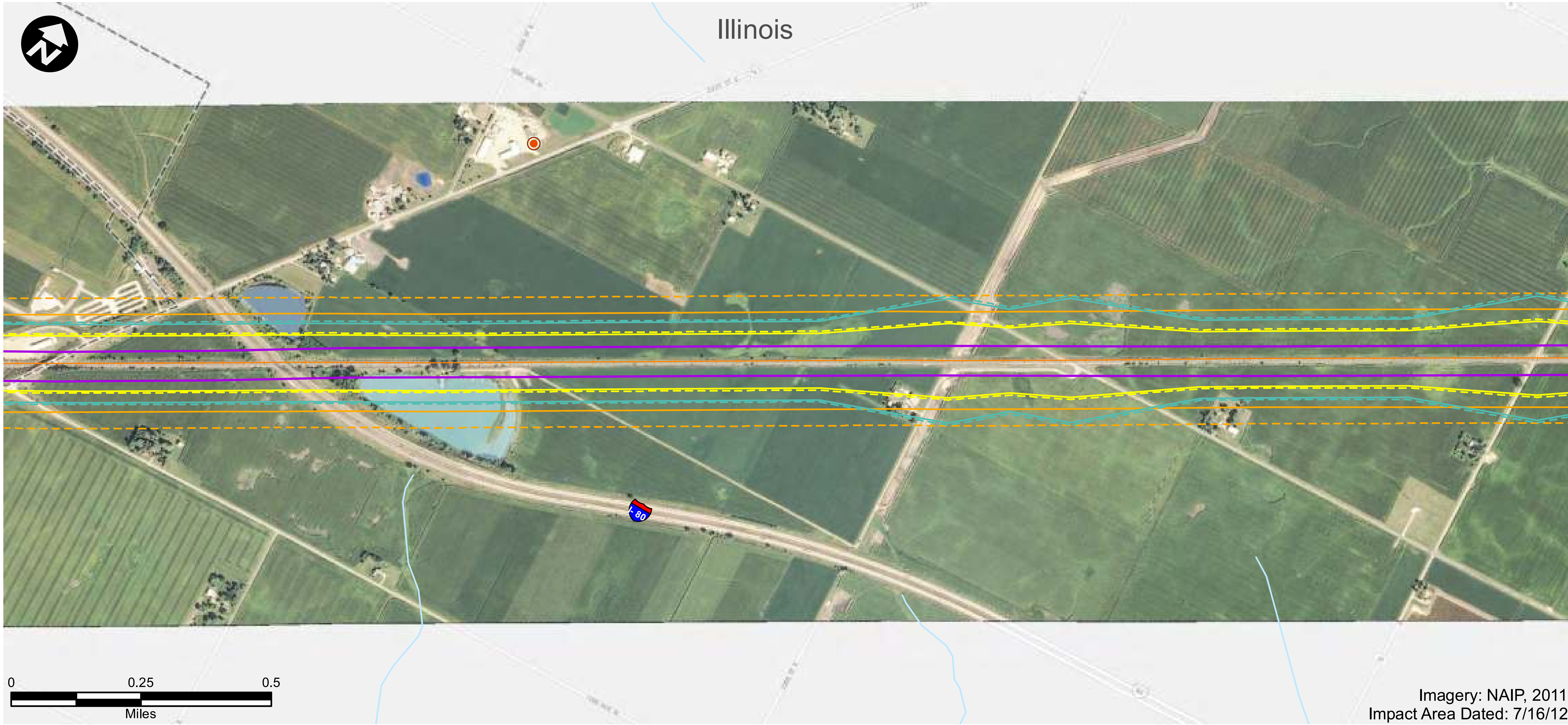

- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
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- Future Severe Level Noise
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- Future Moderate Level Noise
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- Future Vibration Contours
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- USFWS Land
- IA Prairies
- IA Forest Stands
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- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border

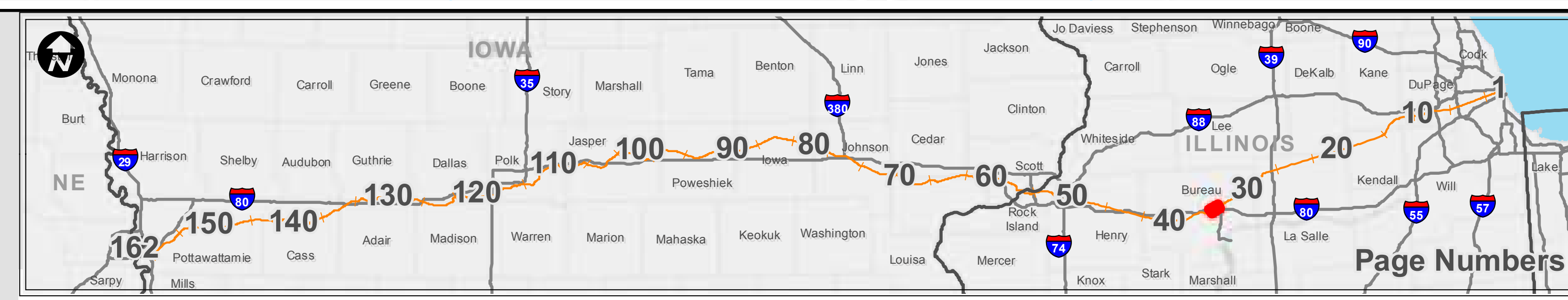

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FIGURE
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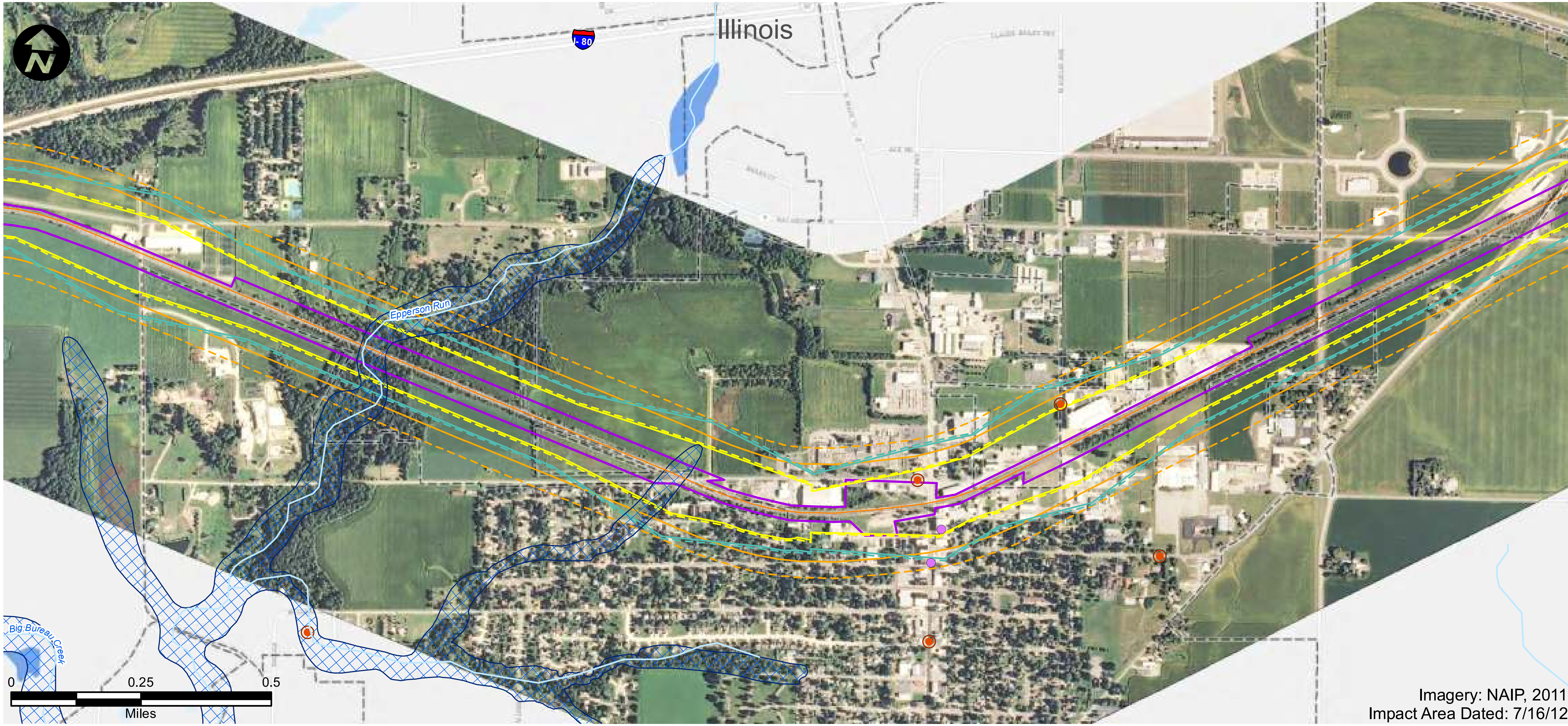

- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
- Existing Severe Level Noise
- Future Severe Level Noise
- Existing Moderate Level Noise
- Future Moderate Level Noise
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- Future Vibration Contours
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- USFWS Land
- IA Prairies
- IA Forest Stands
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- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border

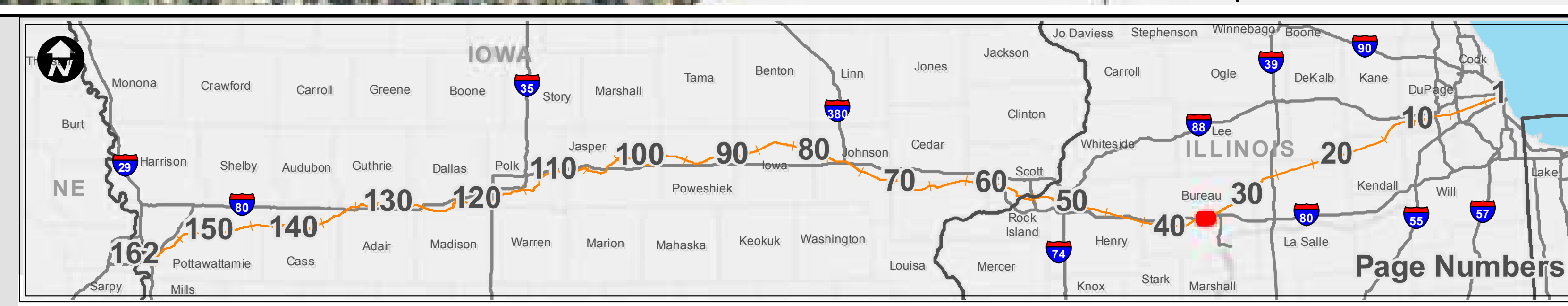

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FIGURE
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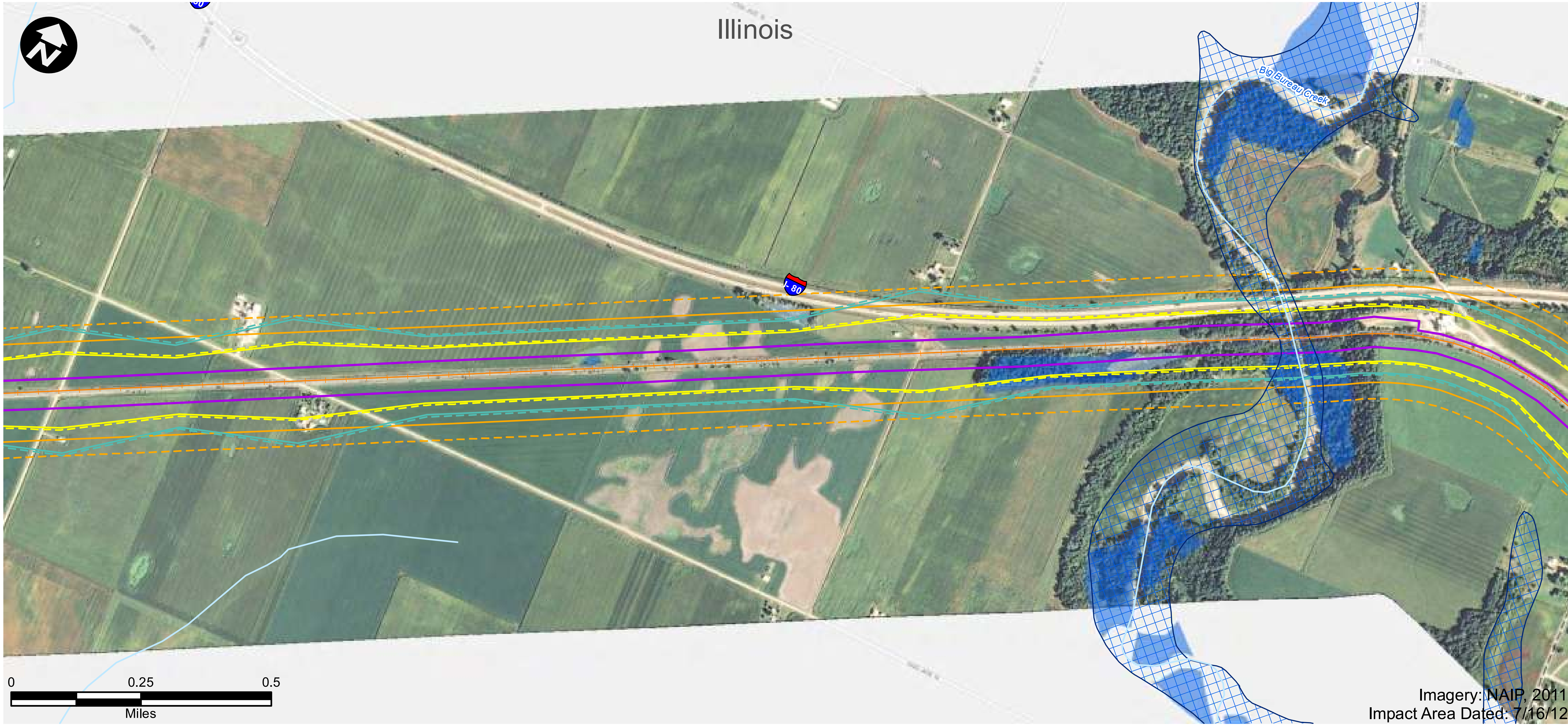
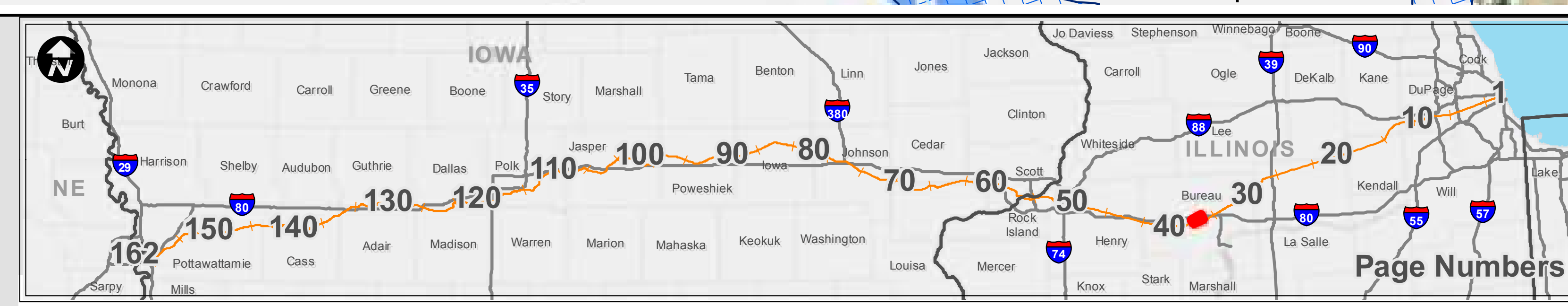


- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
- Existing Severe Level Noise
- Future Severe Level Noise
- Existing Moderate Level Noise
- Future Moderate Level Noise
- Existing Vibration Contours
- Future Vibration Contours
- NWI Wetland (PAB~, PEM~, PFO, and PSS~)
- NWI Lake or Pond
- 100-Year Floodplain
- USFWS Land
- IA Prairies
- IA Forest Stands
- IA Wildlife Management Areas
- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border



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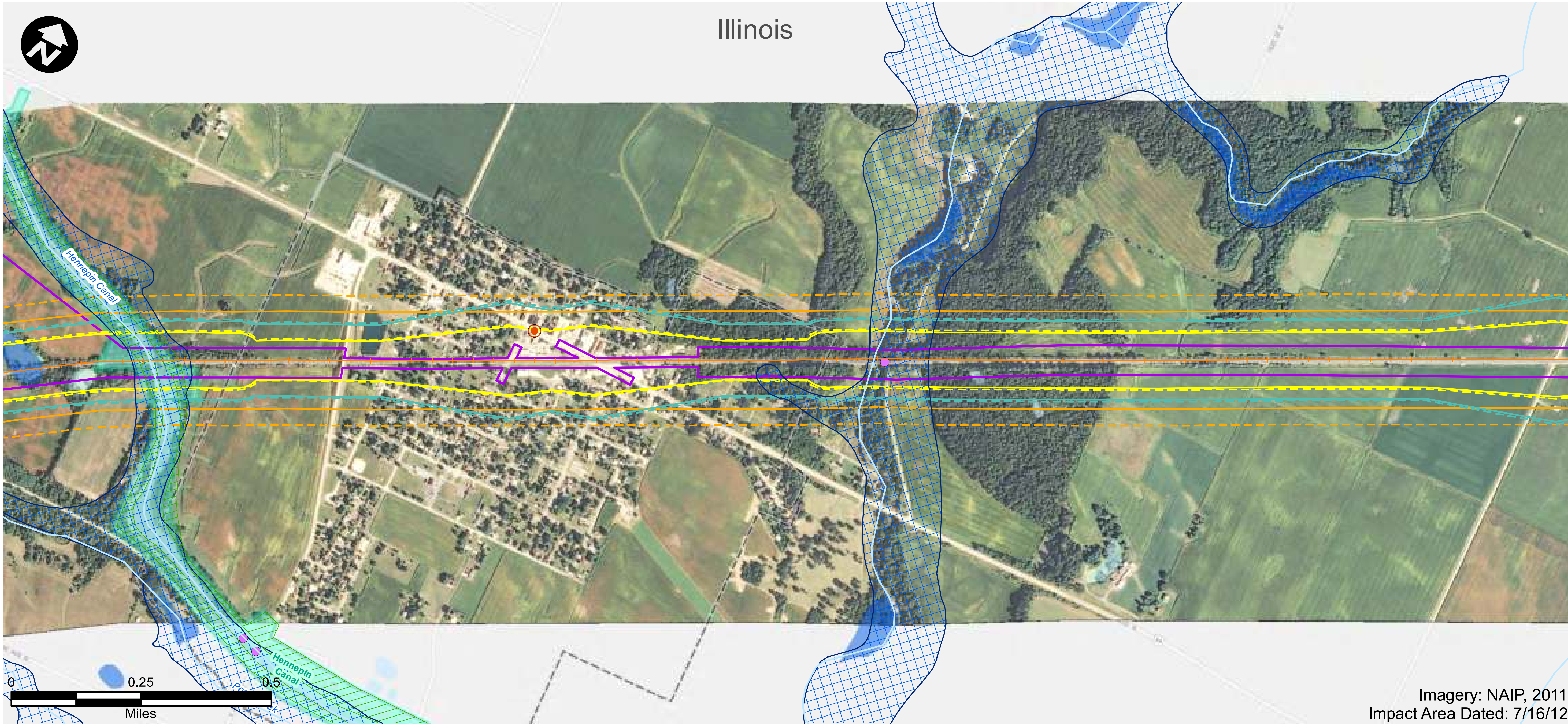
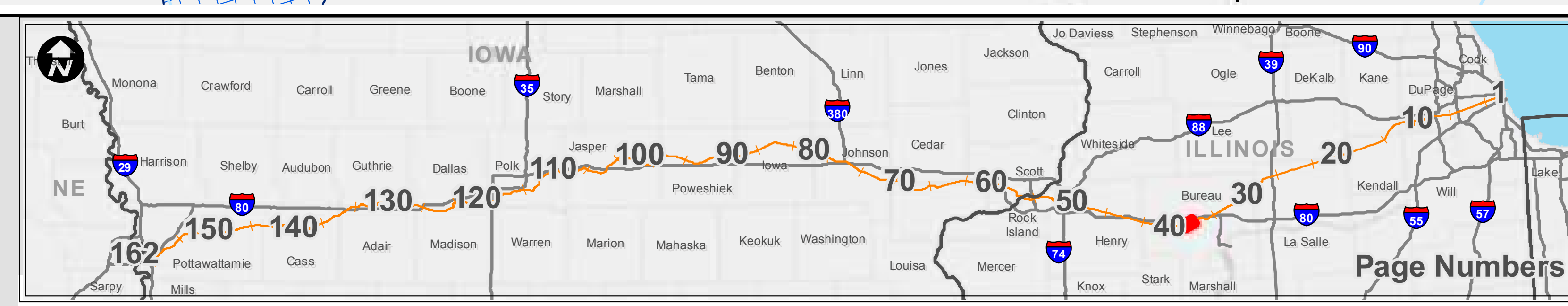


Route Alternative	Recreation Area	USFWS Land
Potential Impact Area	Existing Severe Level Noise	IA Prairies
Streams	Future Severe Level Noise	IA Forest Stands
Historic Sites	Existing Moderate Level Noise	IA Wildlife Management Areas
National Priority List Sites	Future Moderate Level Noise	IL State Natural Area
Hazardous Material Sites	Existing Vibration Contours	IL County Forest Preserves
Omaha & IA Trails	Future Vibration Contours	Topeka Shiner Critical Habitat
Parks	NWI Wetland (PAB~, PEM~, PFO, and PSS~)	City Boundary
IA State Recreational Land	NWI Lake or Pond	County Border
	100-Year Floodplain	



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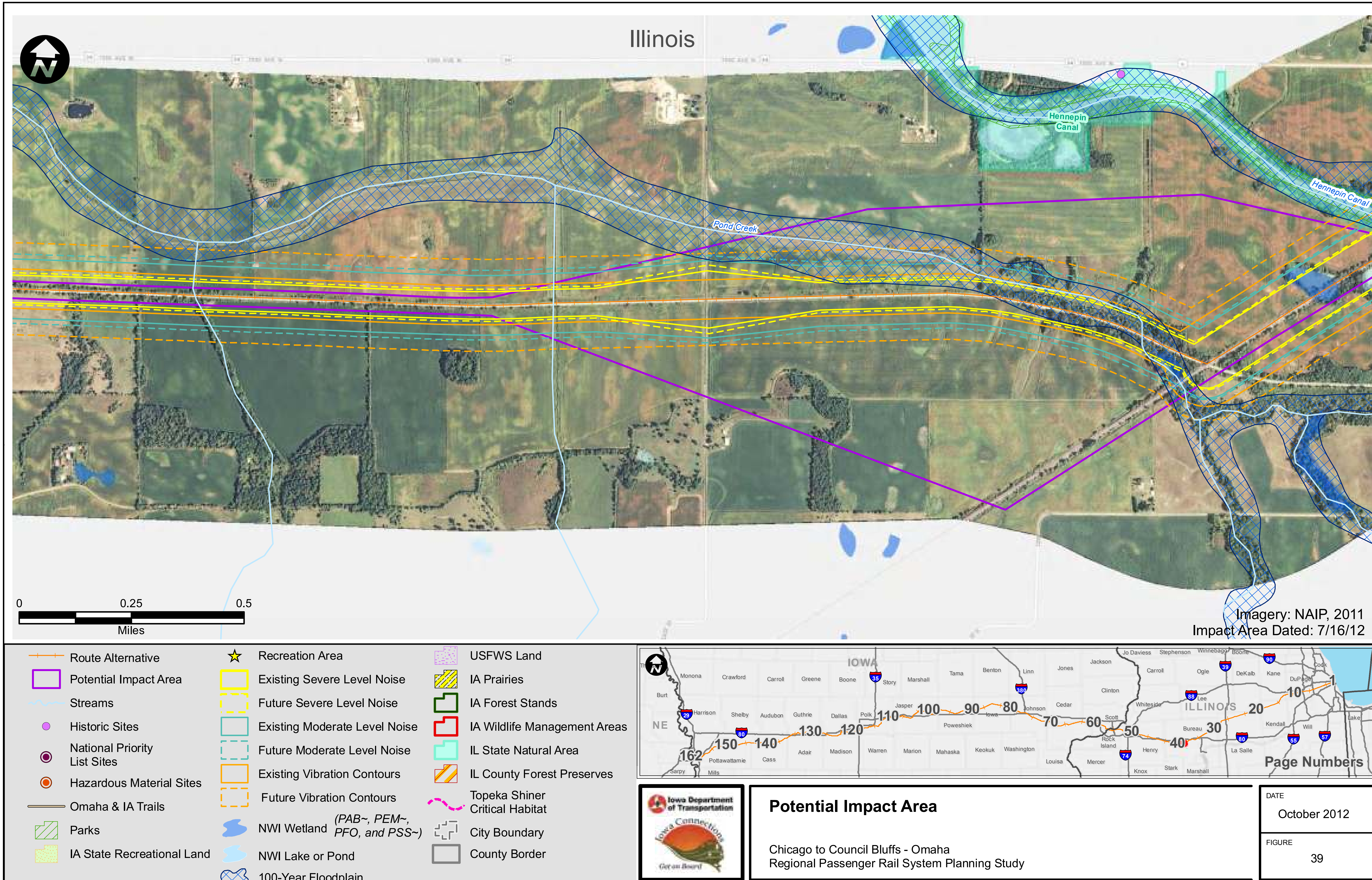

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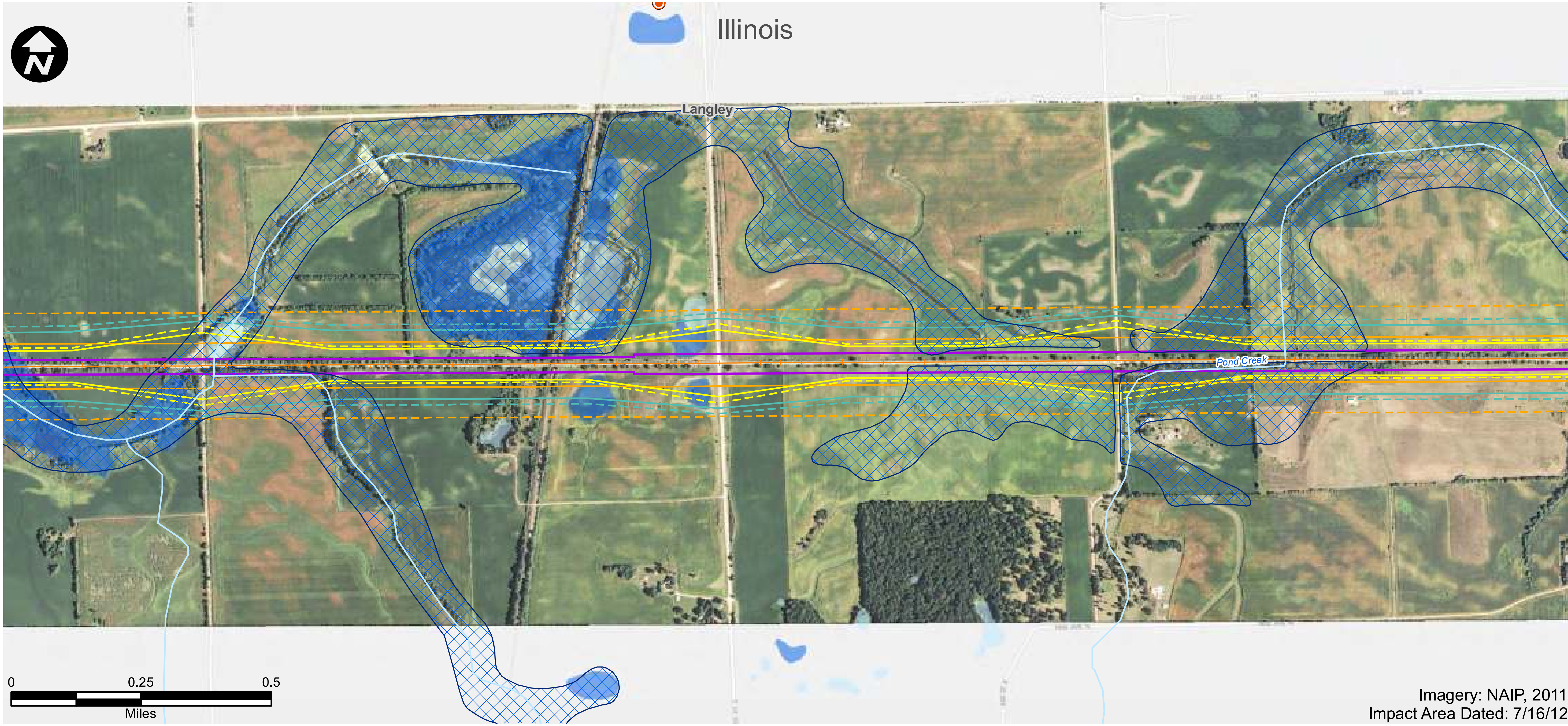

- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
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- Future Severe Level Noise
- Existing Moderate Level Noise
- Future Moderate Level Noise
- Existing Vibration Contours
- Future Vibration Contours
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- IA Prairies
- IA Forest Stands
- IA Wildlife Management Areas
- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border

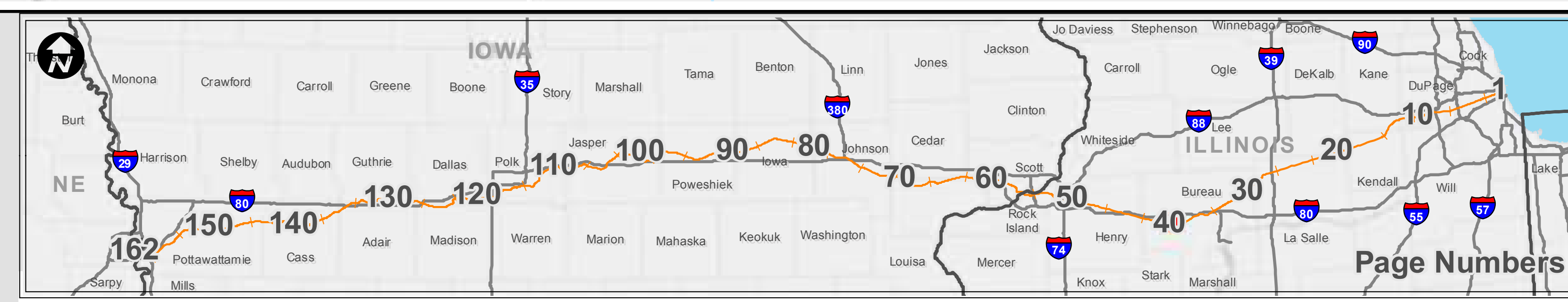

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FIGURE
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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
Existing Moderate Level Noise
Future Moderate Level Noise
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IA Forest Stands
IA Wildlife Management Areas
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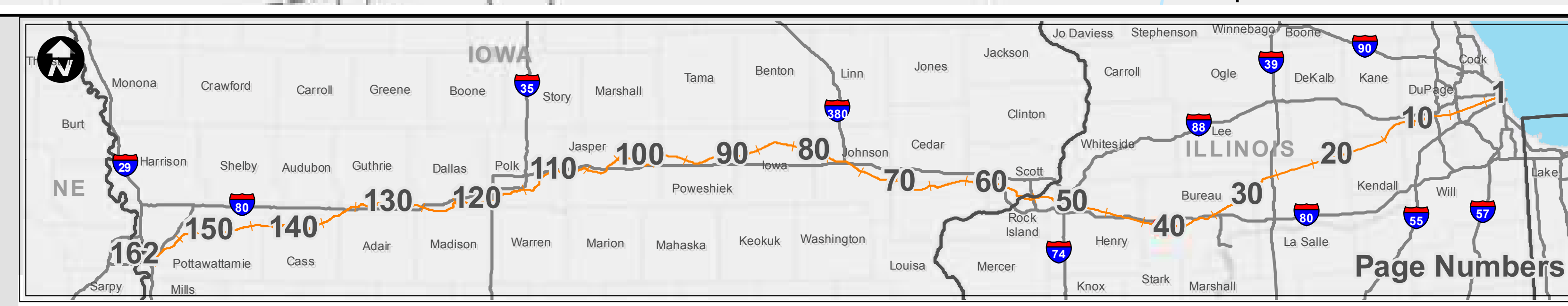
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
Existing Moderate Level Noise
Future Moderate Level Noise
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IA Wildlife Management Areas
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IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border

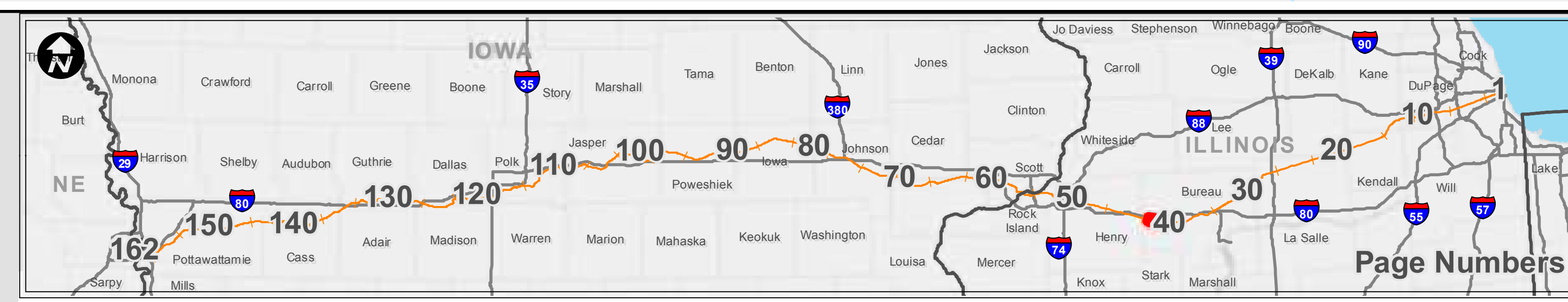

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FIGURE
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- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
- Existing Severe Level Noise
- Future Severe Level Noise
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- IL State Natural Area
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- Topeka Shiner Critical Habitat
- City Boundary
- County Border

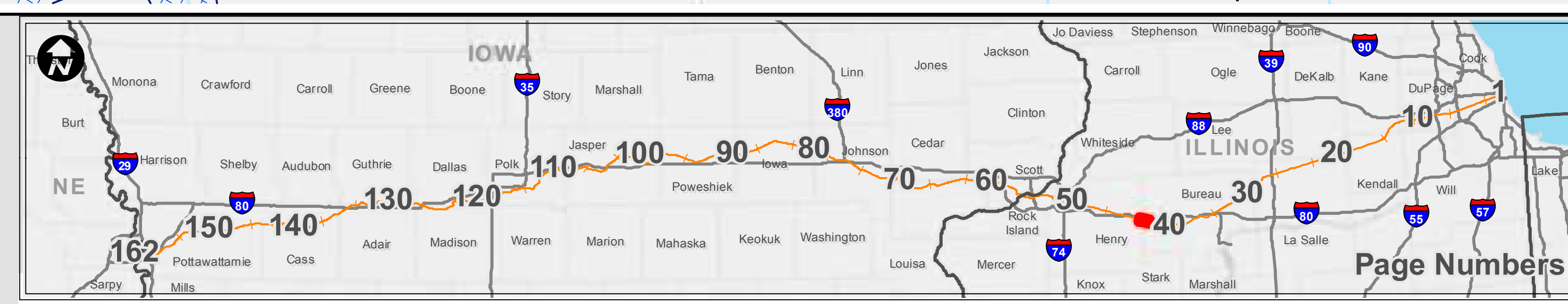

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FIGURE
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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
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Future Moderate Level Noise
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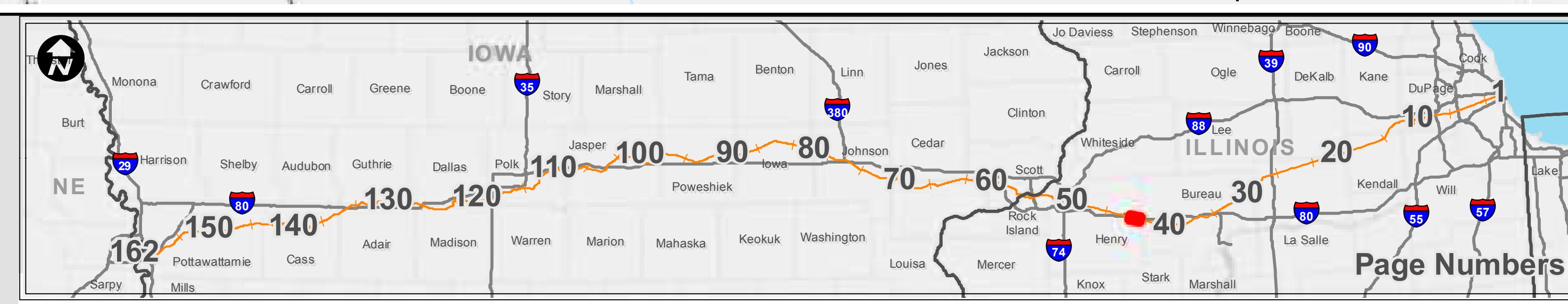
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
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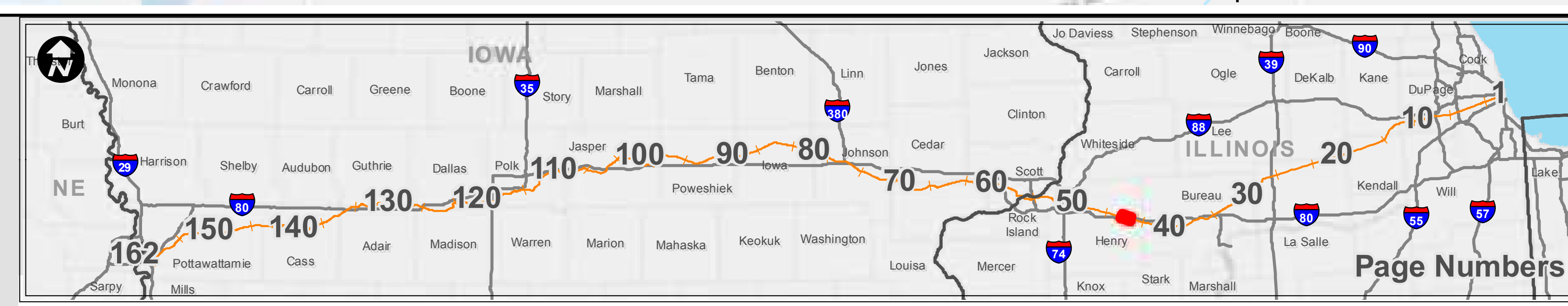

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FIGURE
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Route Alternative
Potential Impact Area
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National Priority List Sites
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Parks
IA State Recreational Land
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Existing Severe Level Noise
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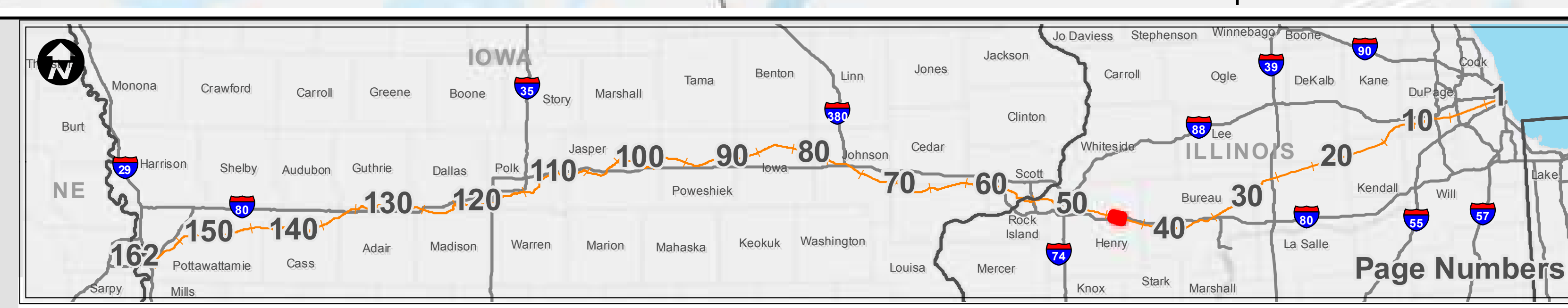

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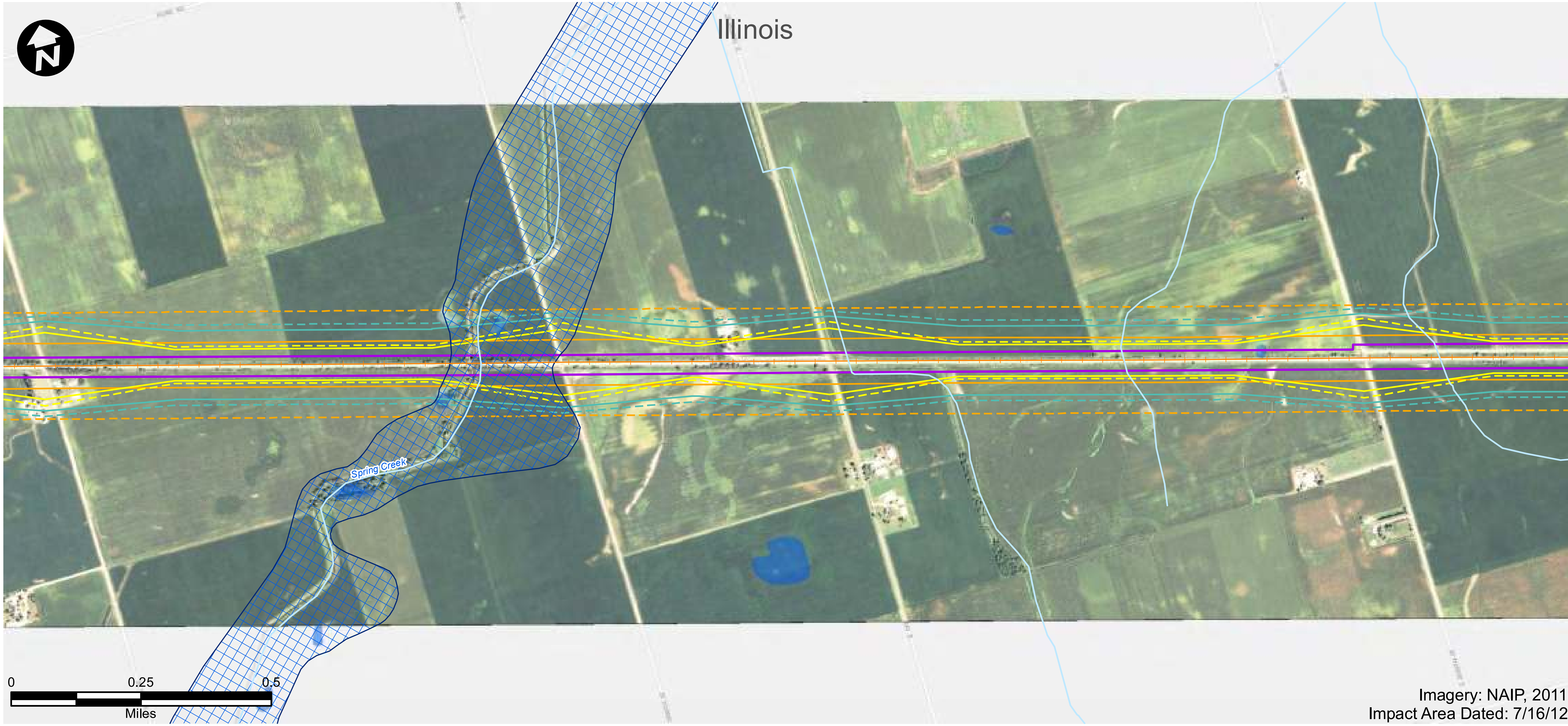

Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
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County Border

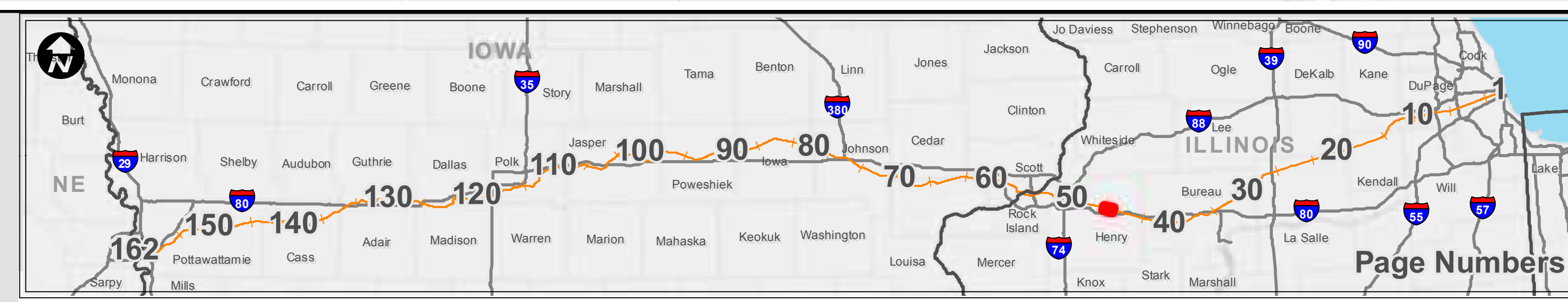

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FIGURE
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Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
Existing Severe Level Noise
Future Severe Level Noise
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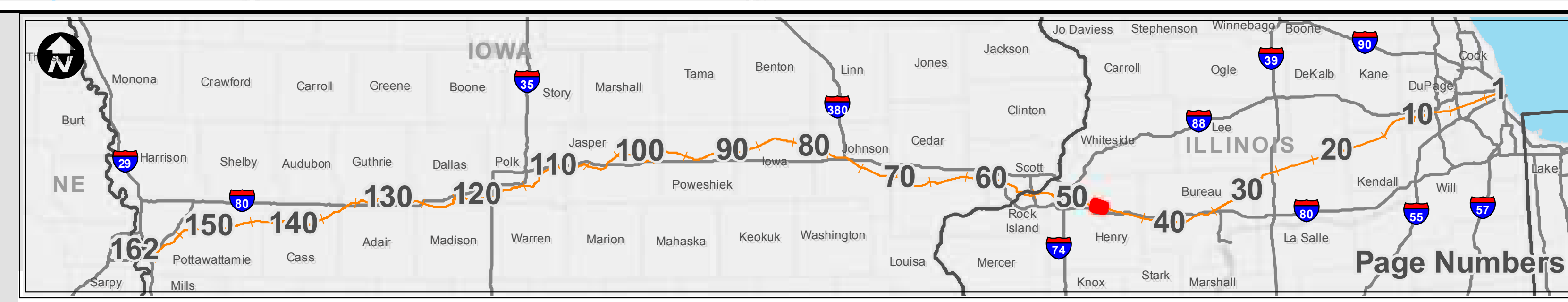
City Boundary
County Border



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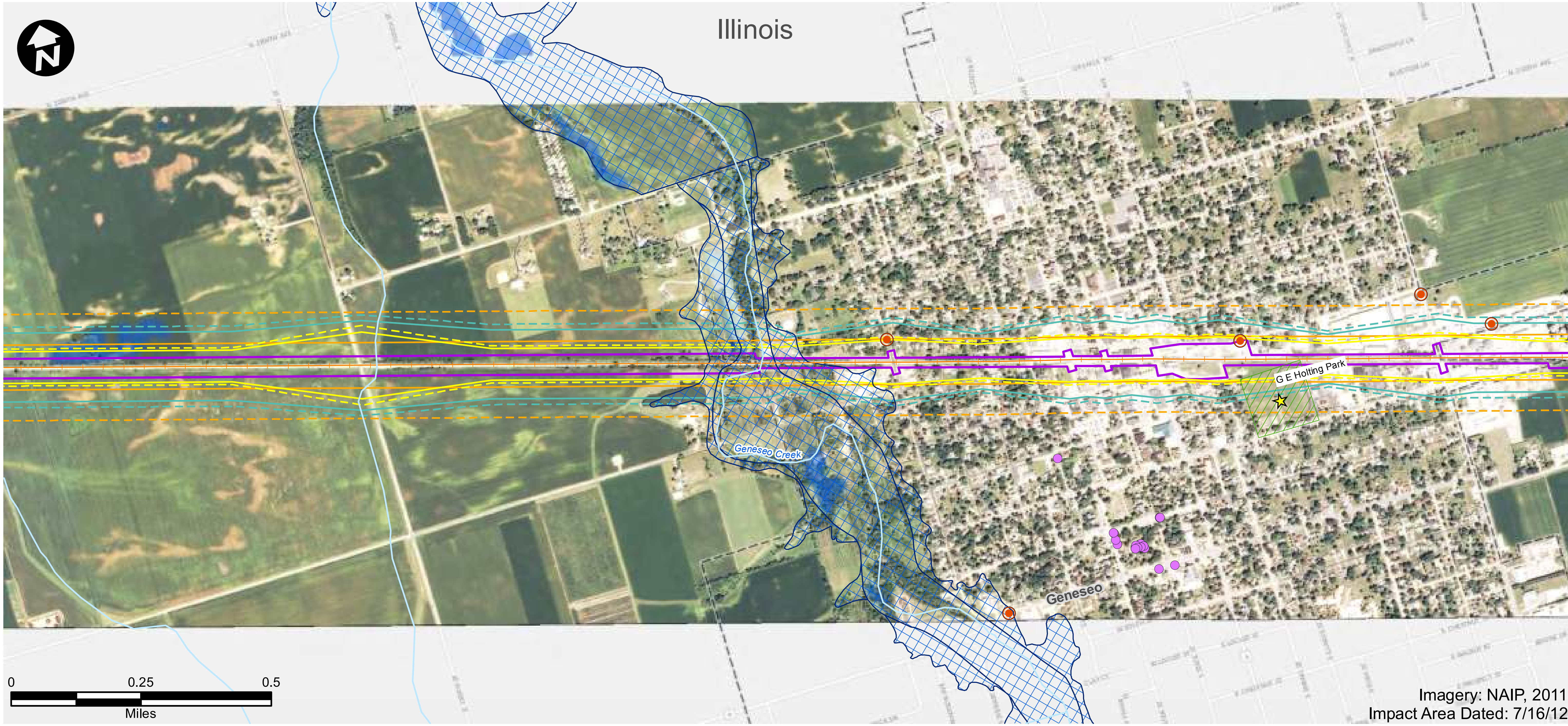

- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
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- Topeka Shiner Critical Habitat
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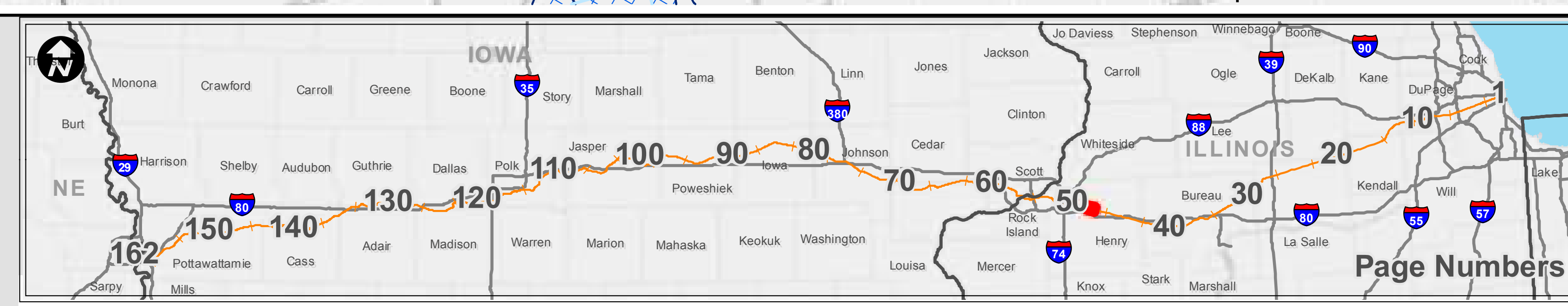
- County Border



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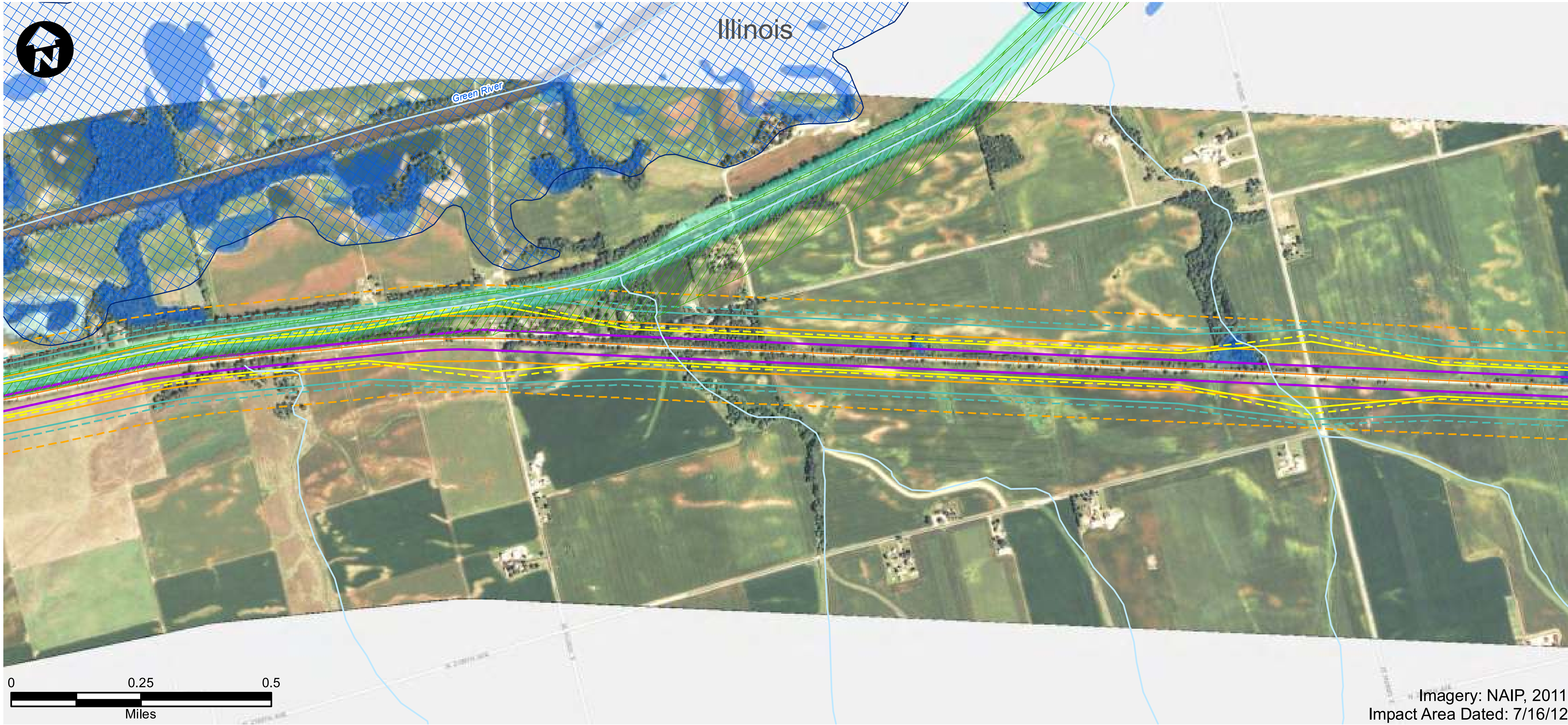

Route Alternative
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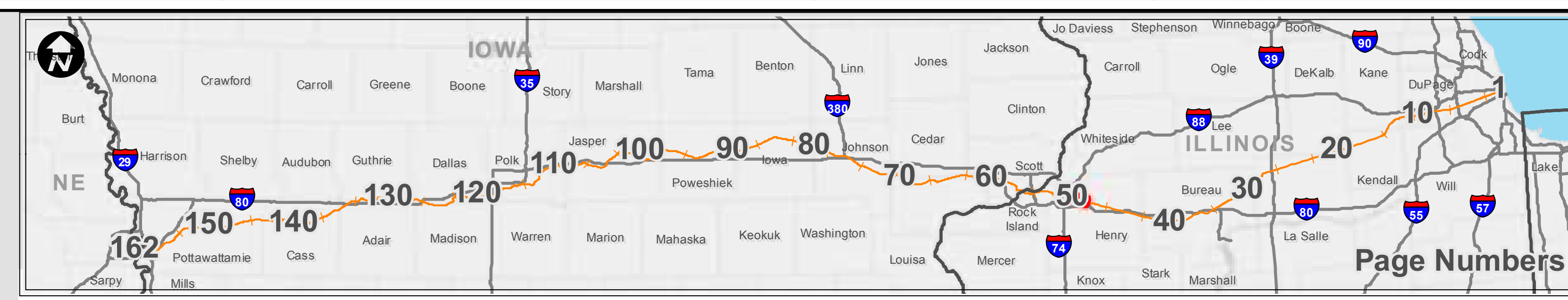

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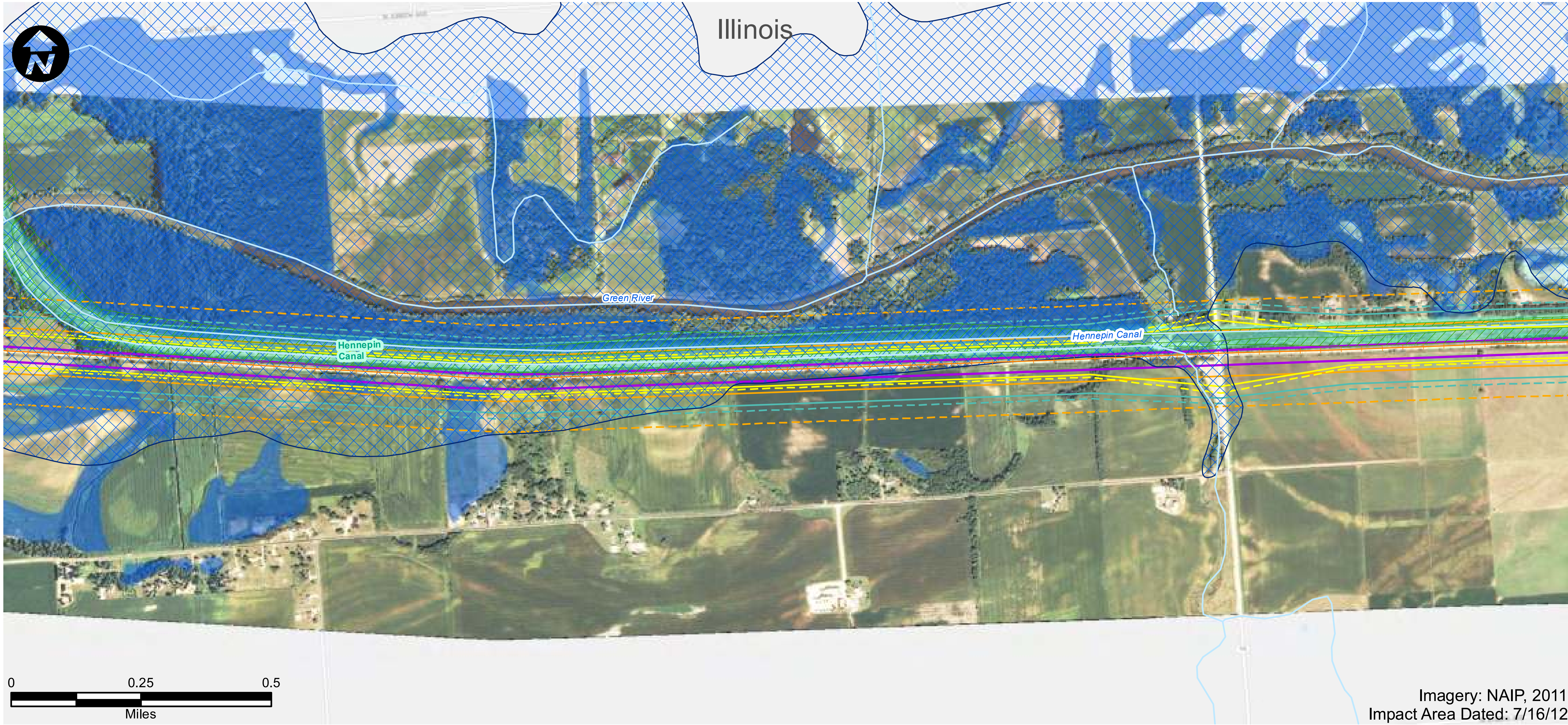

Route Alternative
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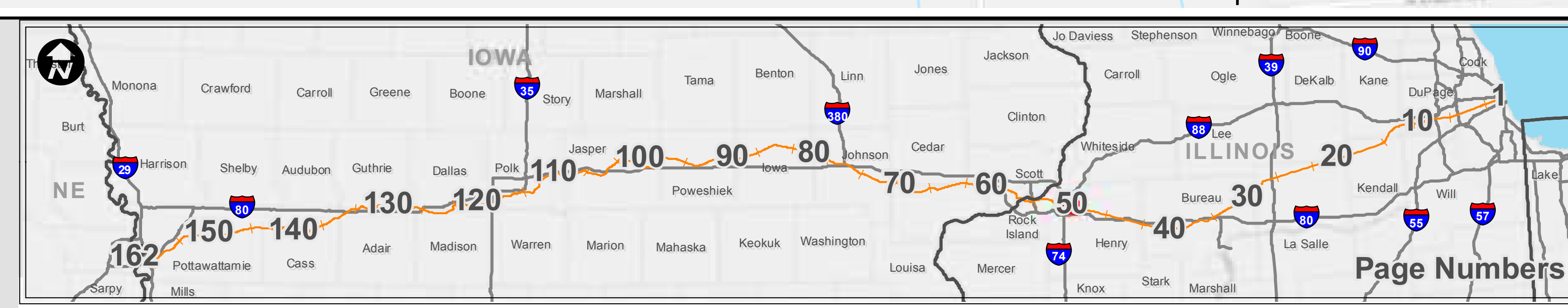

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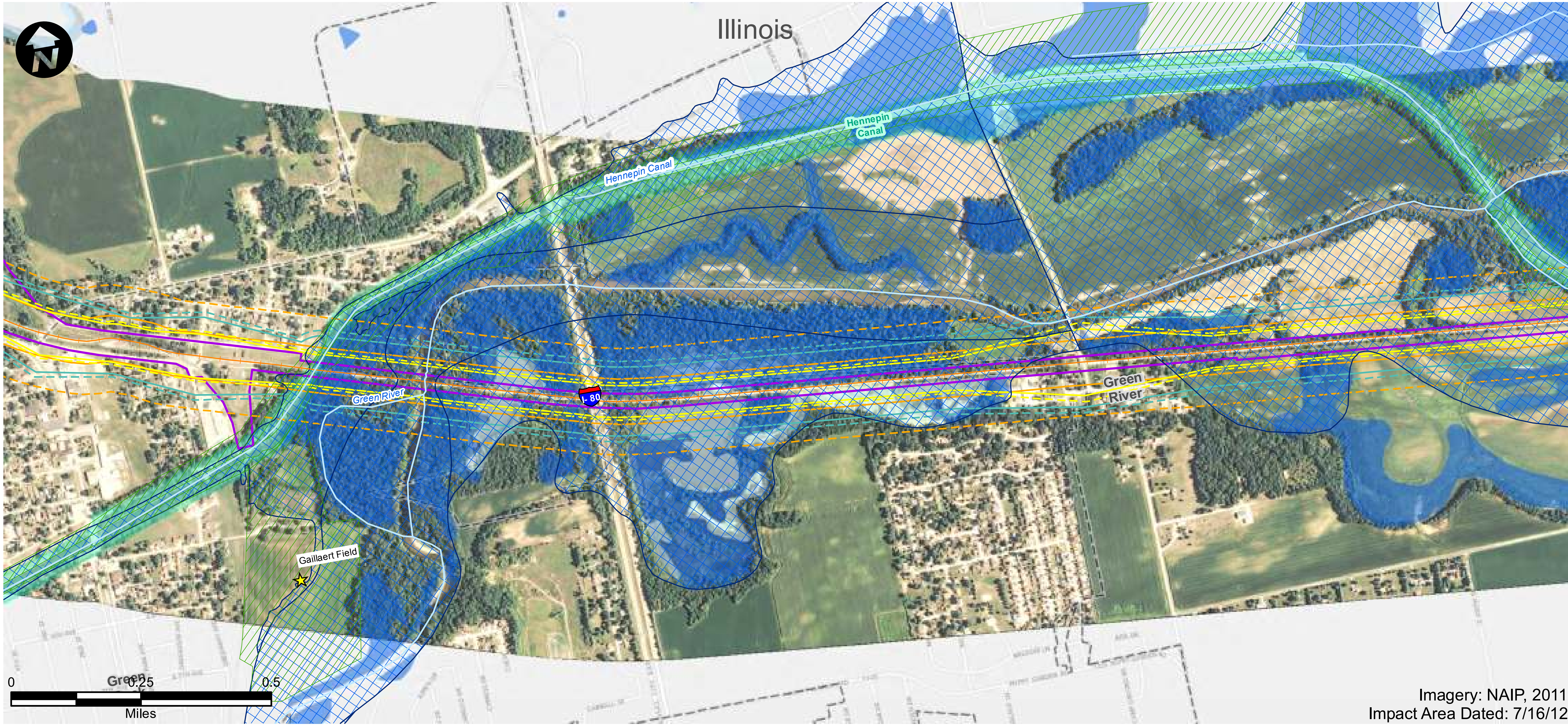

Route Alternative
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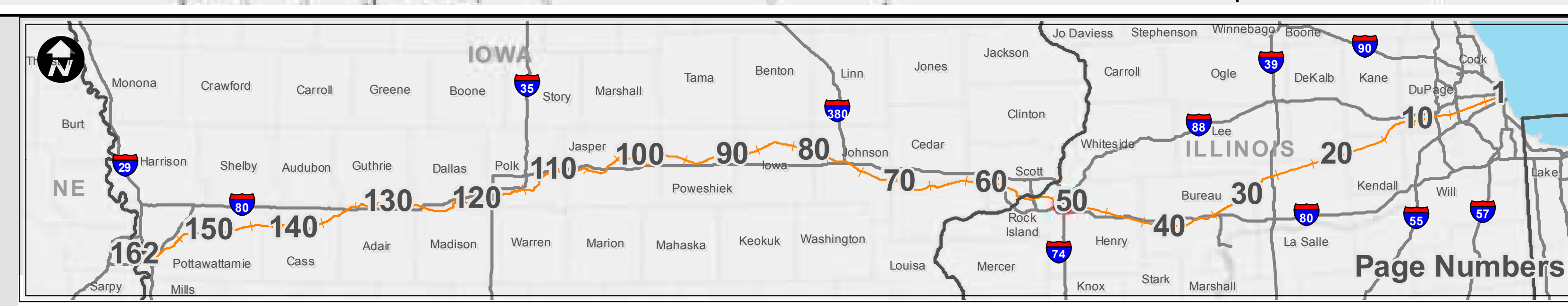

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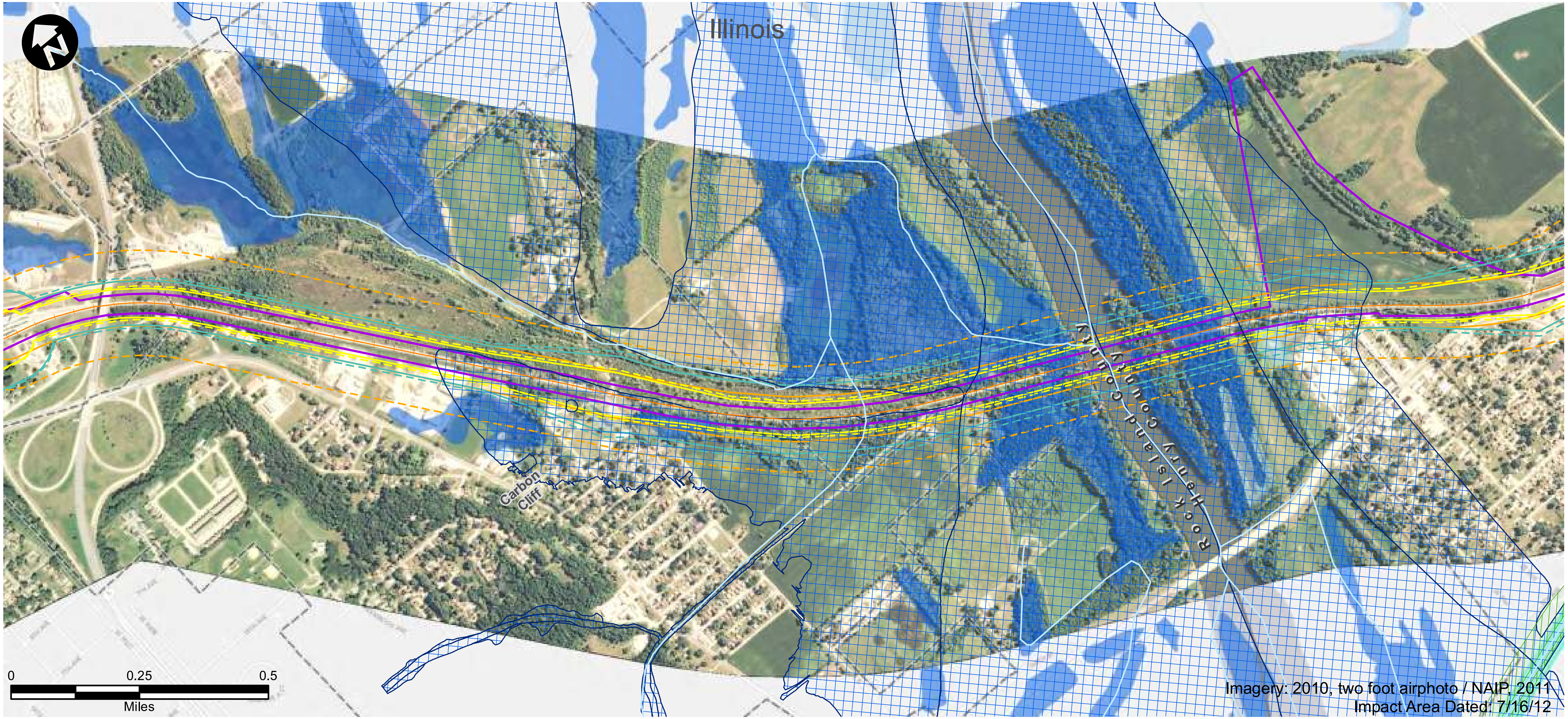

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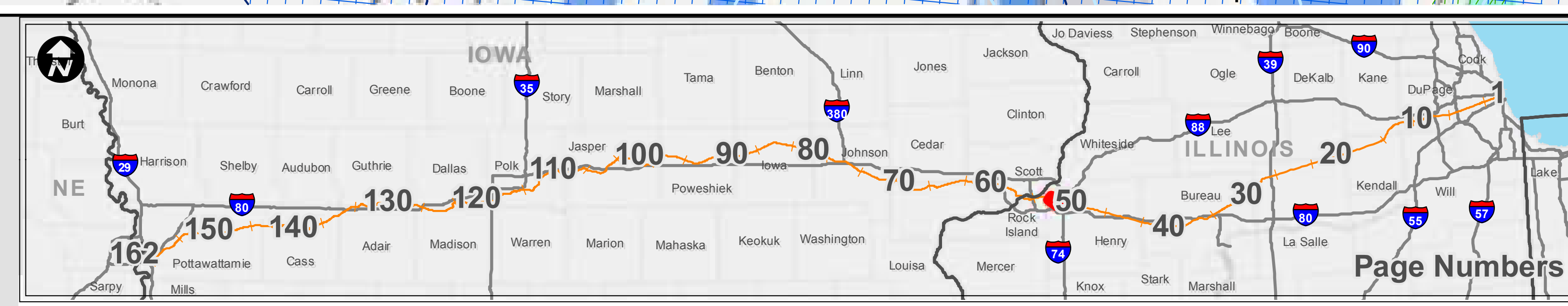

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Route Alternative
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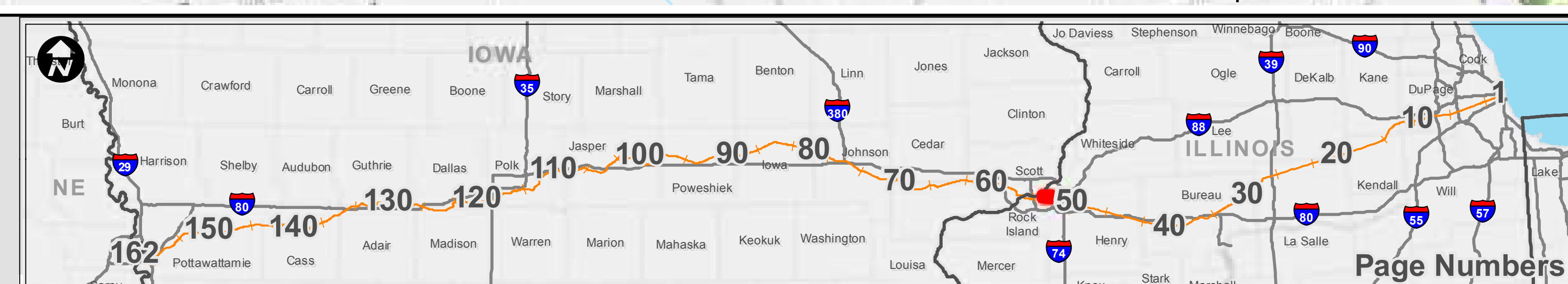

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APPENDIX B

CHAPTER 3 FIGURES

PART 2 OF 3

ROCK ISLAND, ILLINOIS TO COLFAX, IOWA

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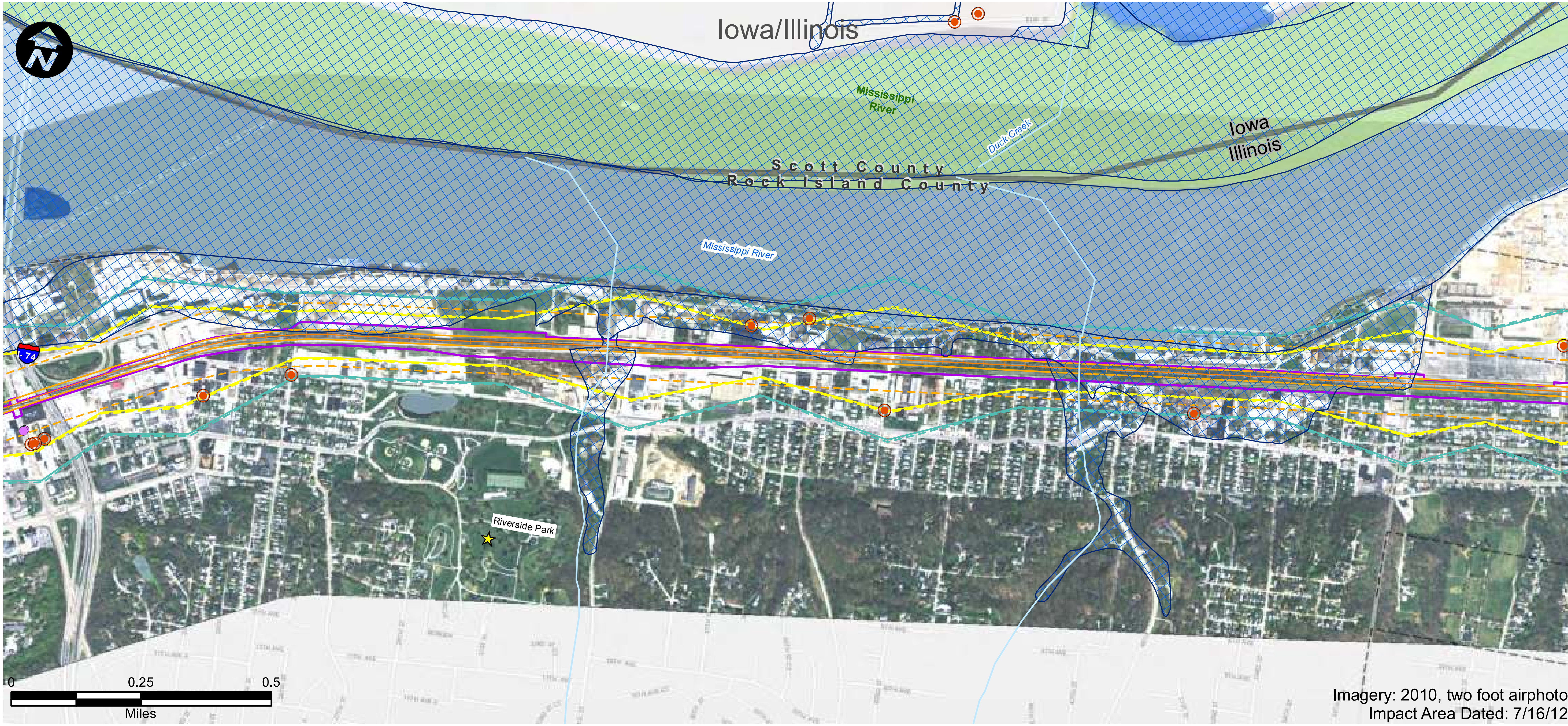

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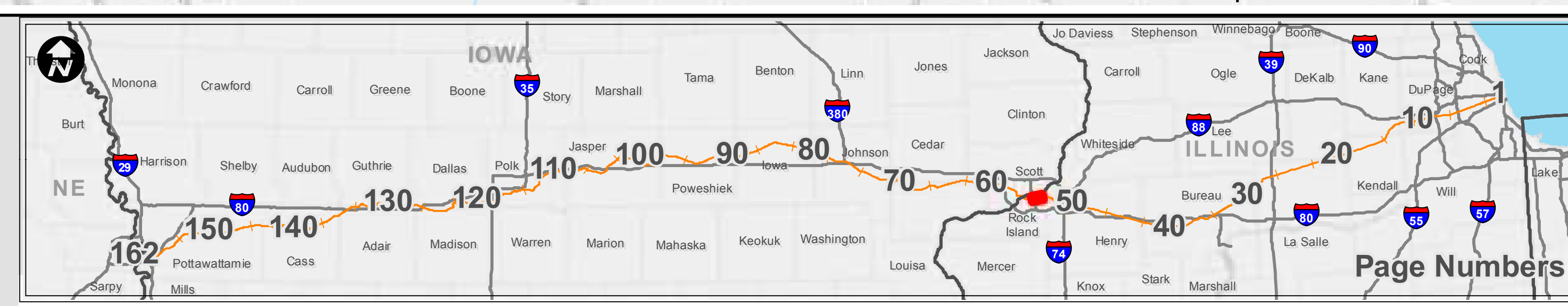

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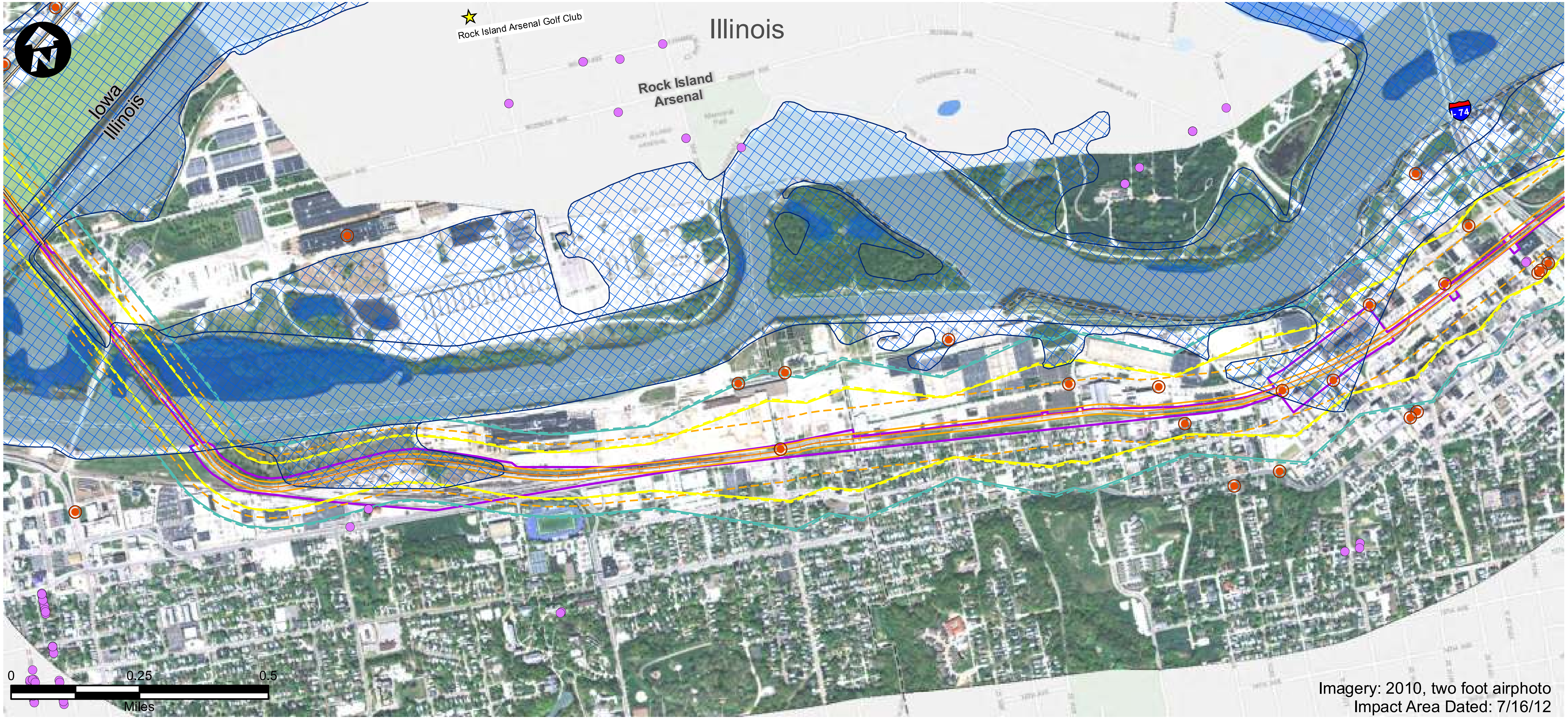

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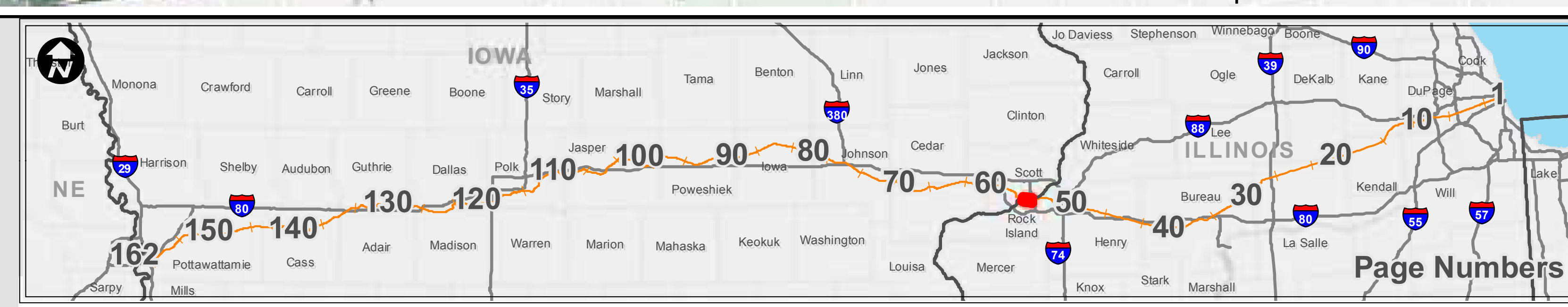

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Route Alternative
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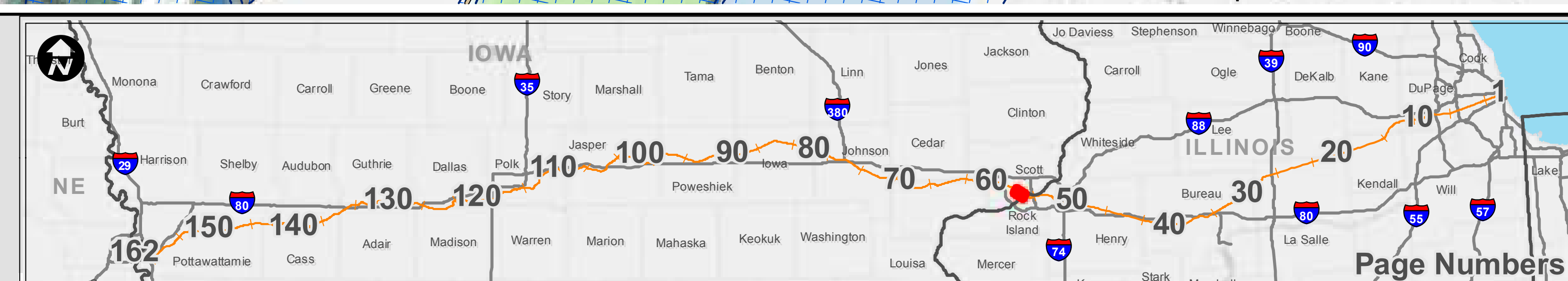

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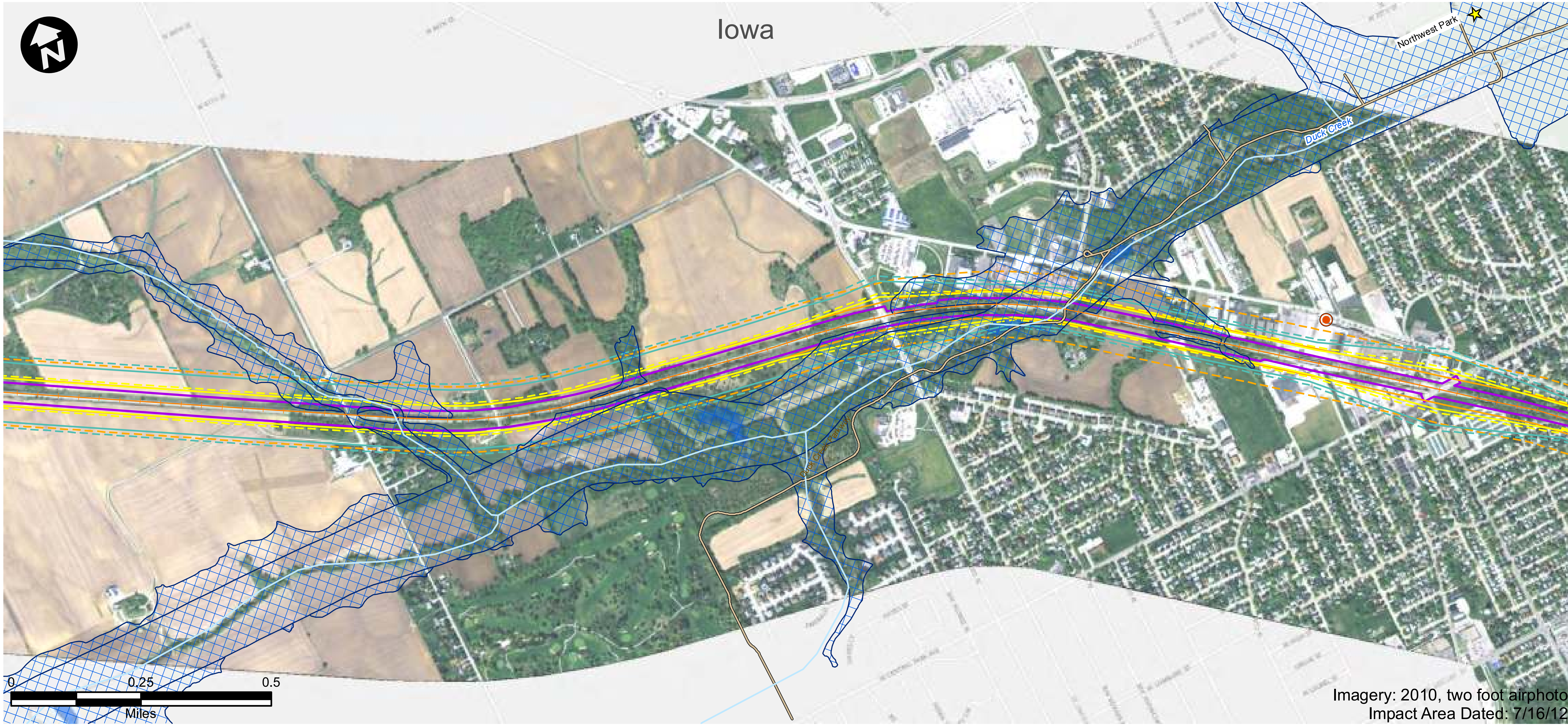

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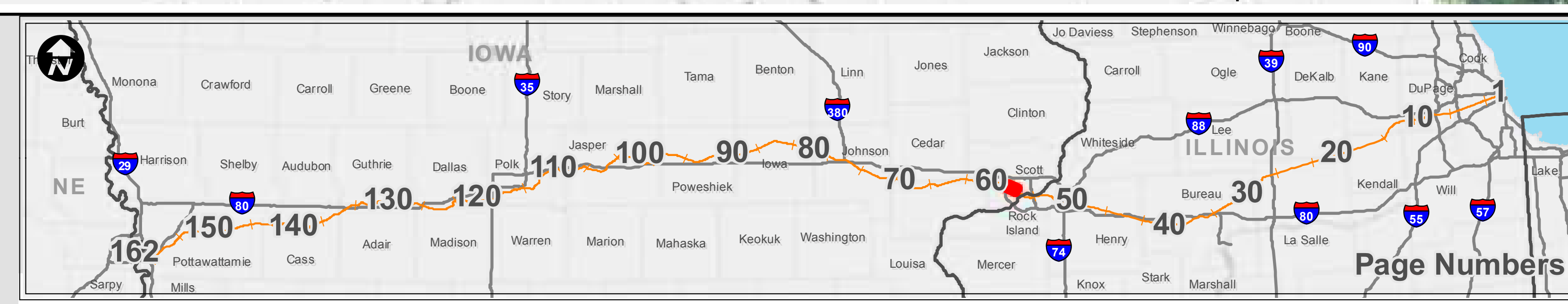

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- Route Alternative
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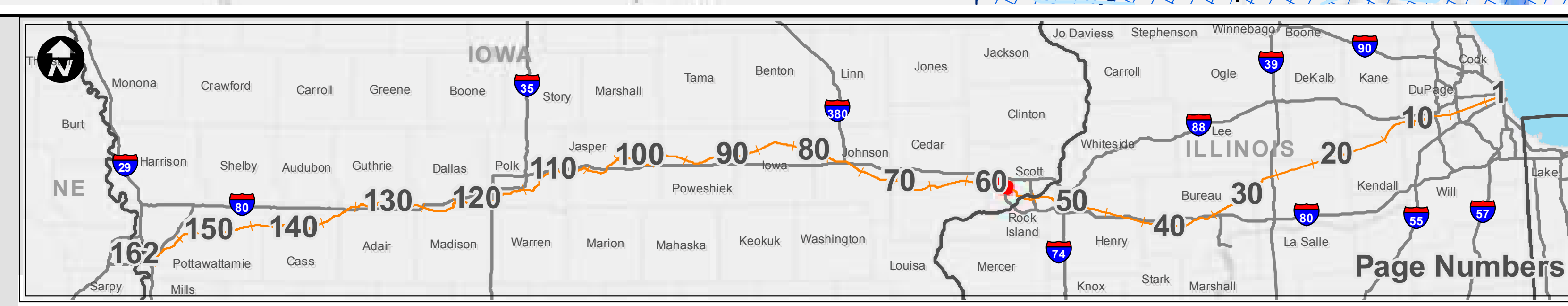

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Route Alternative
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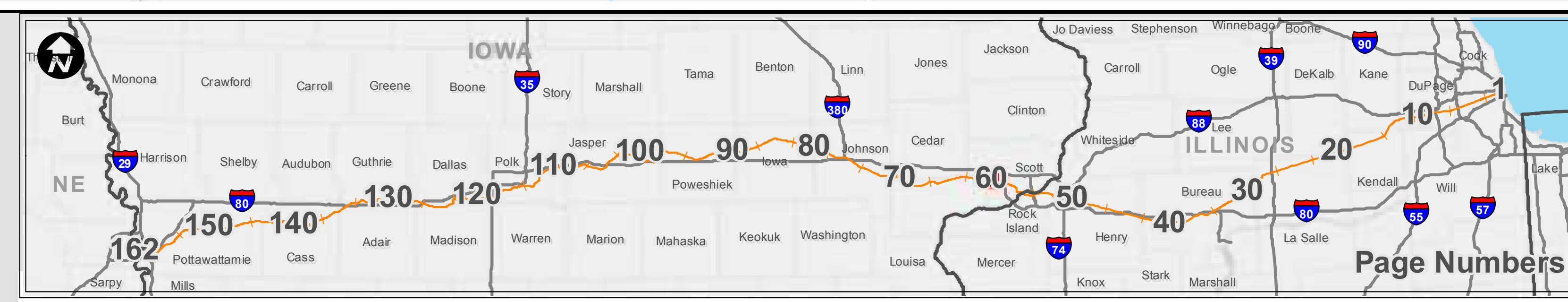

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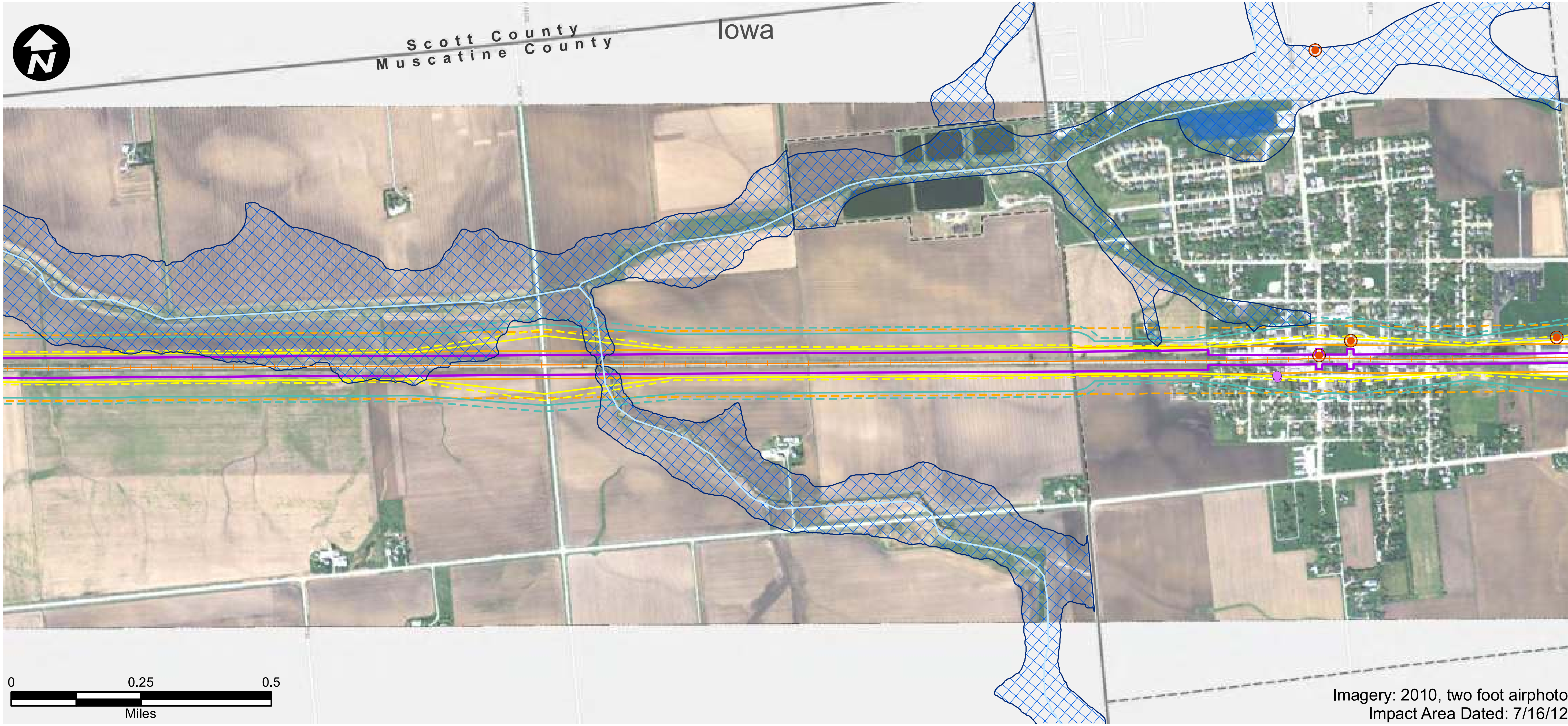

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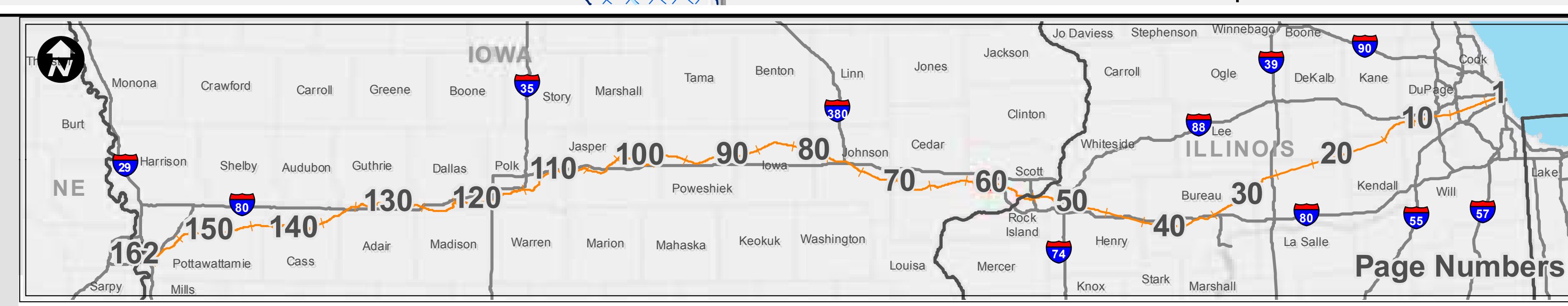

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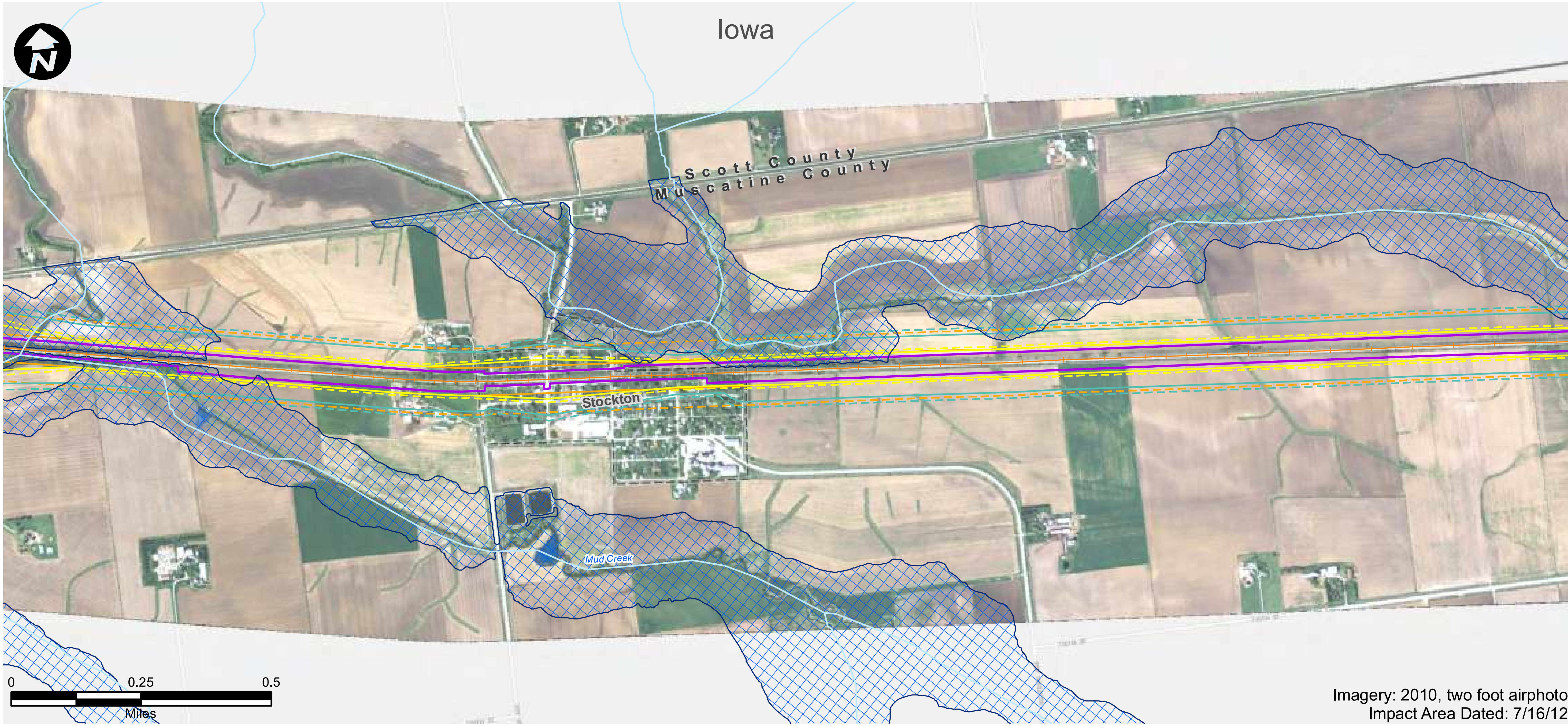

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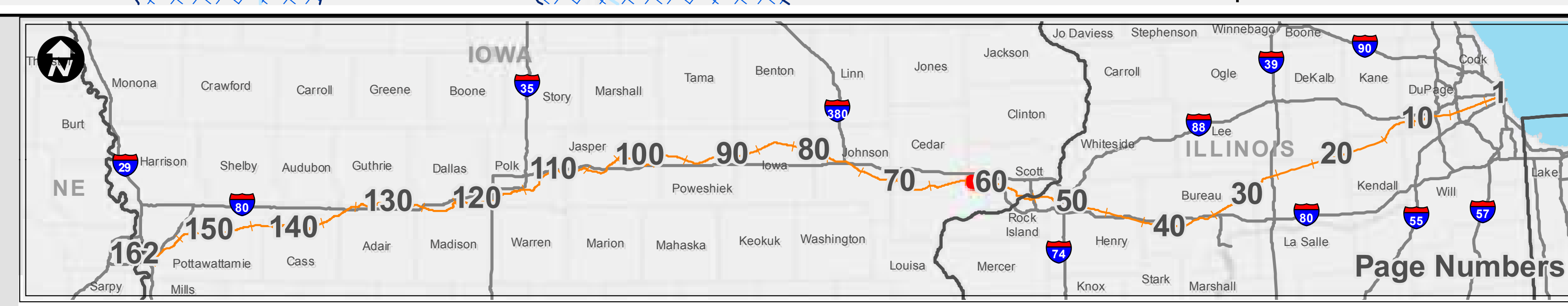

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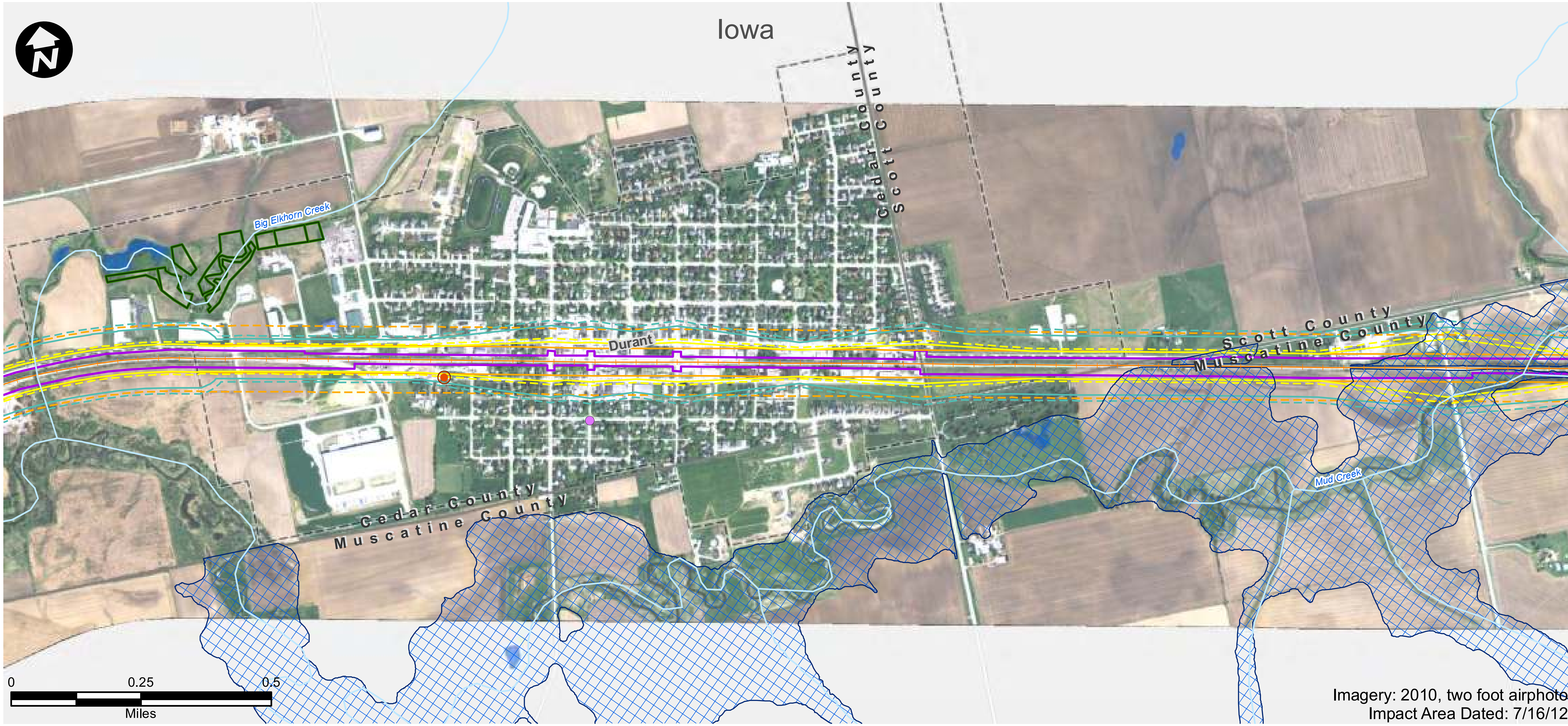

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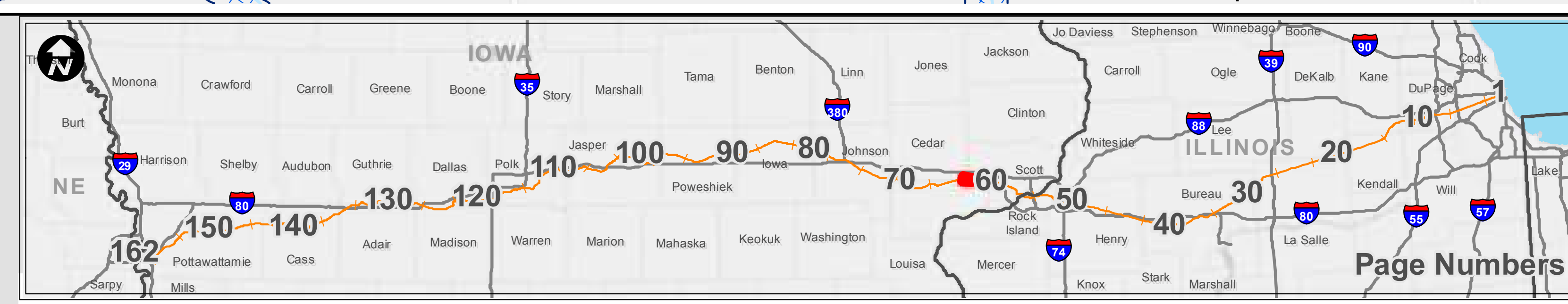

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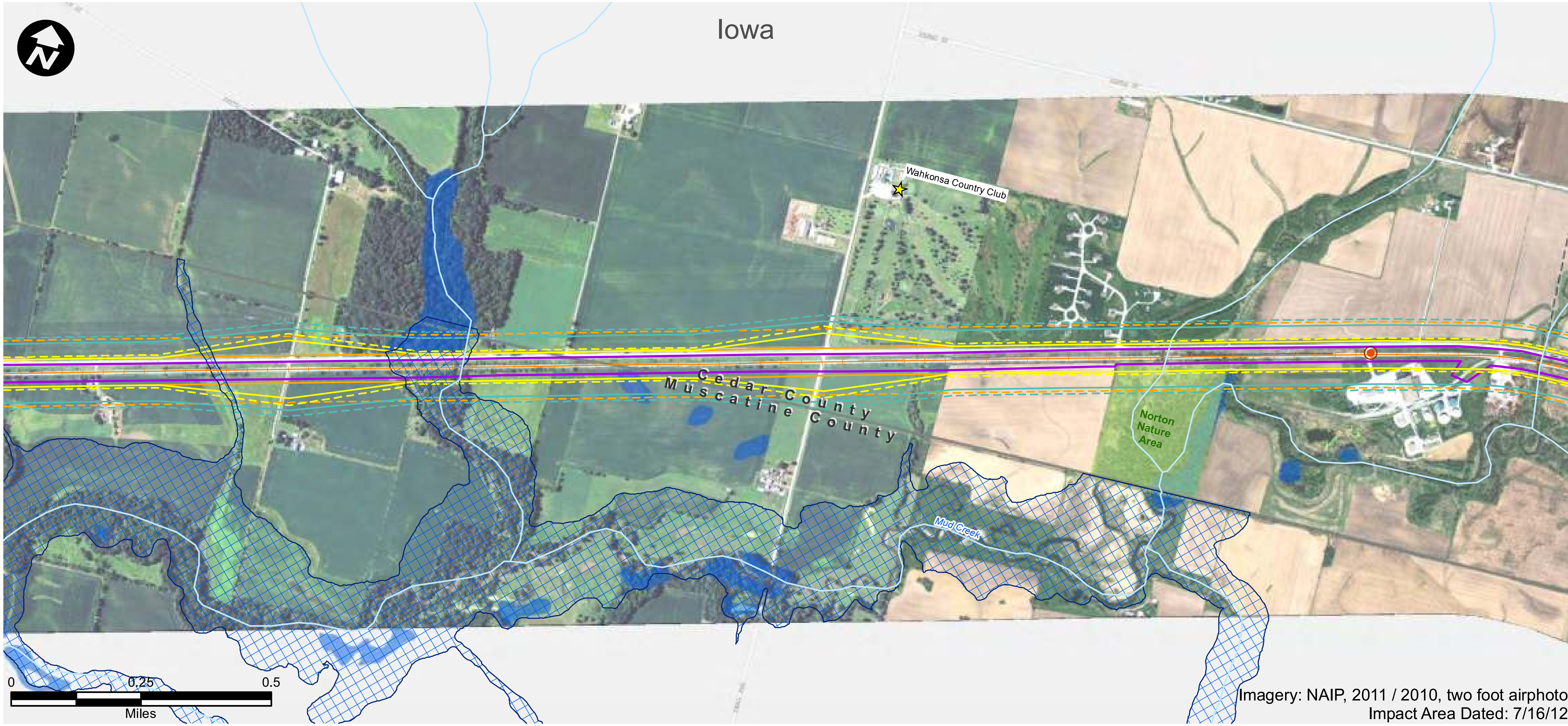

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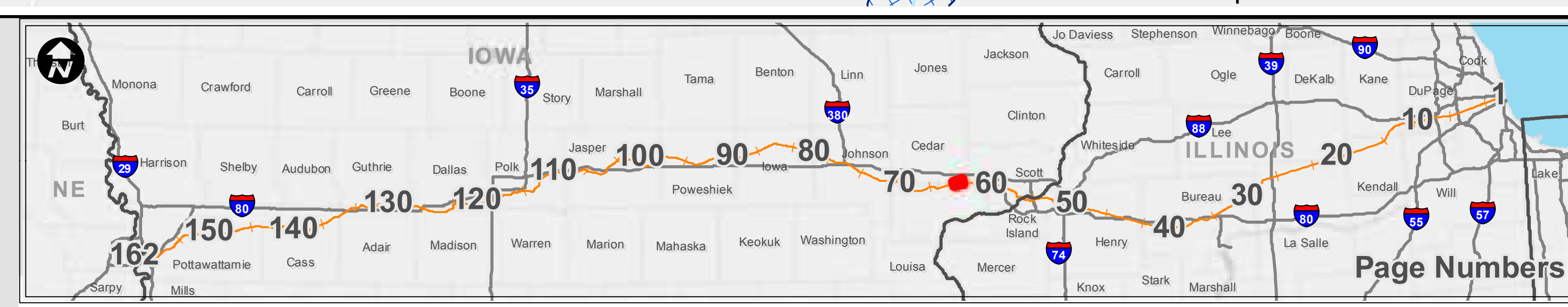

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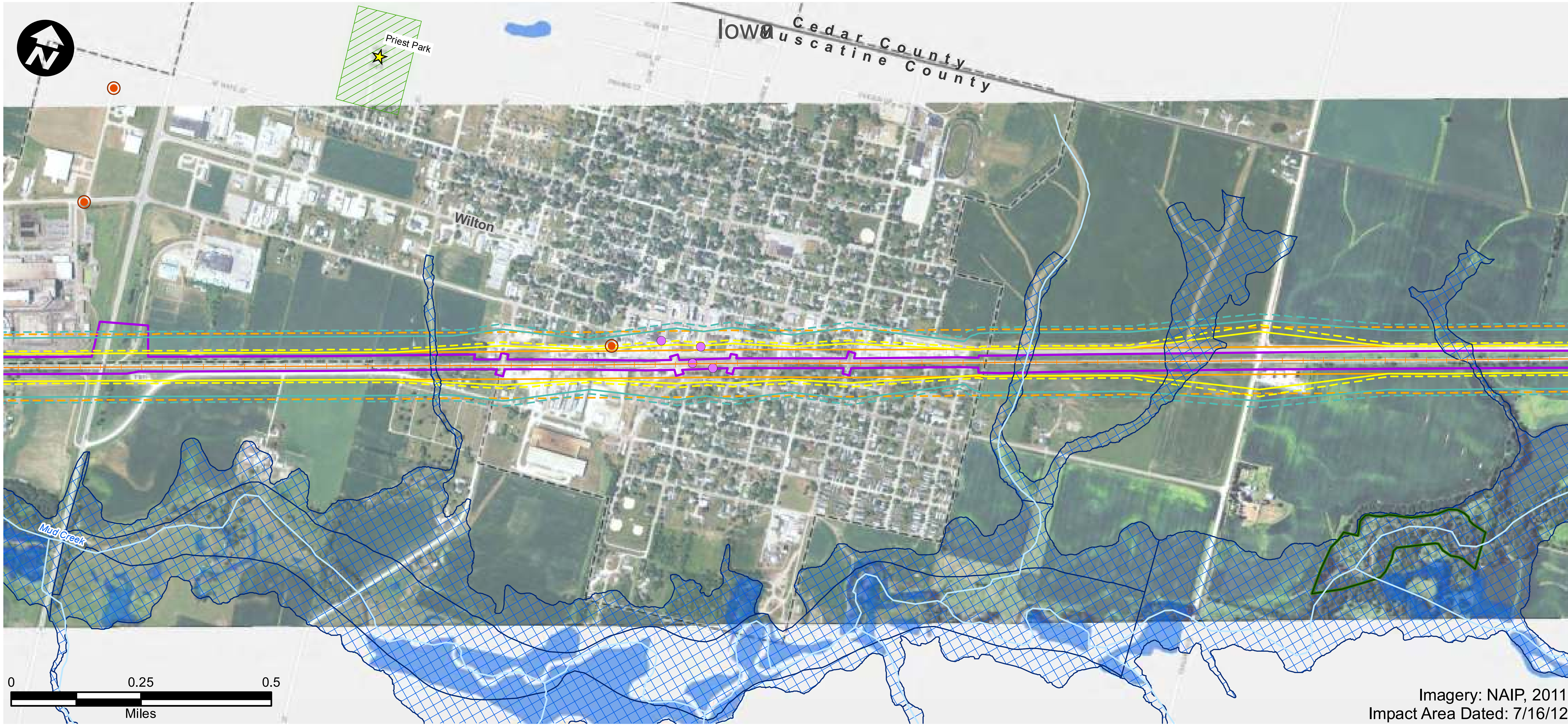

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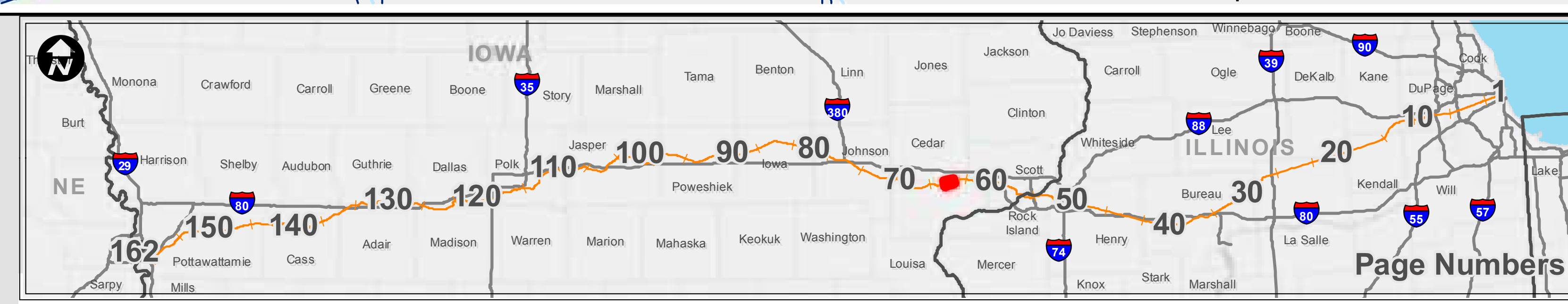

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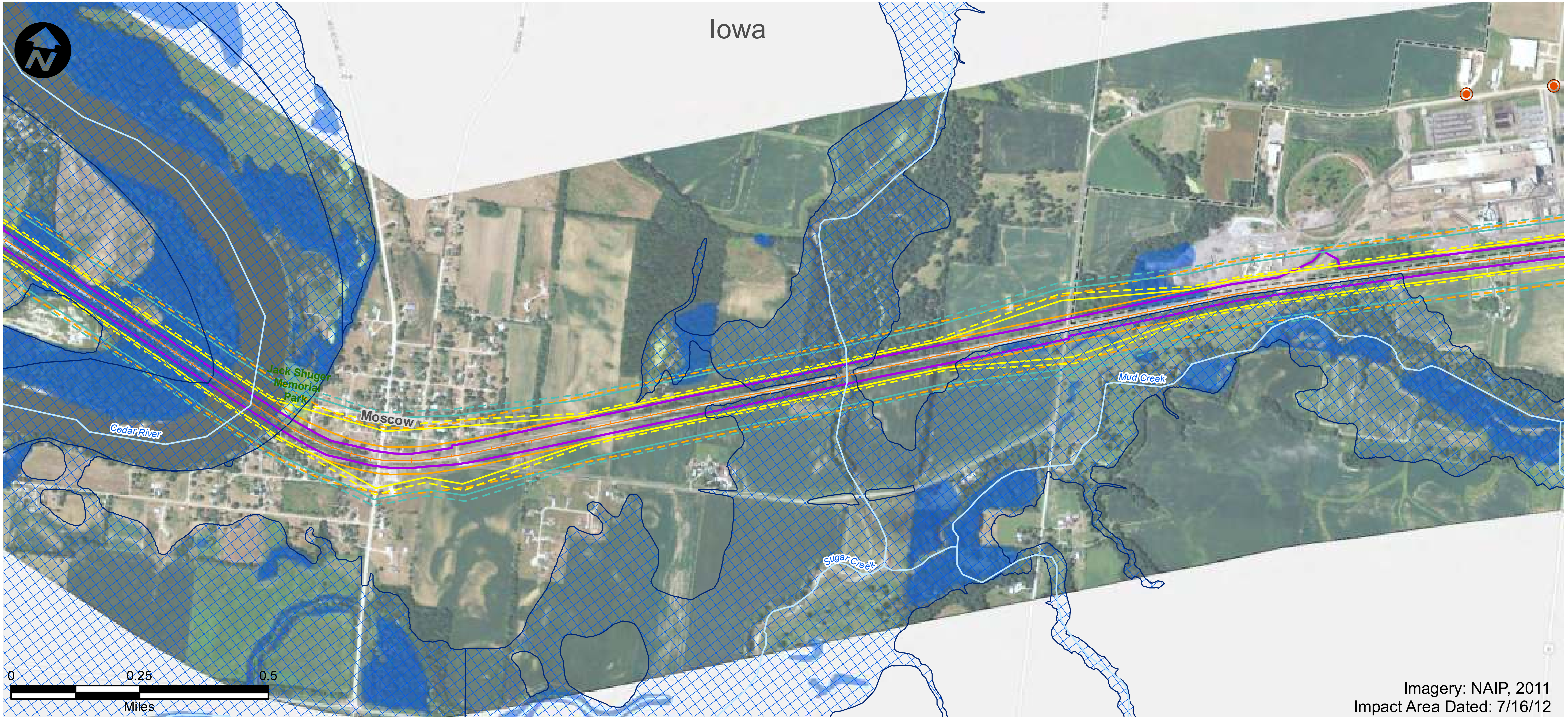

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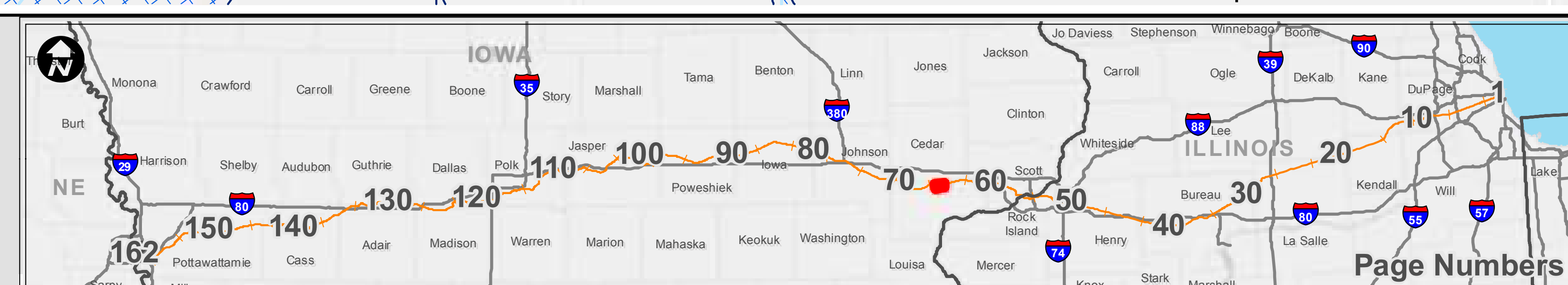

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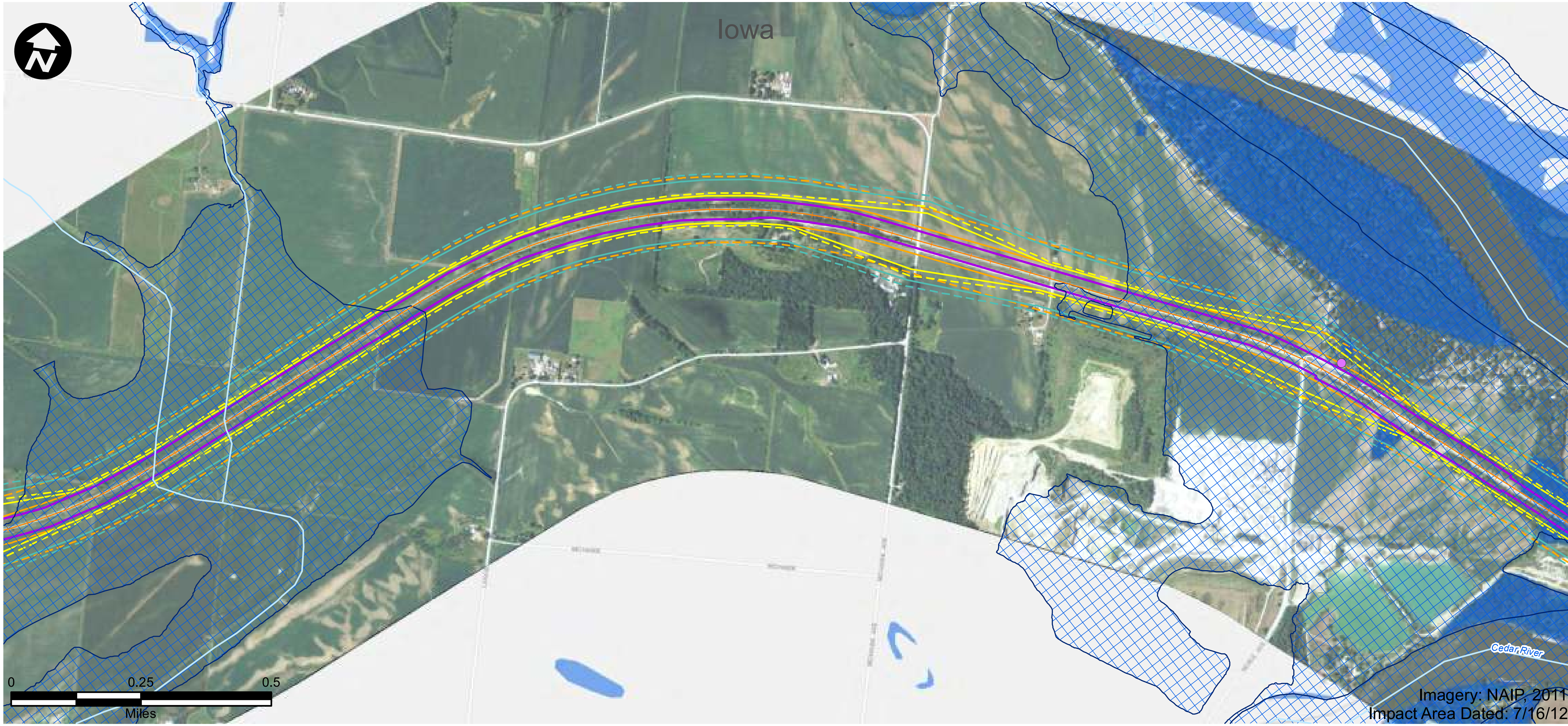

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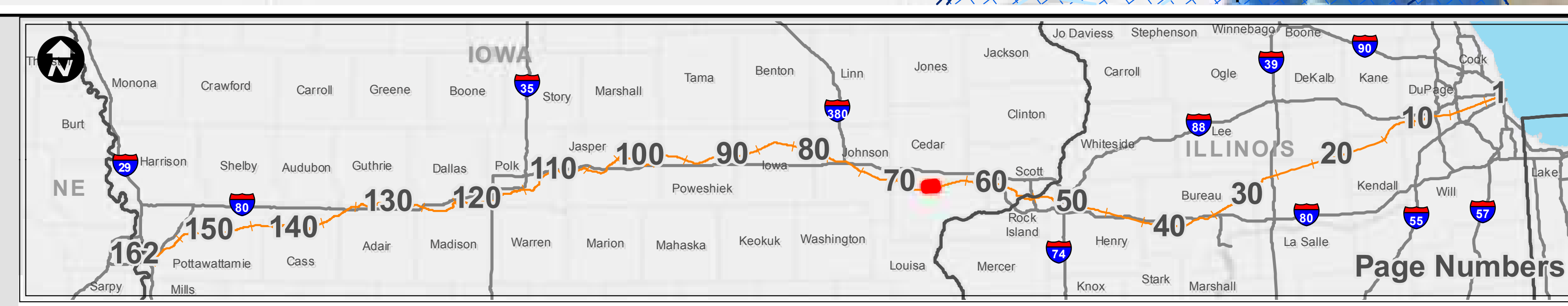

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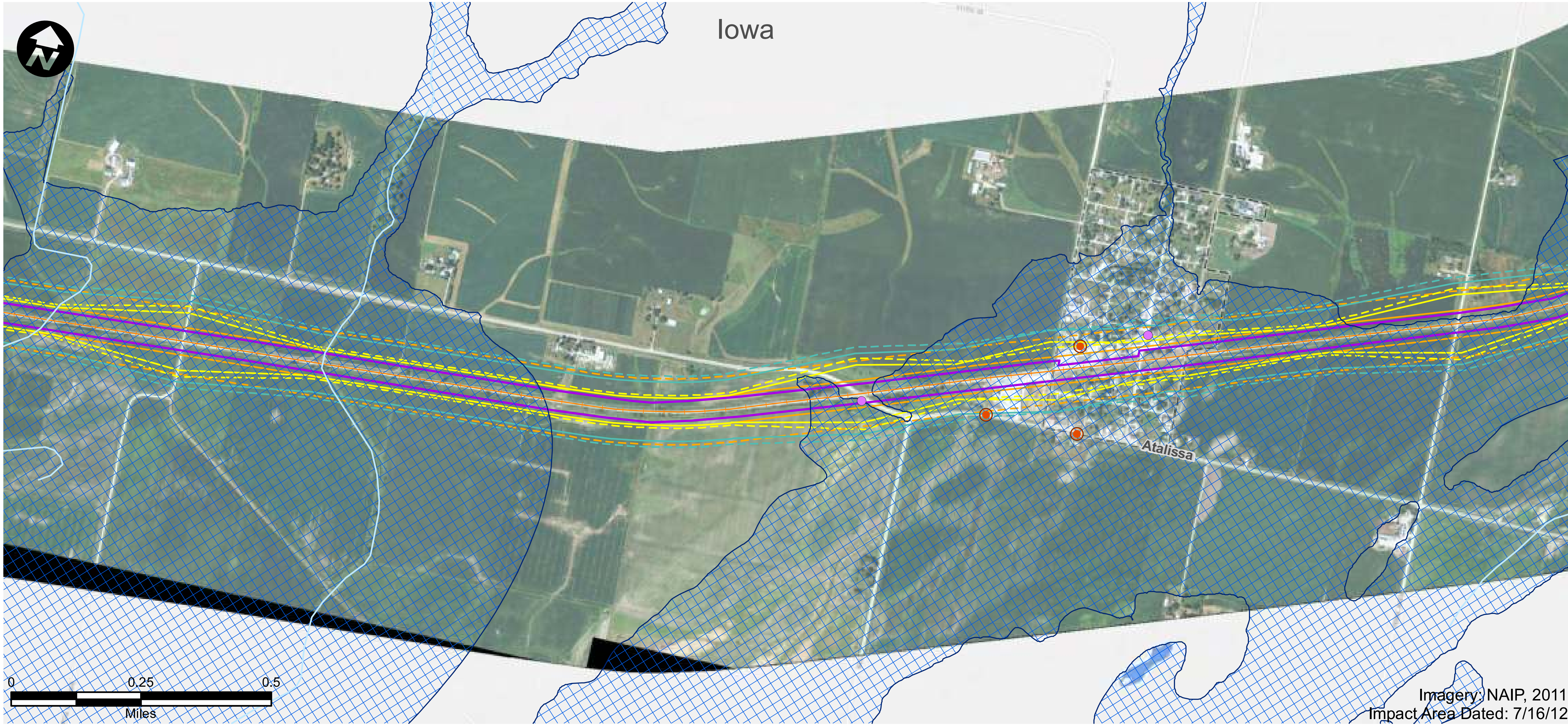

Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
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Recreation Area
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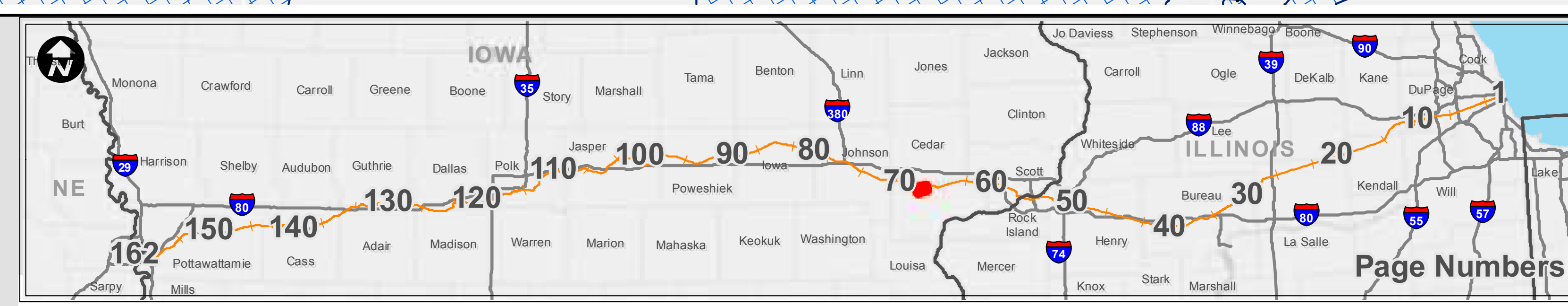

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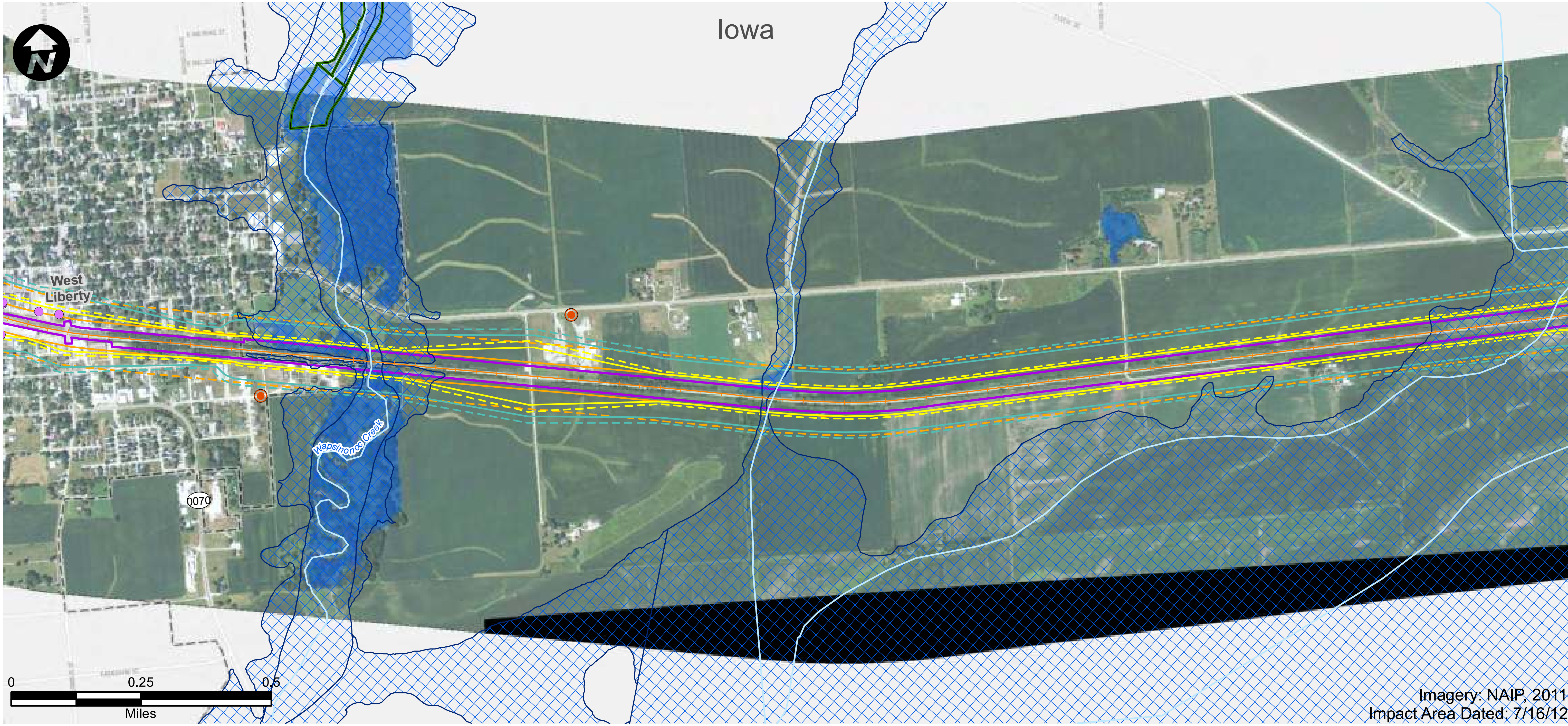

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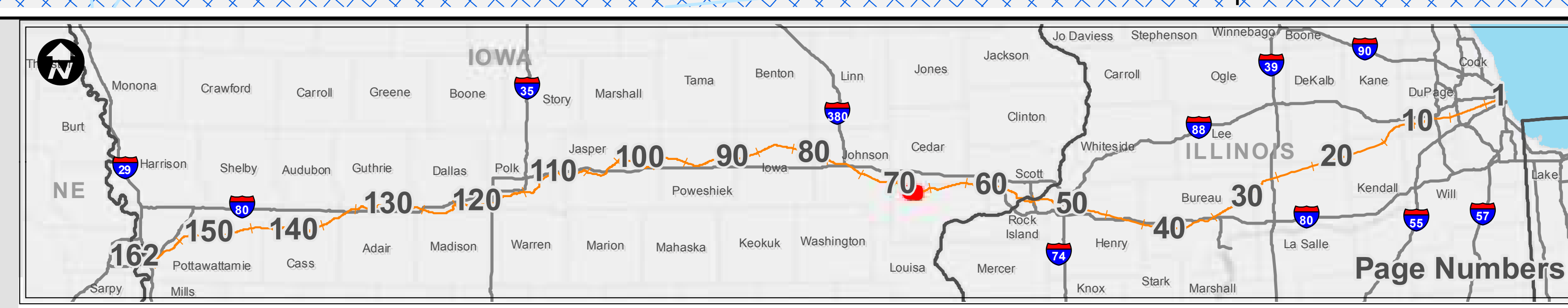

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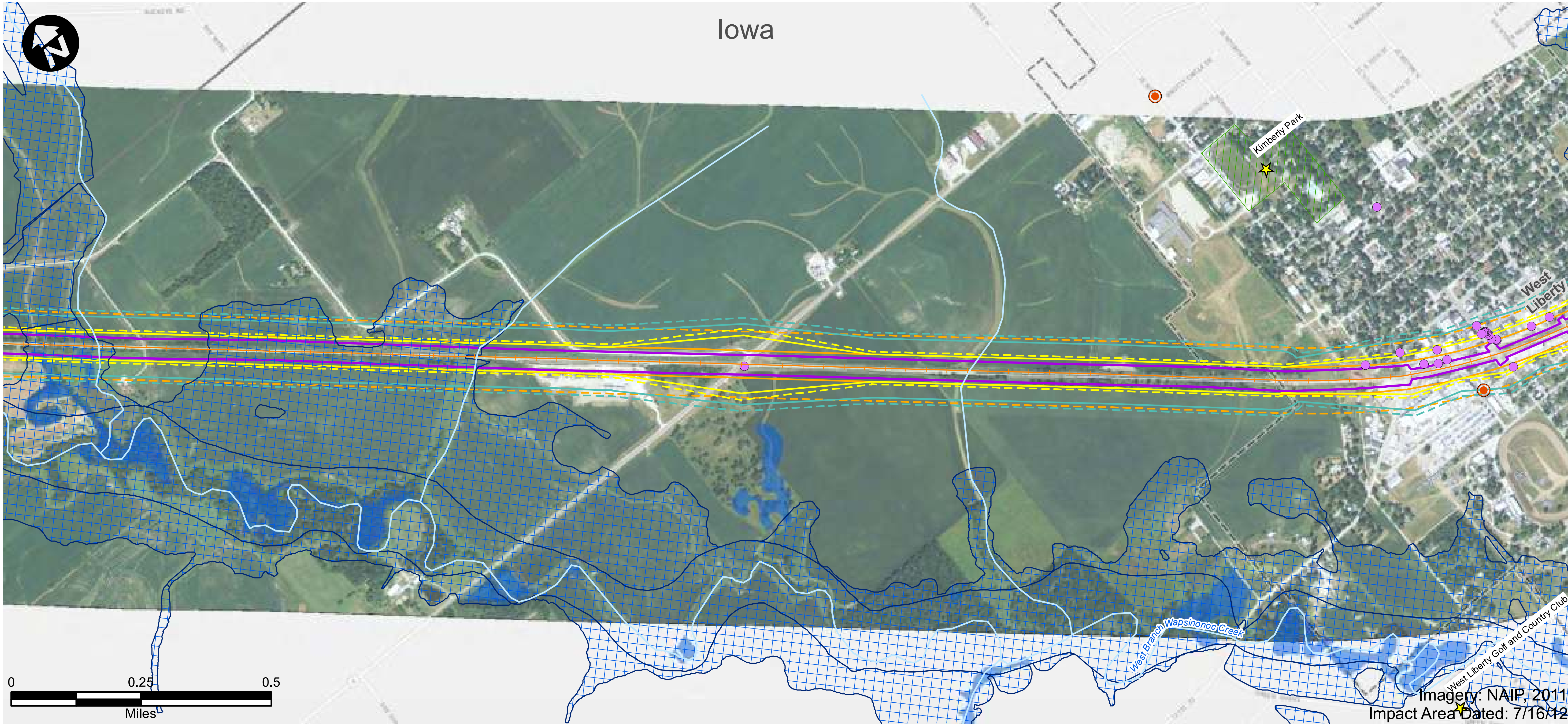

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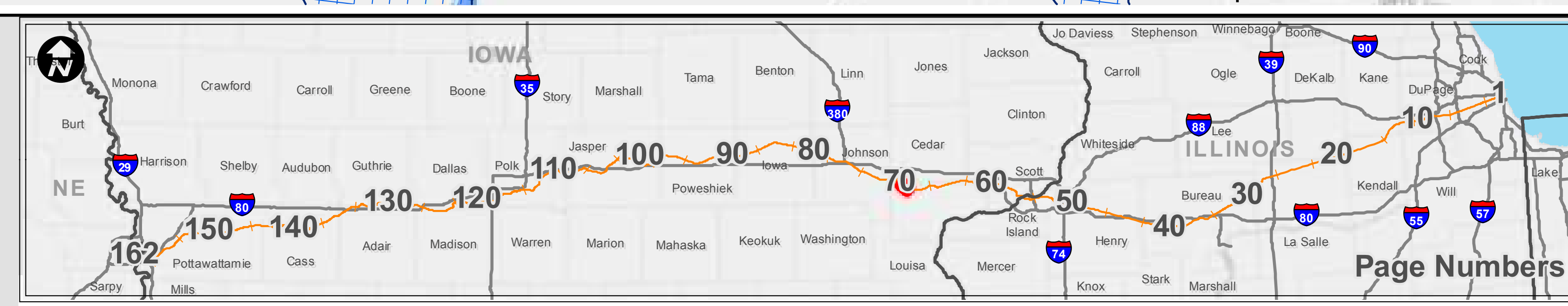

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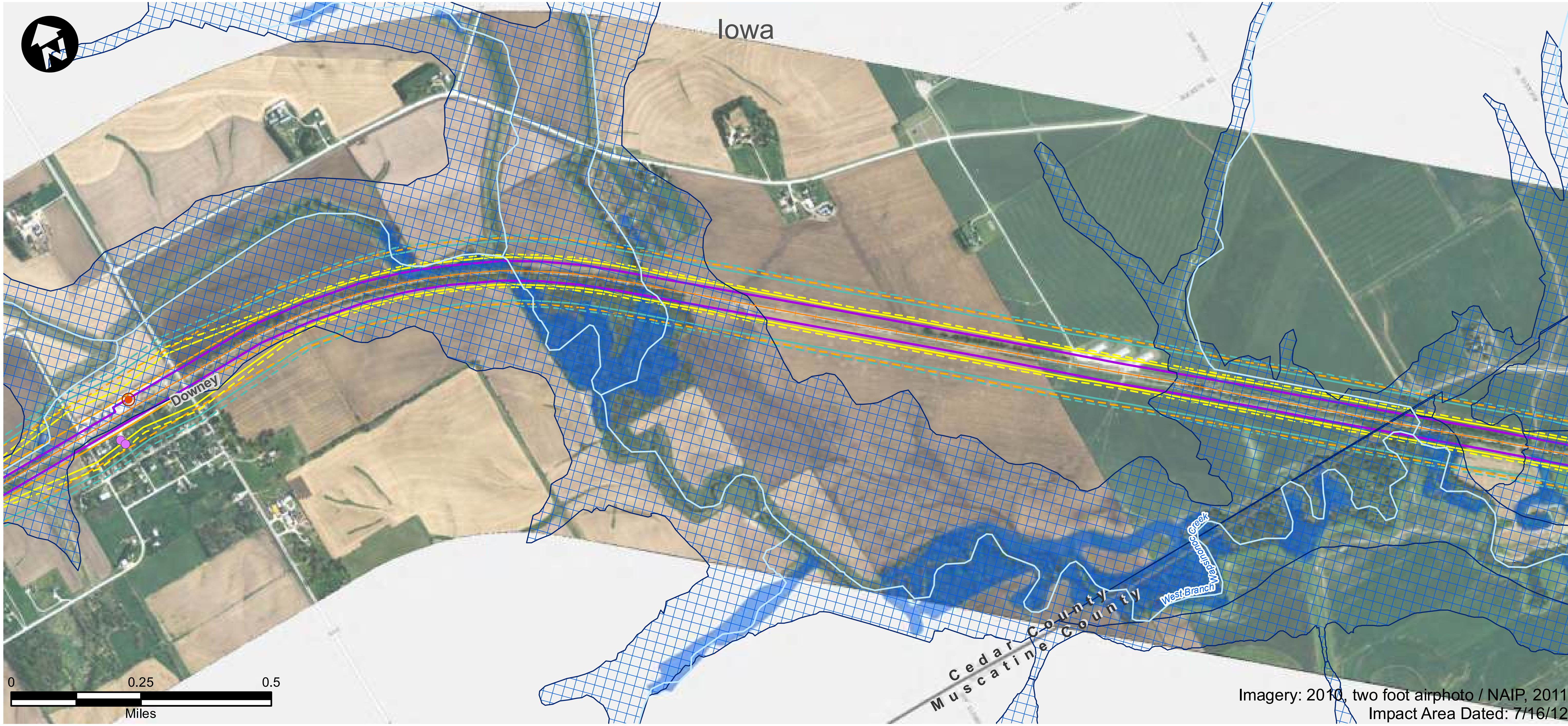

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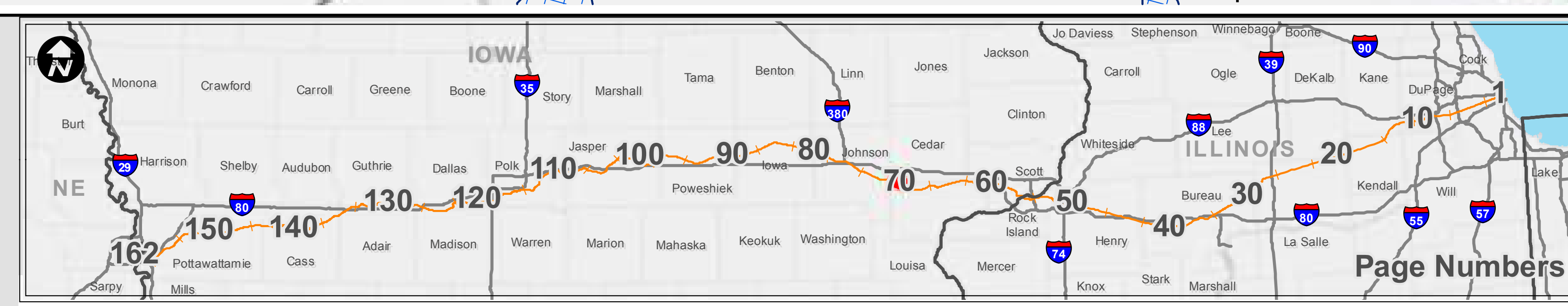

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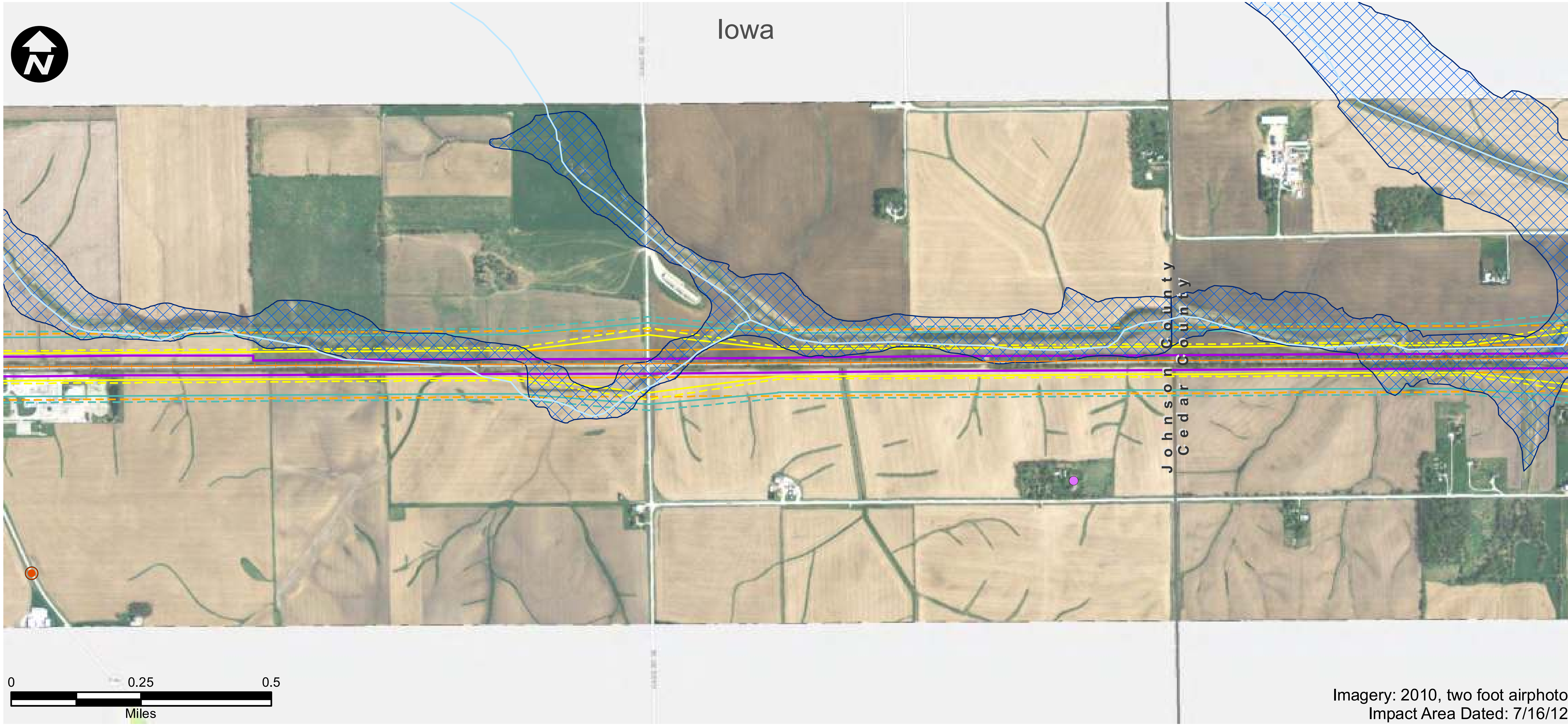

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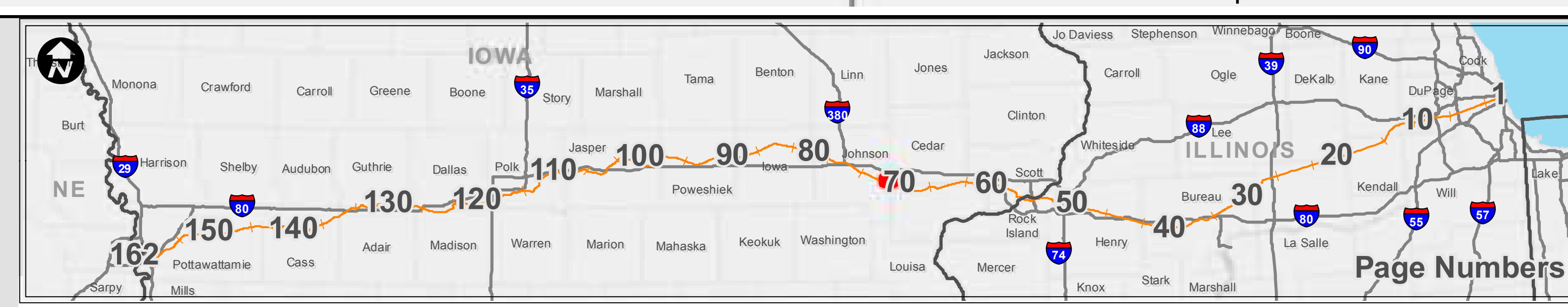

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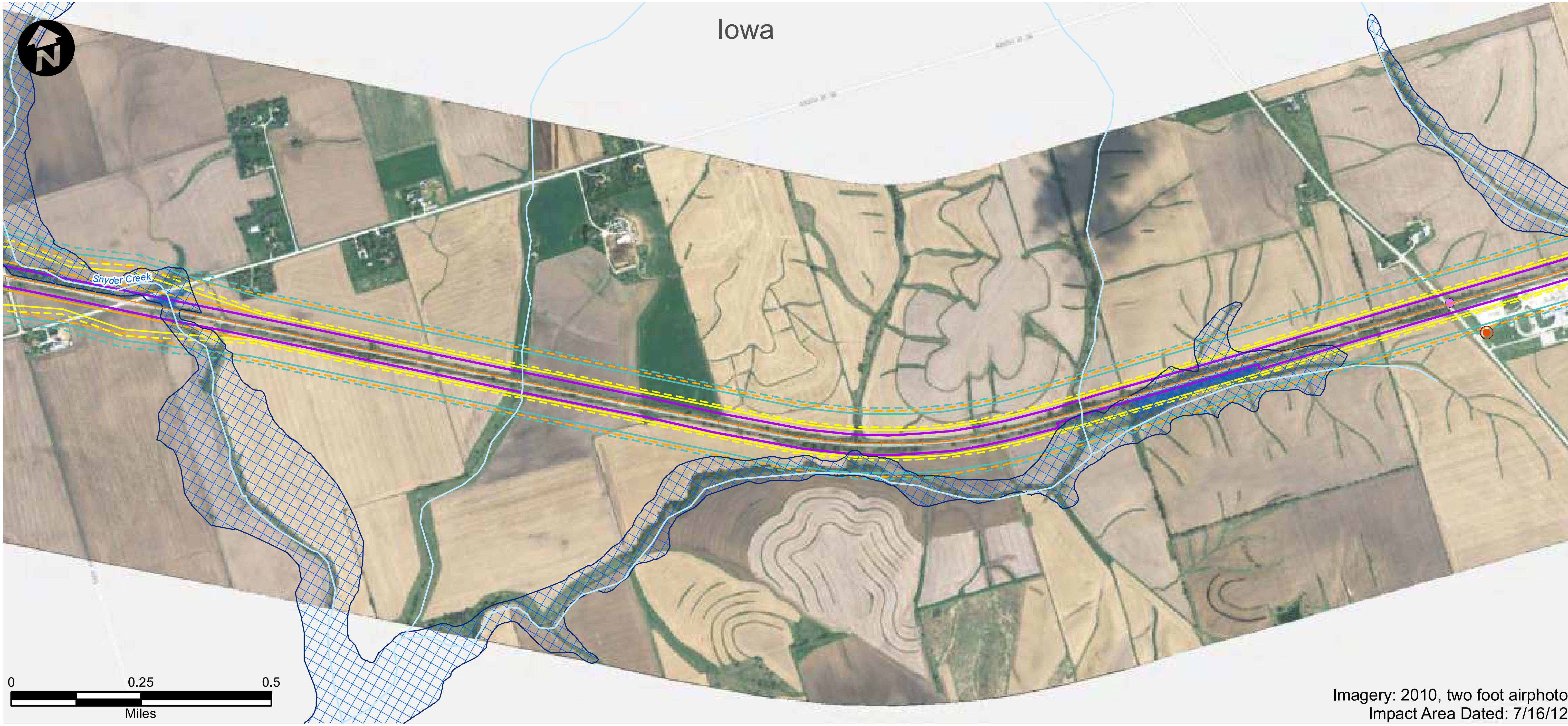

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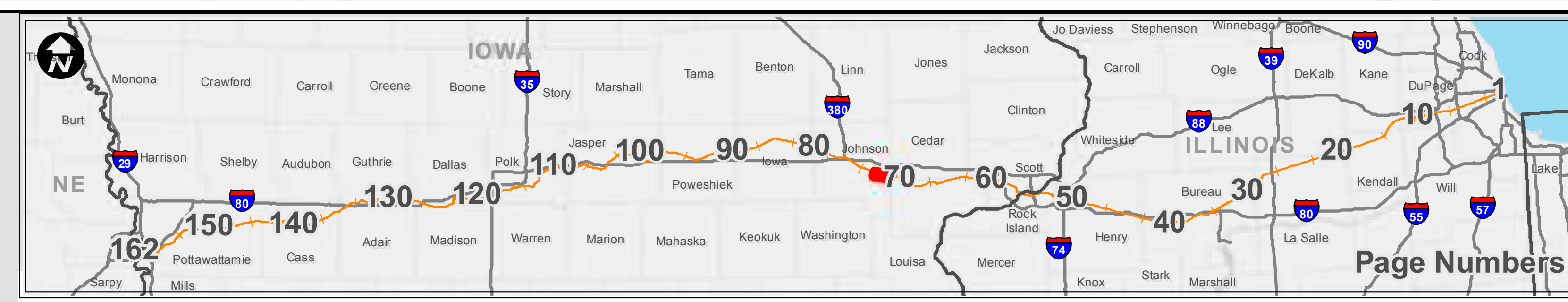

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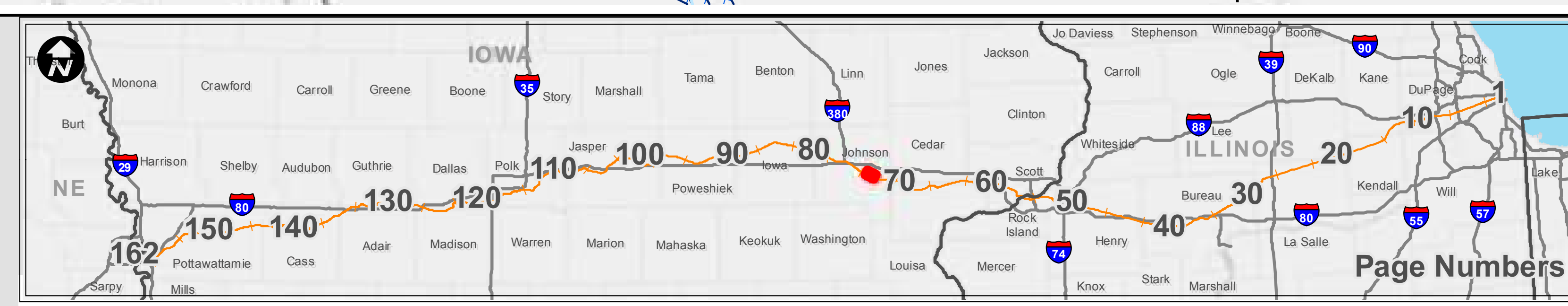

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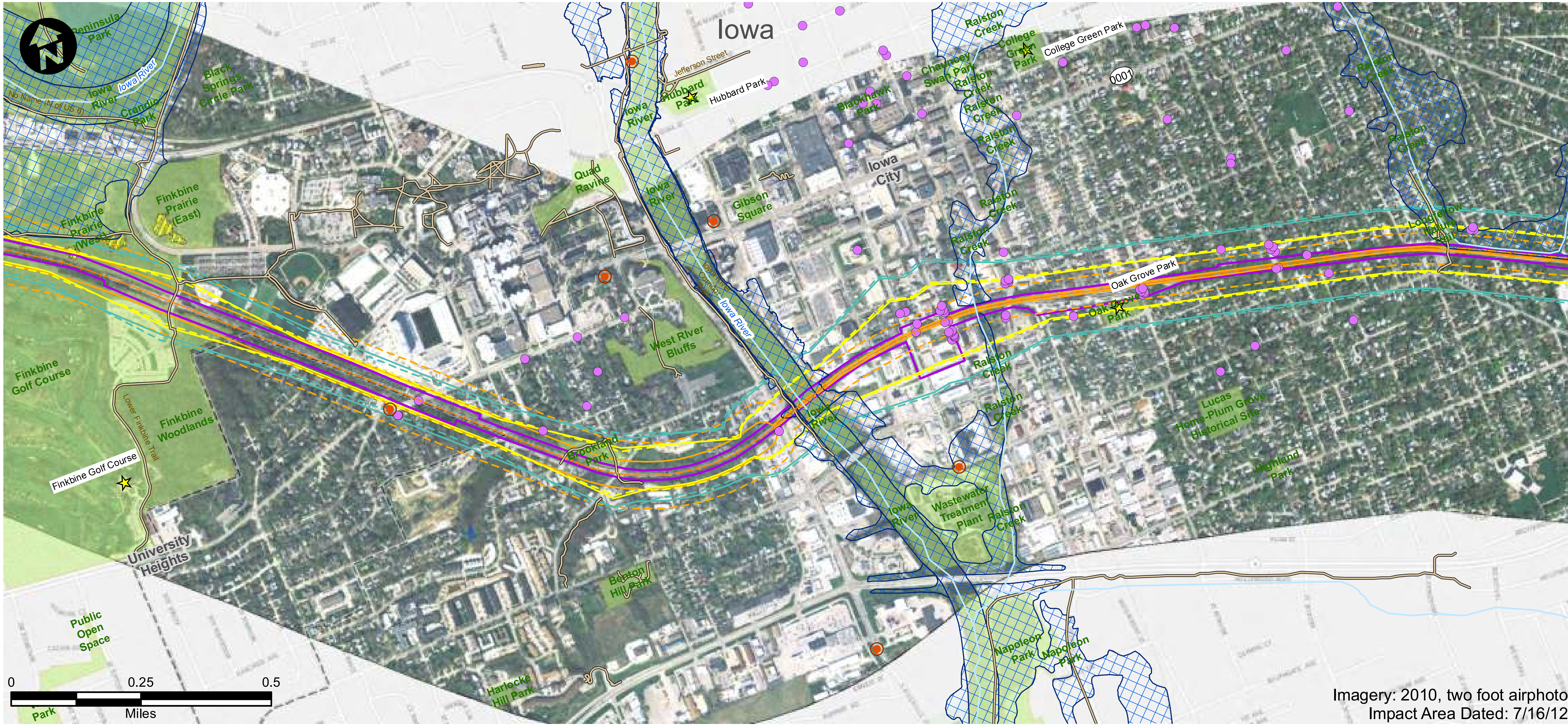

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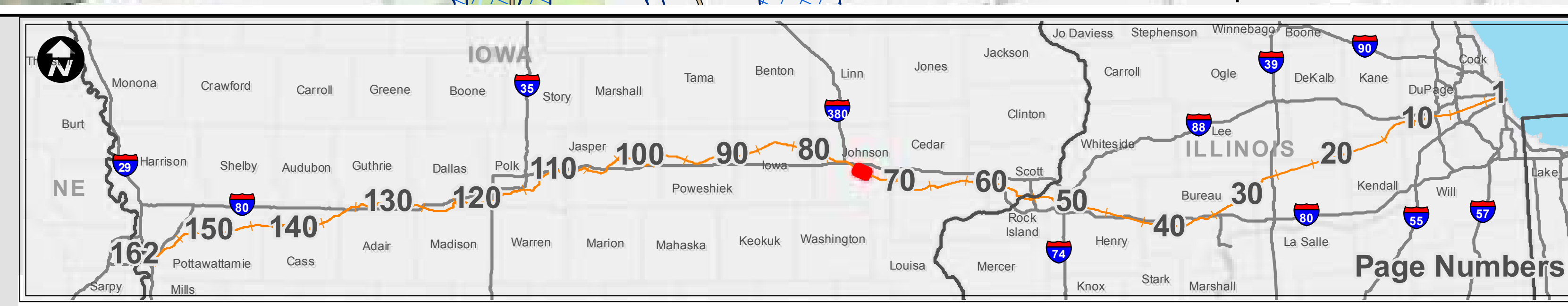

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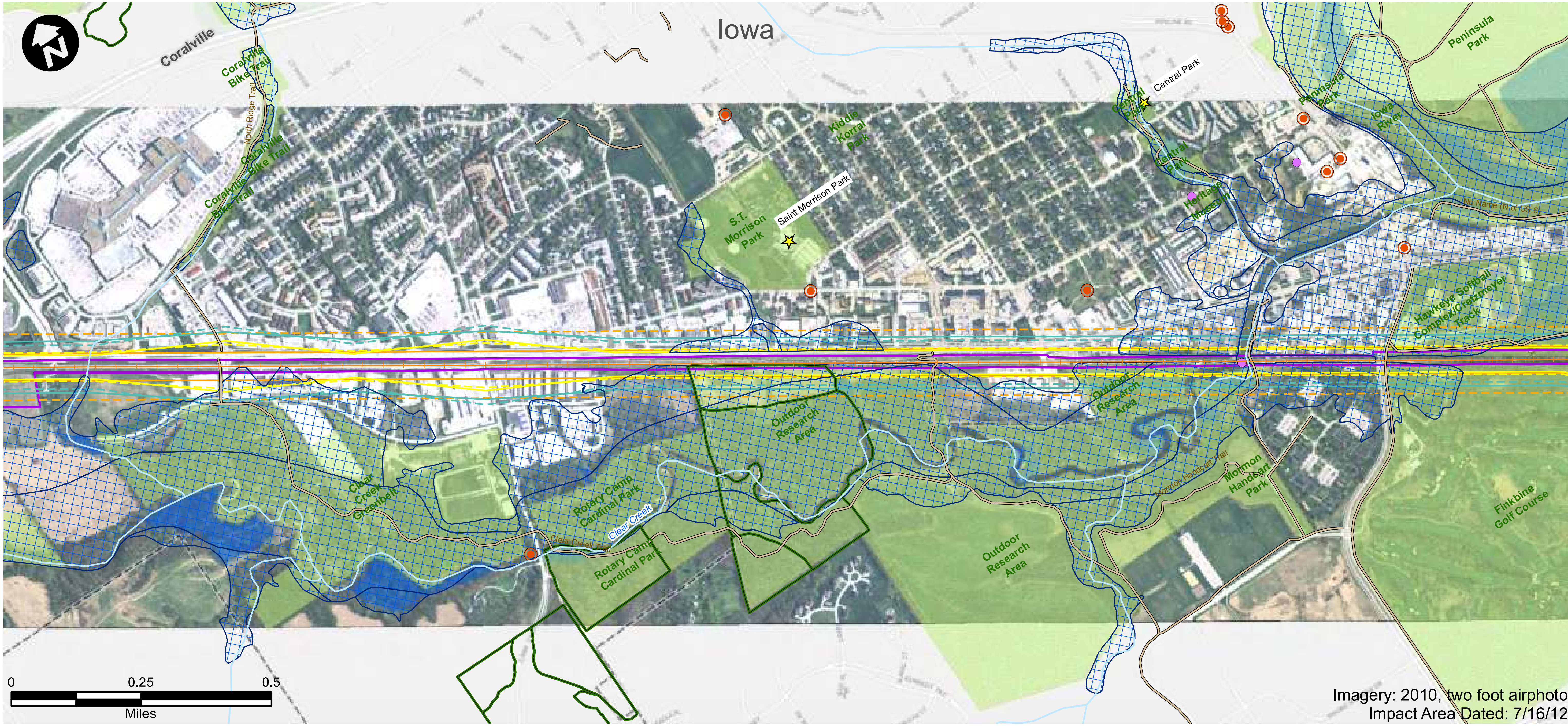

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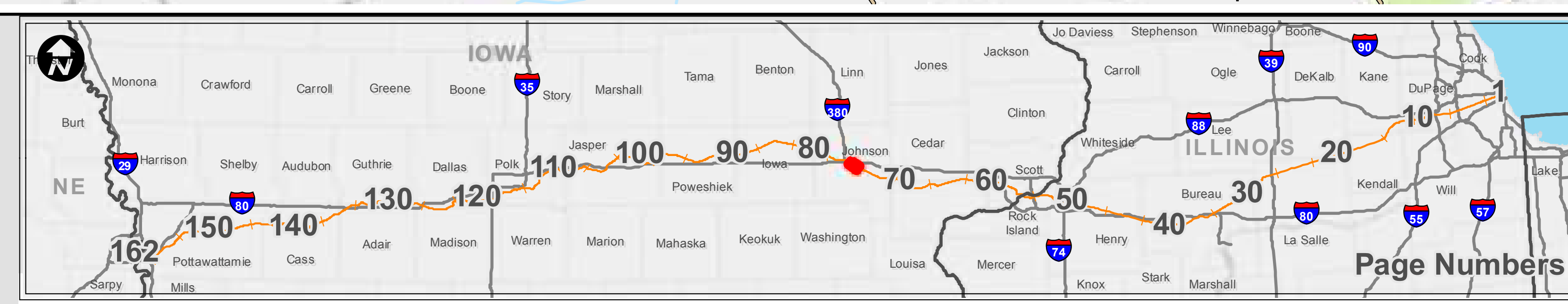

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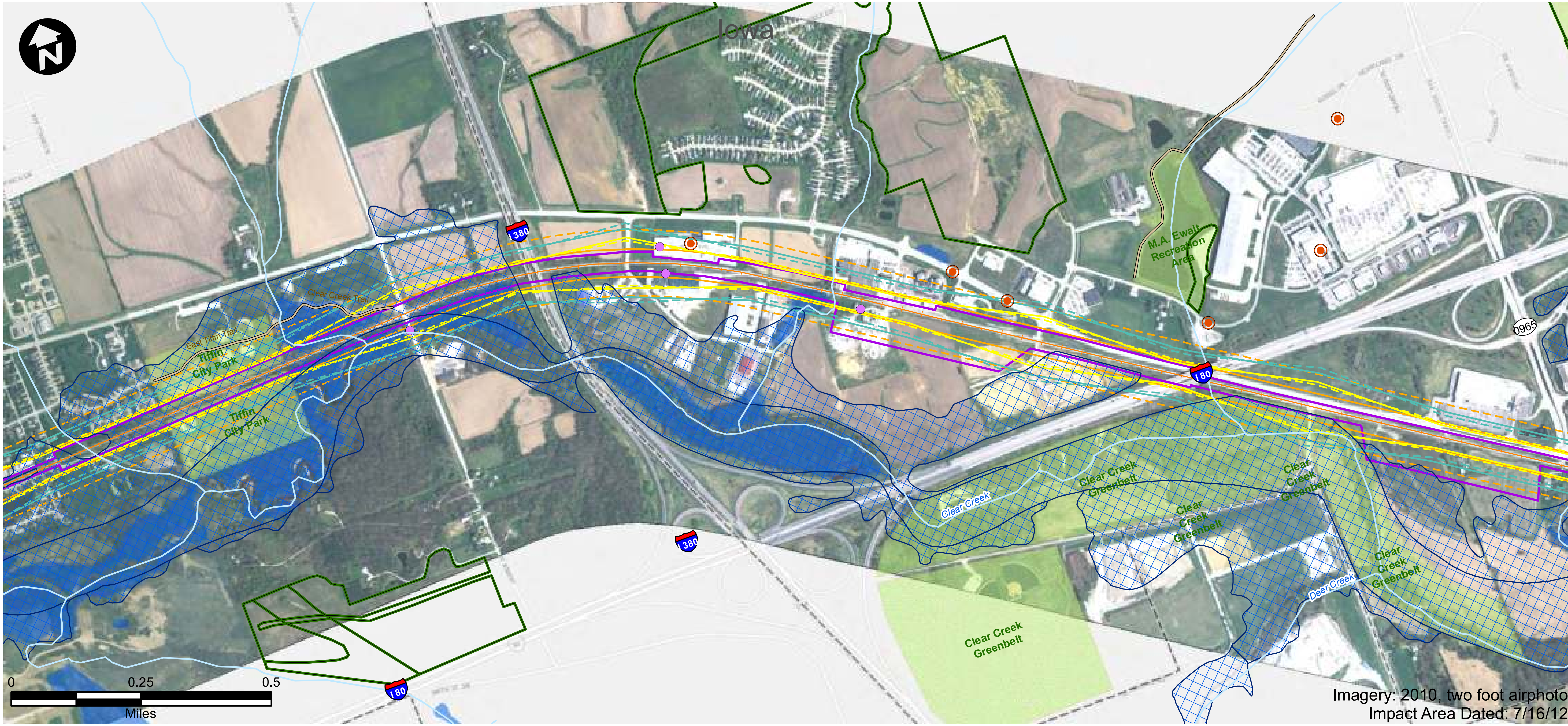

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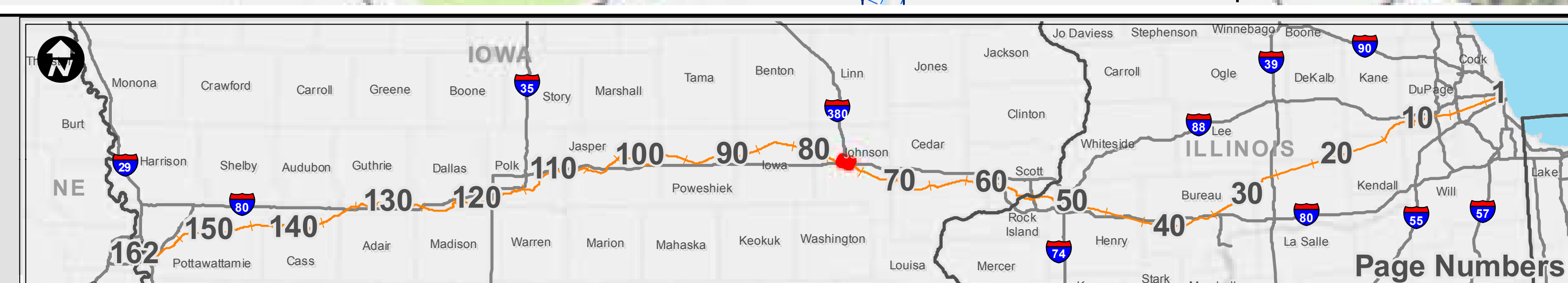

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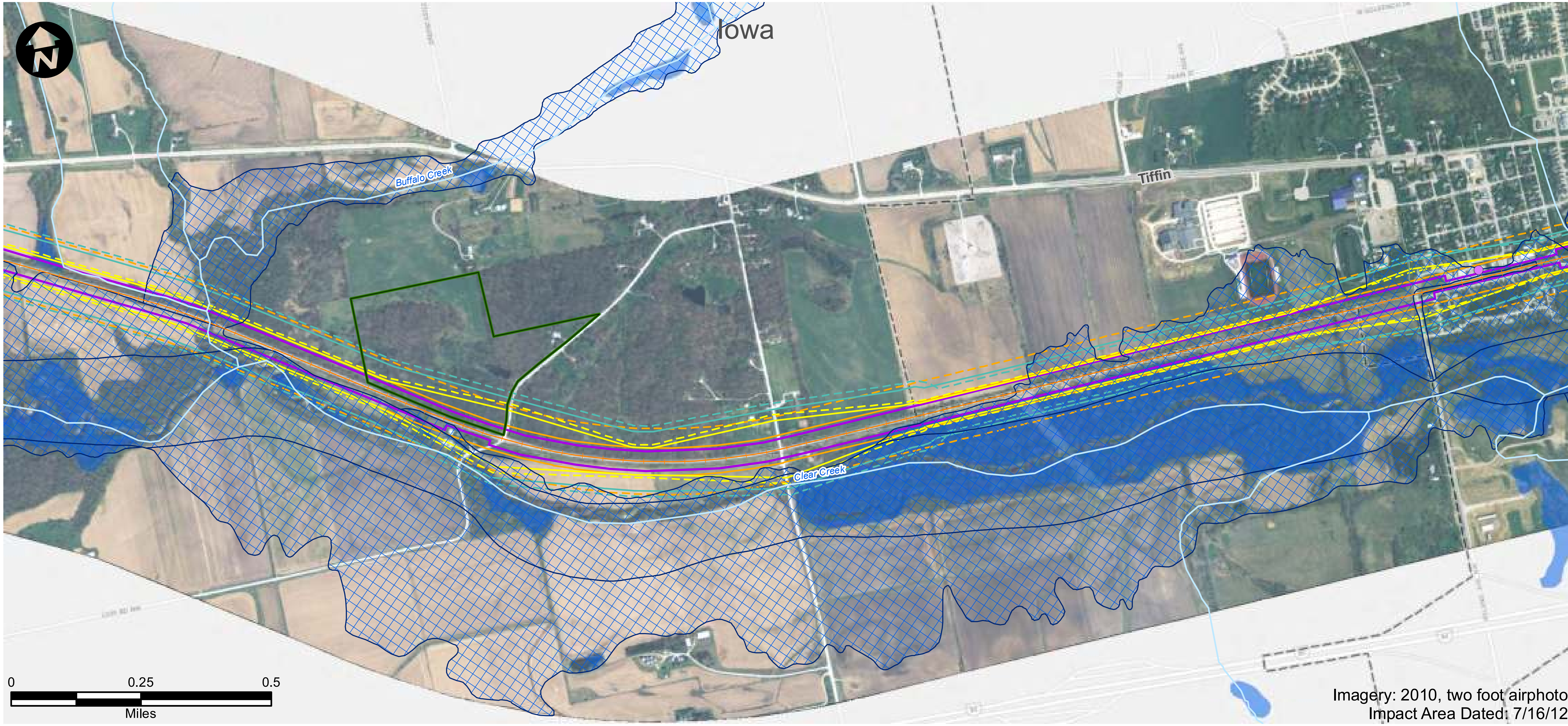

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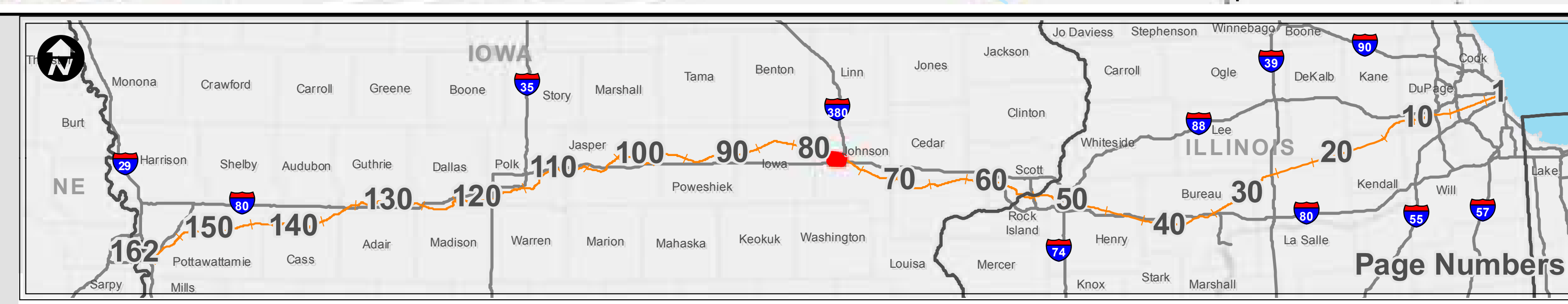

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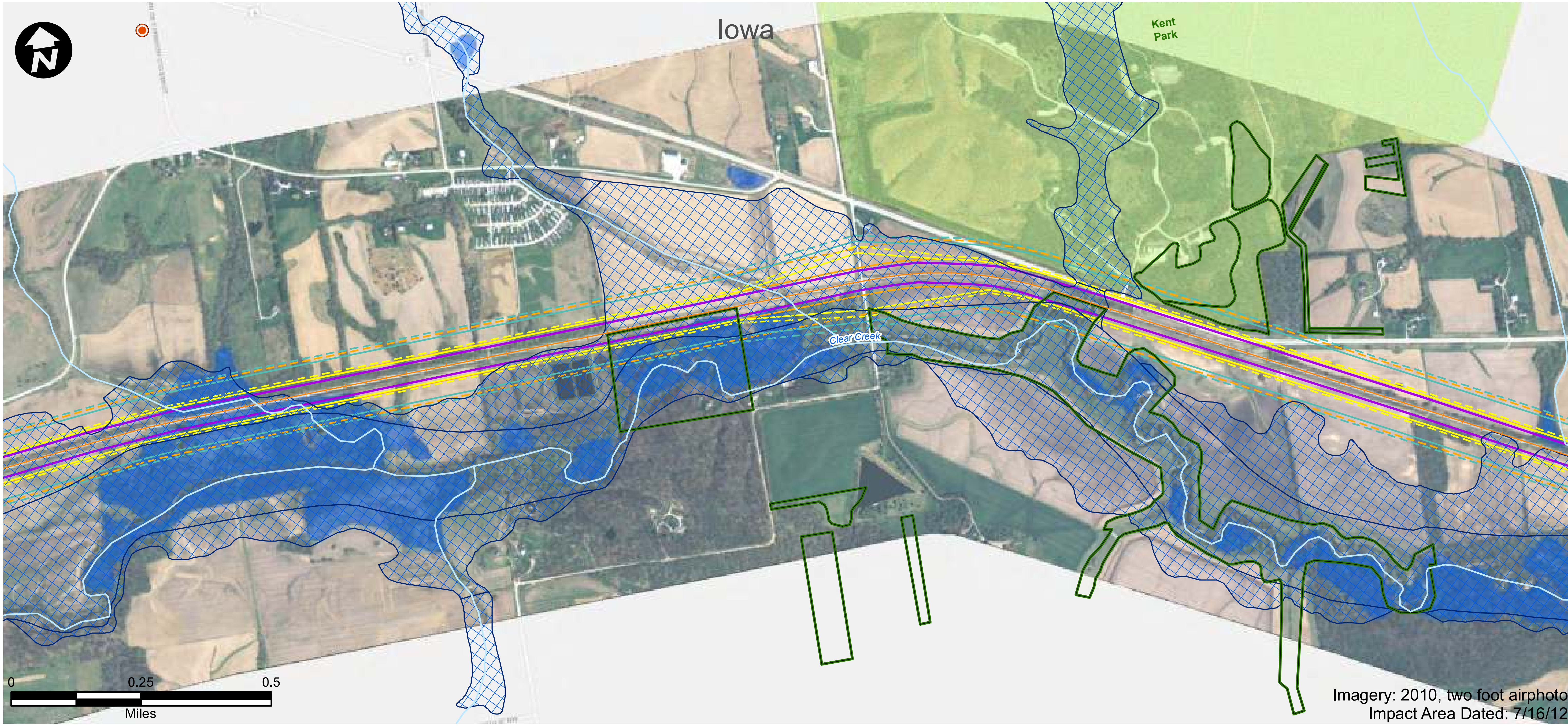

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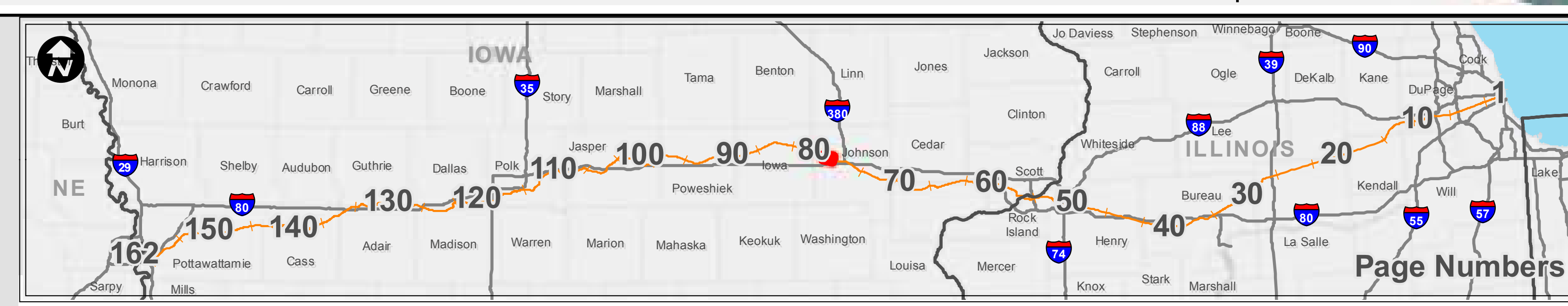

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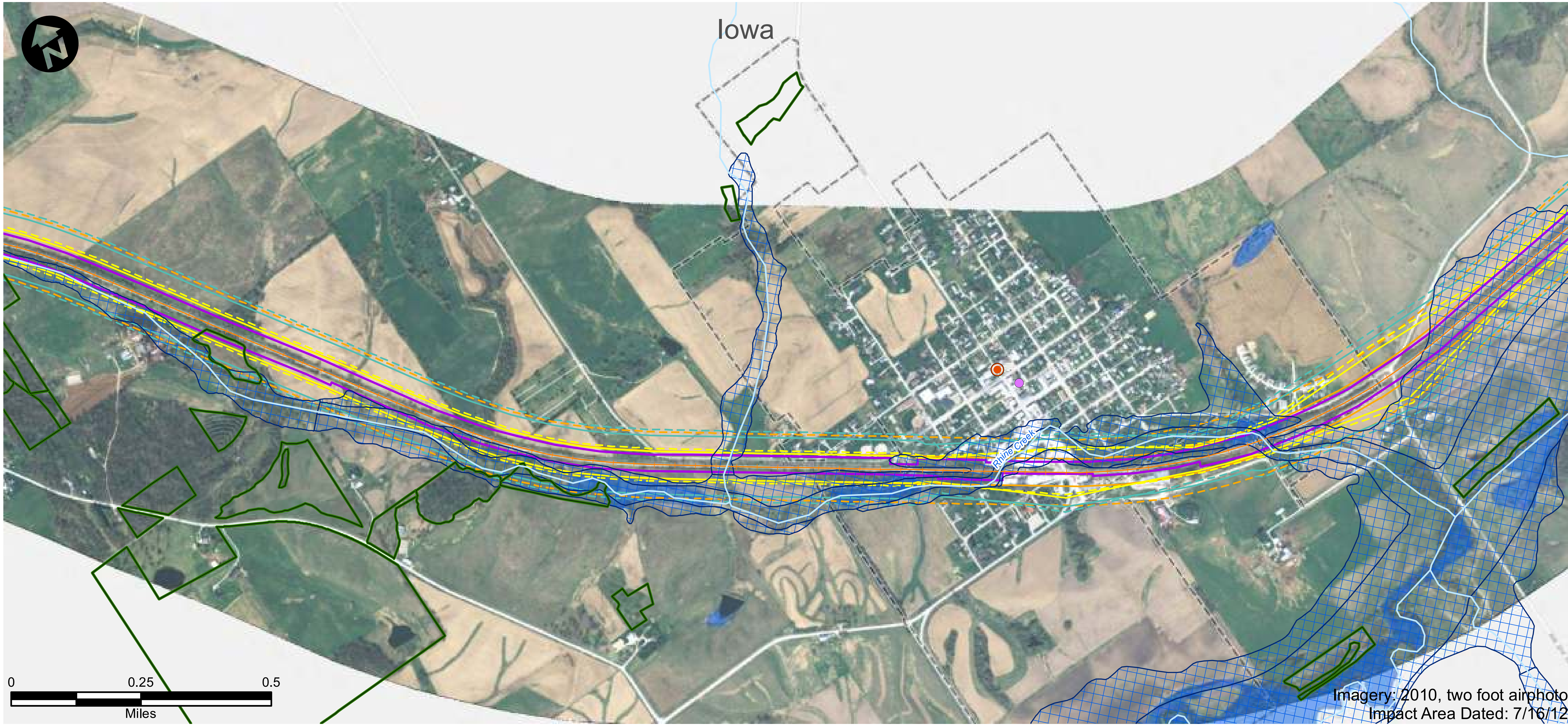

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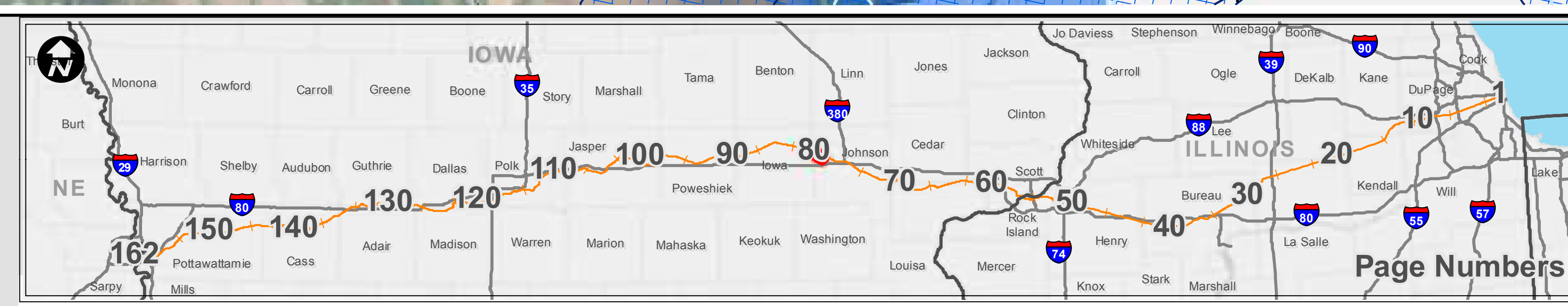

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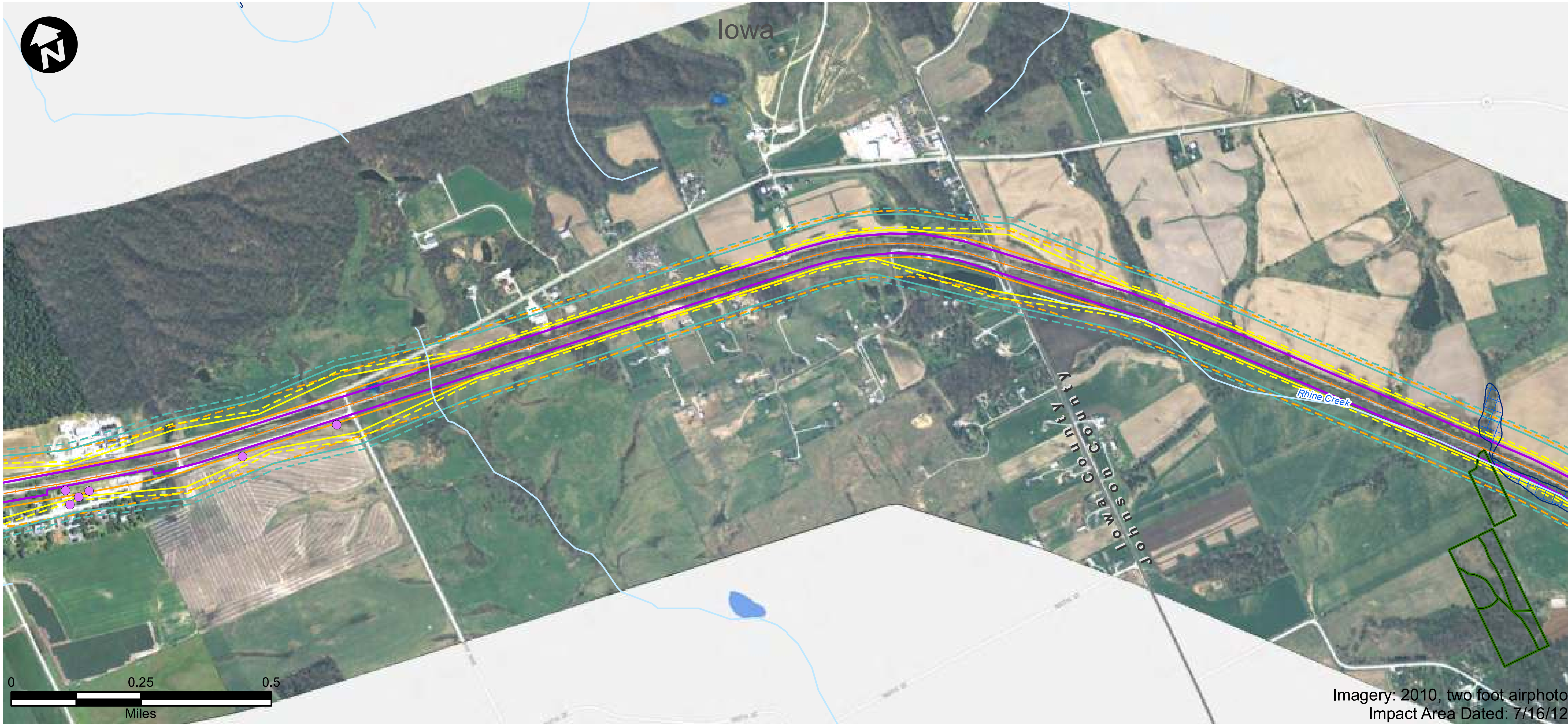

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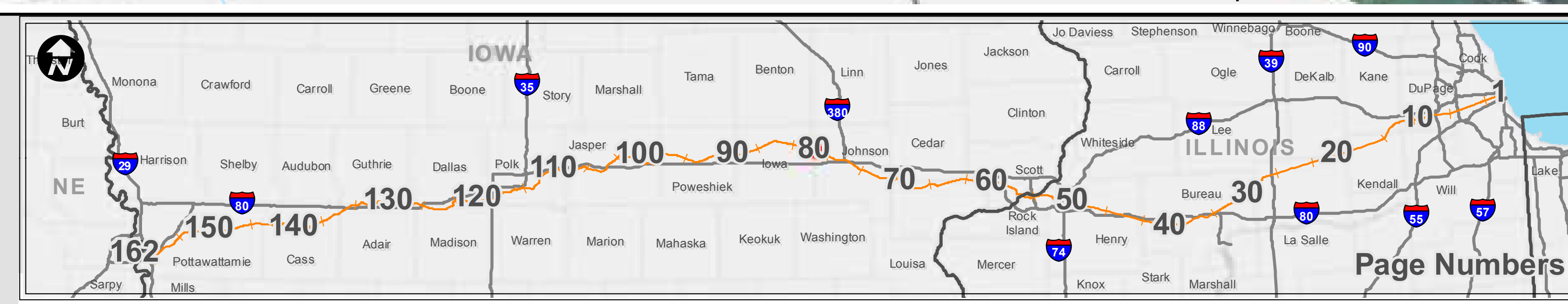

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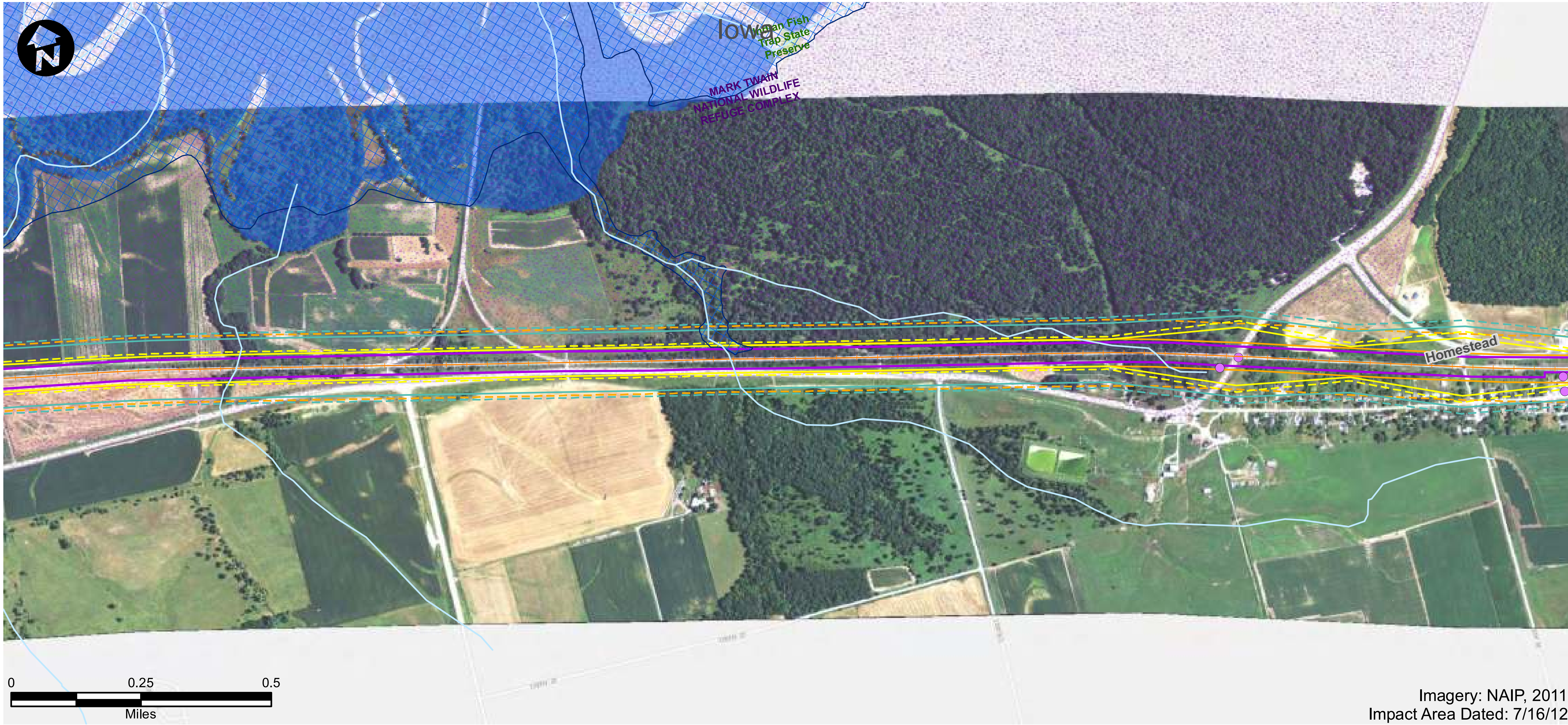

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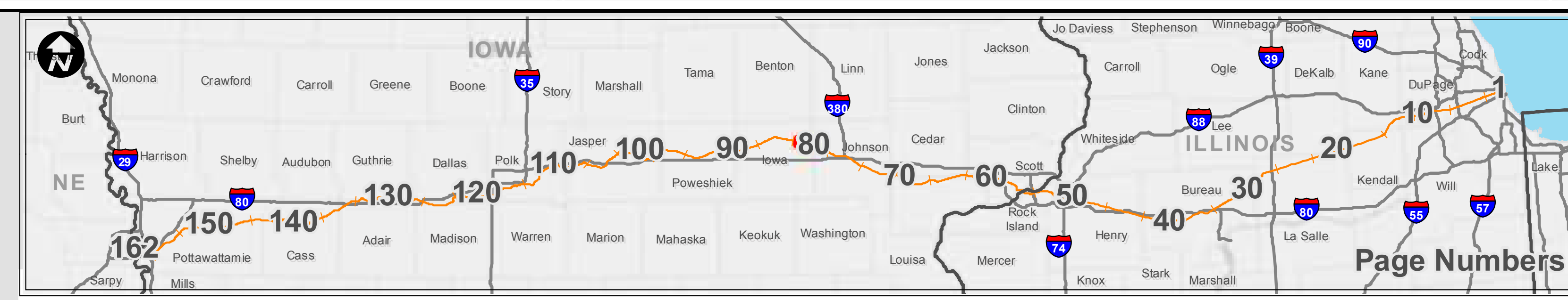

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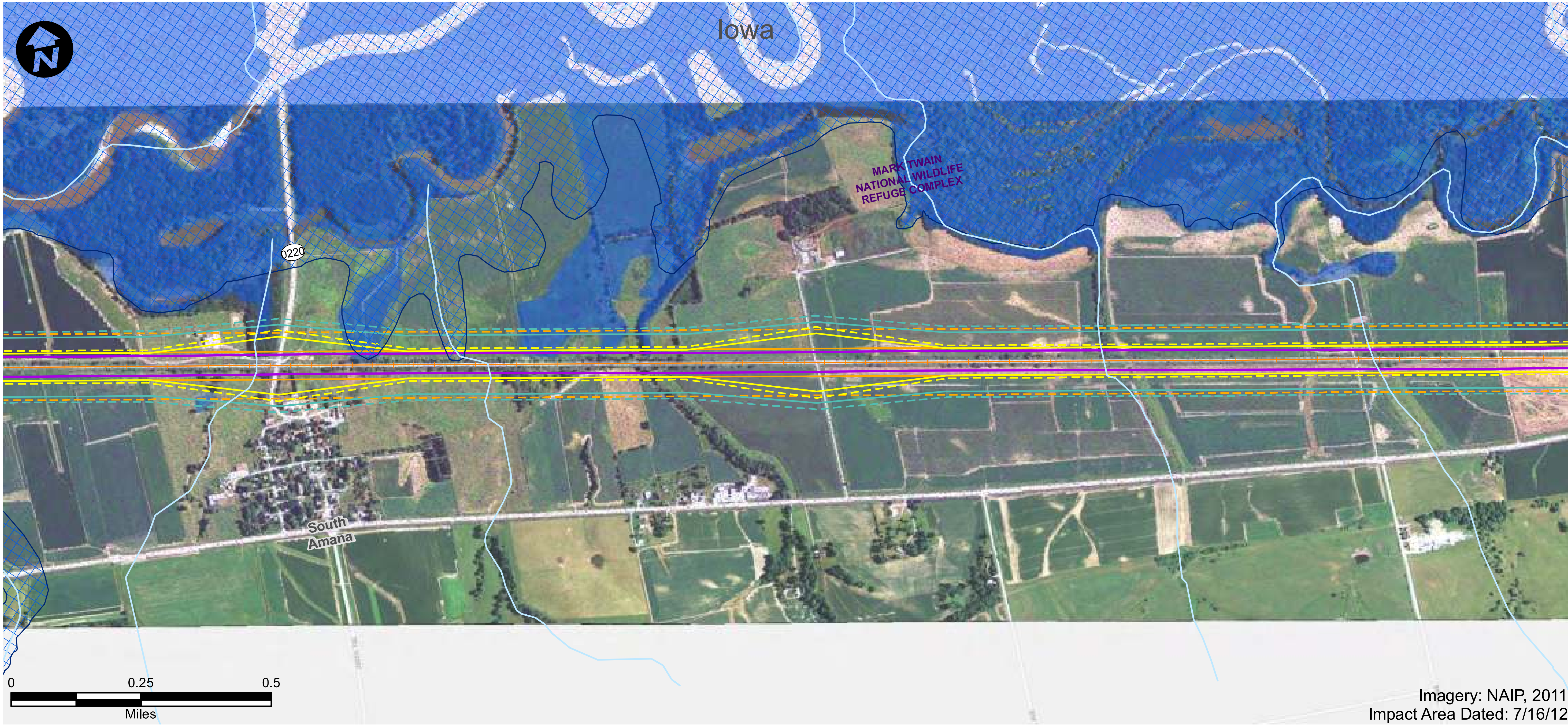

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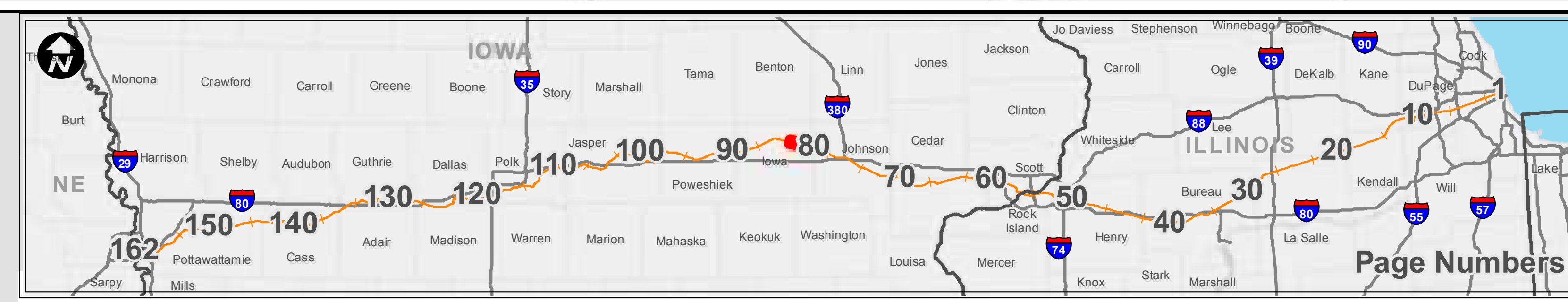

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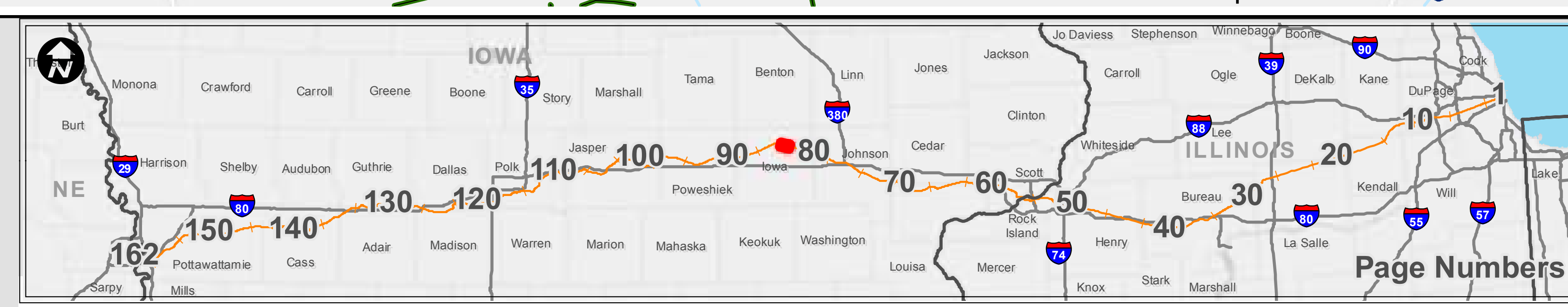

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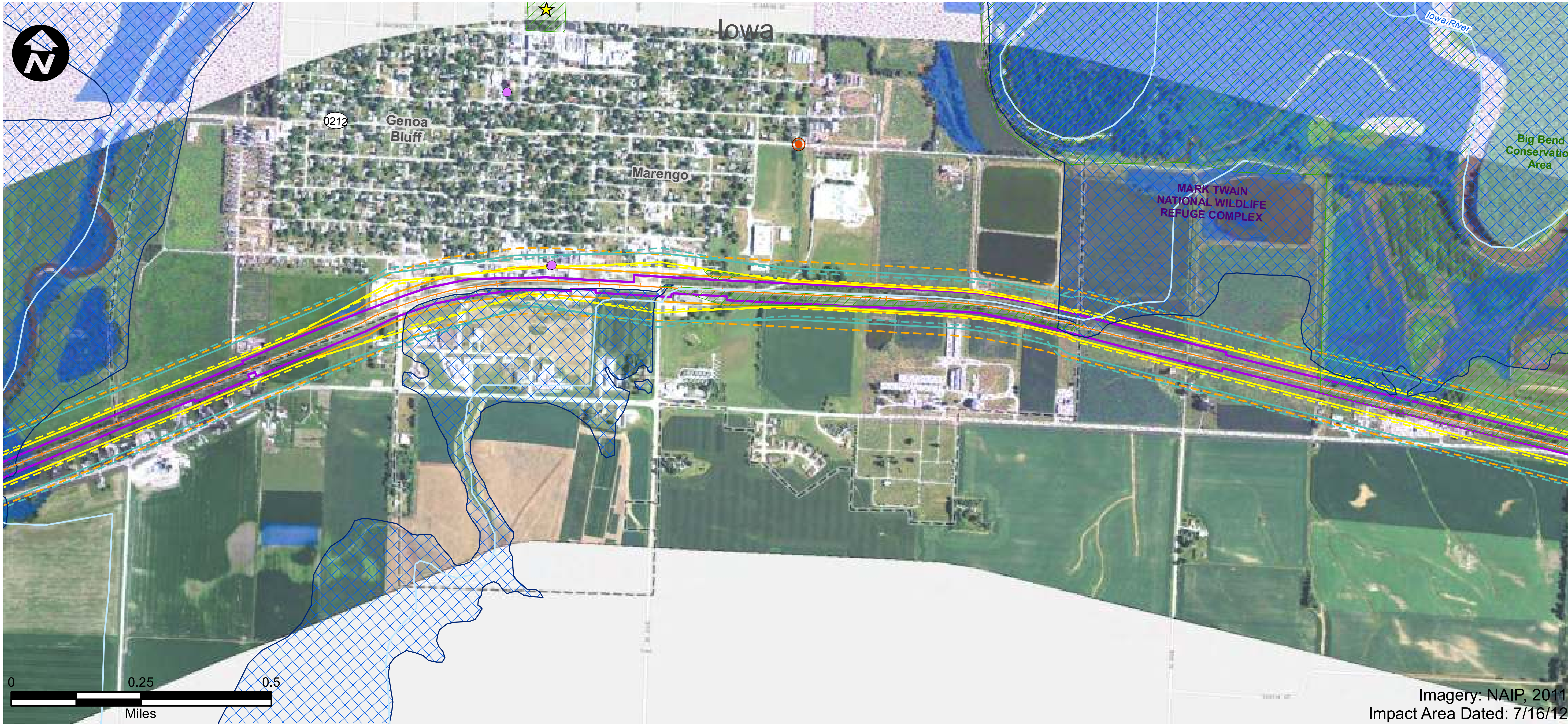

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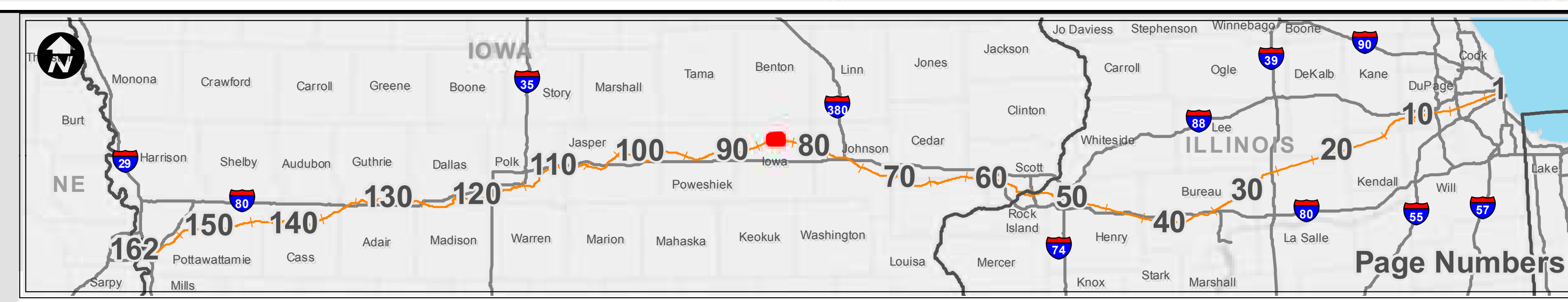

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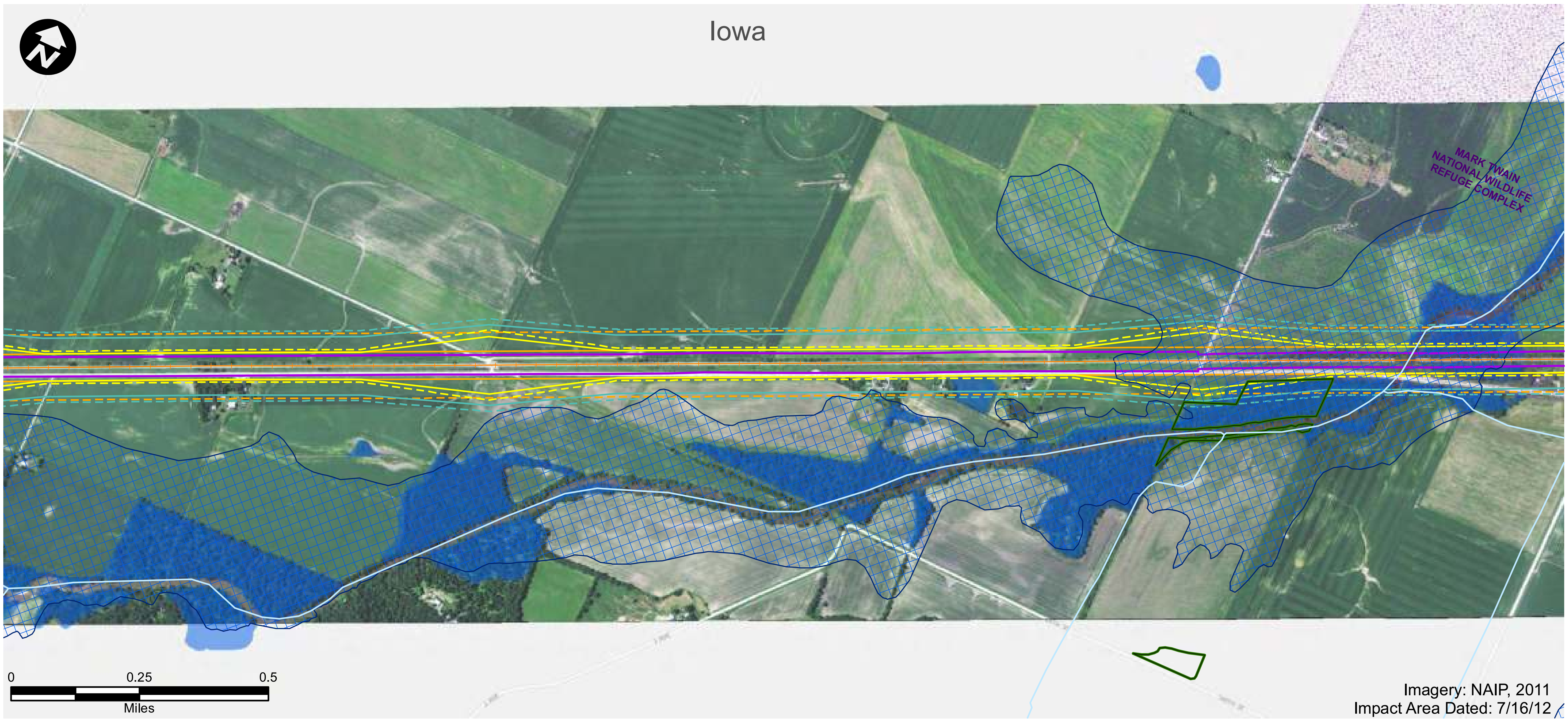

Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
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USFWS Land
IA Prairies
IA Forest Stands
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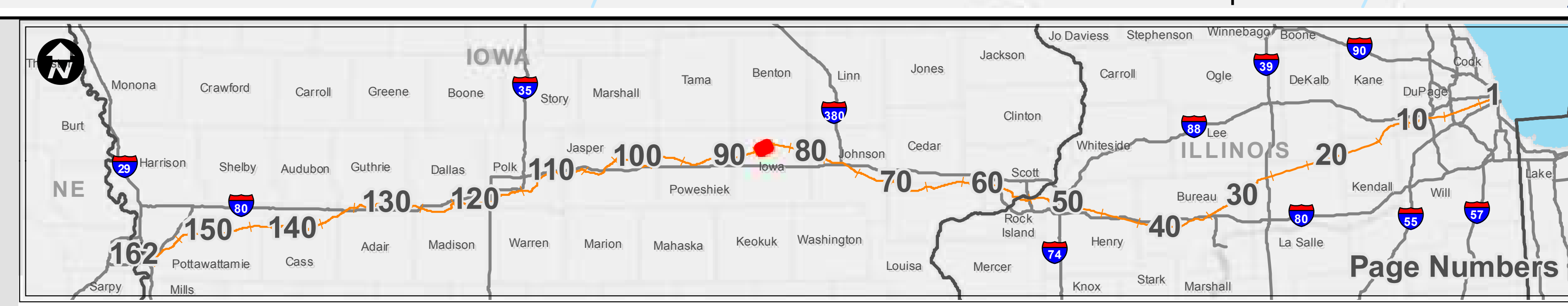

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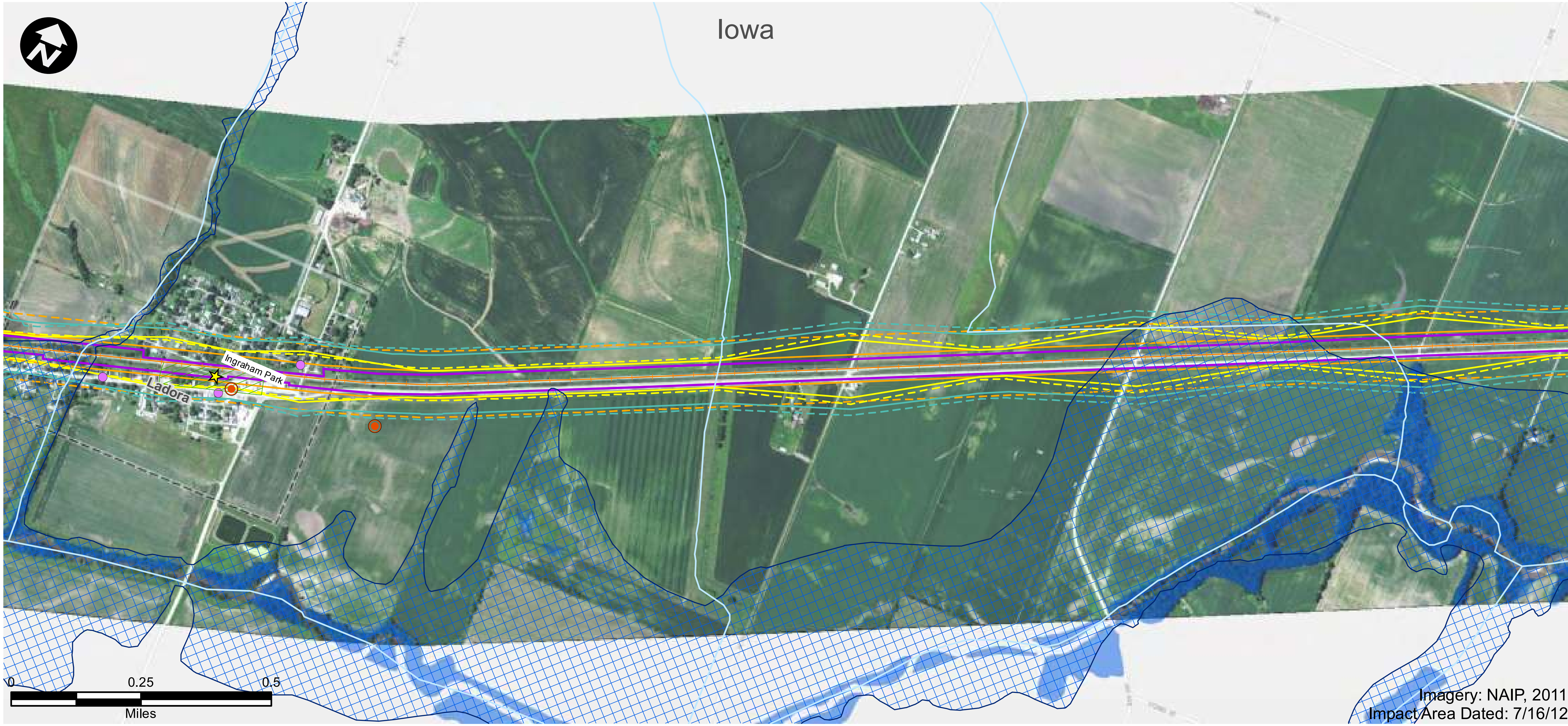

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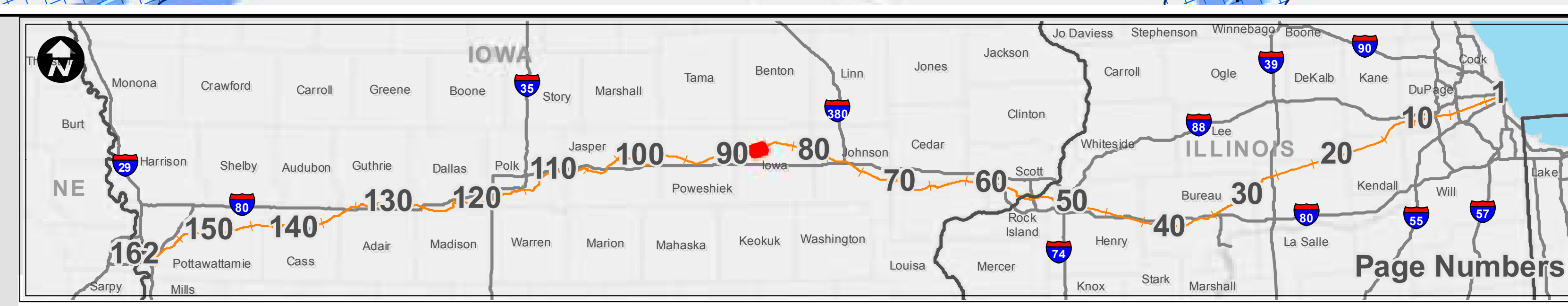

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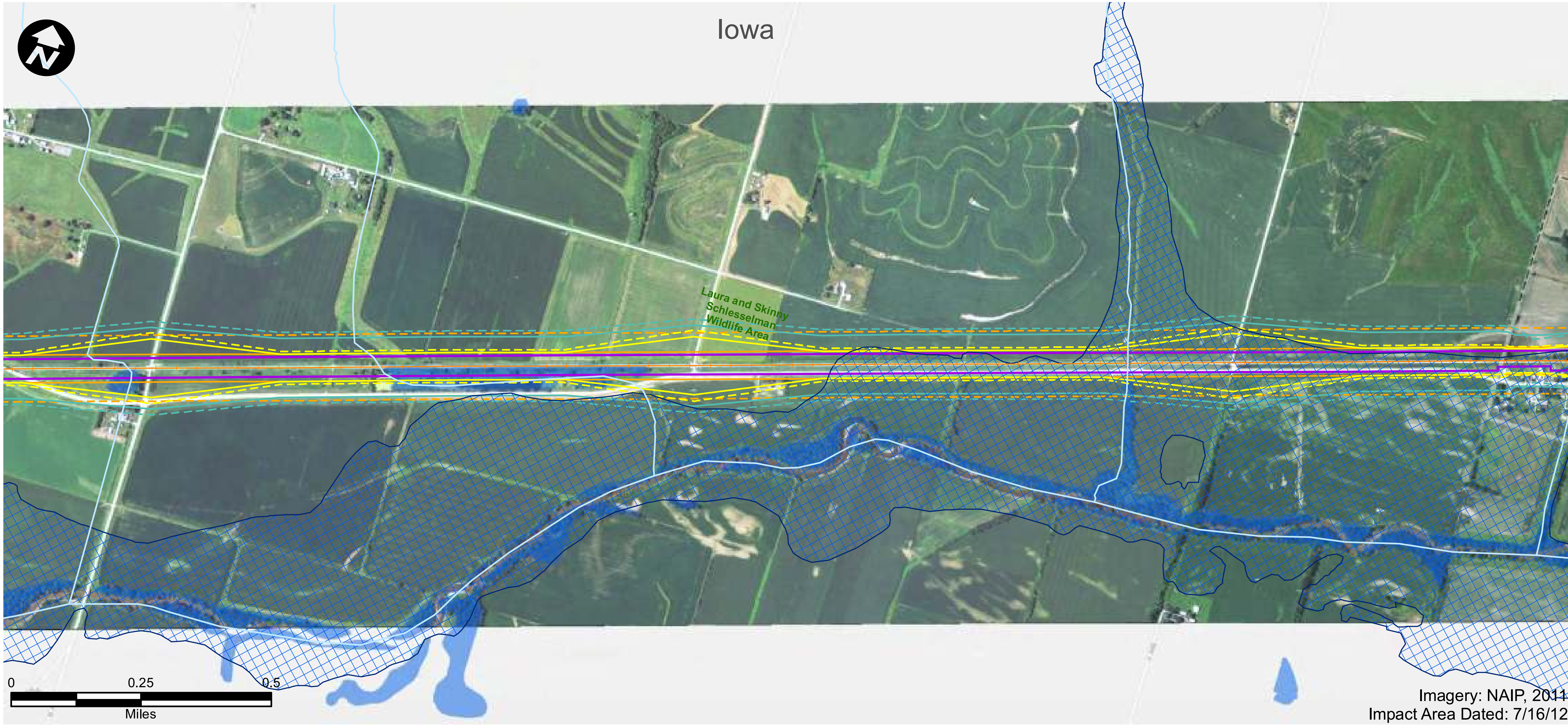

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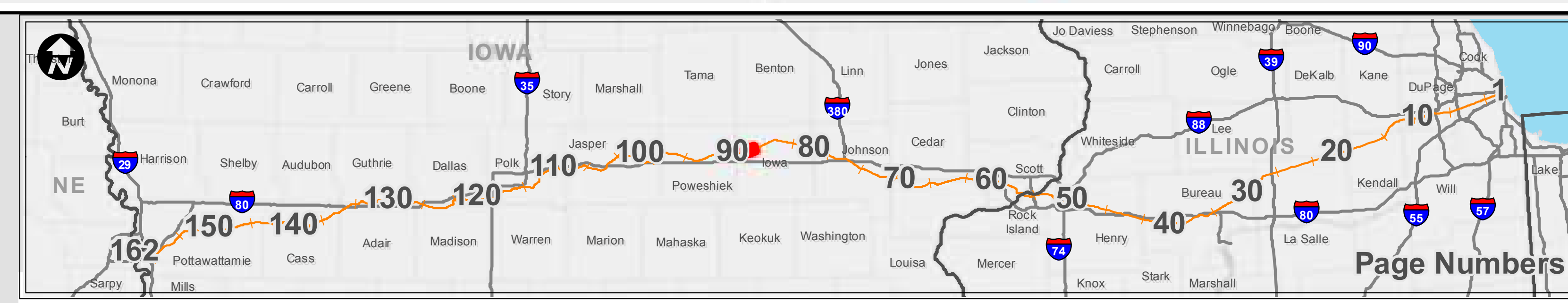

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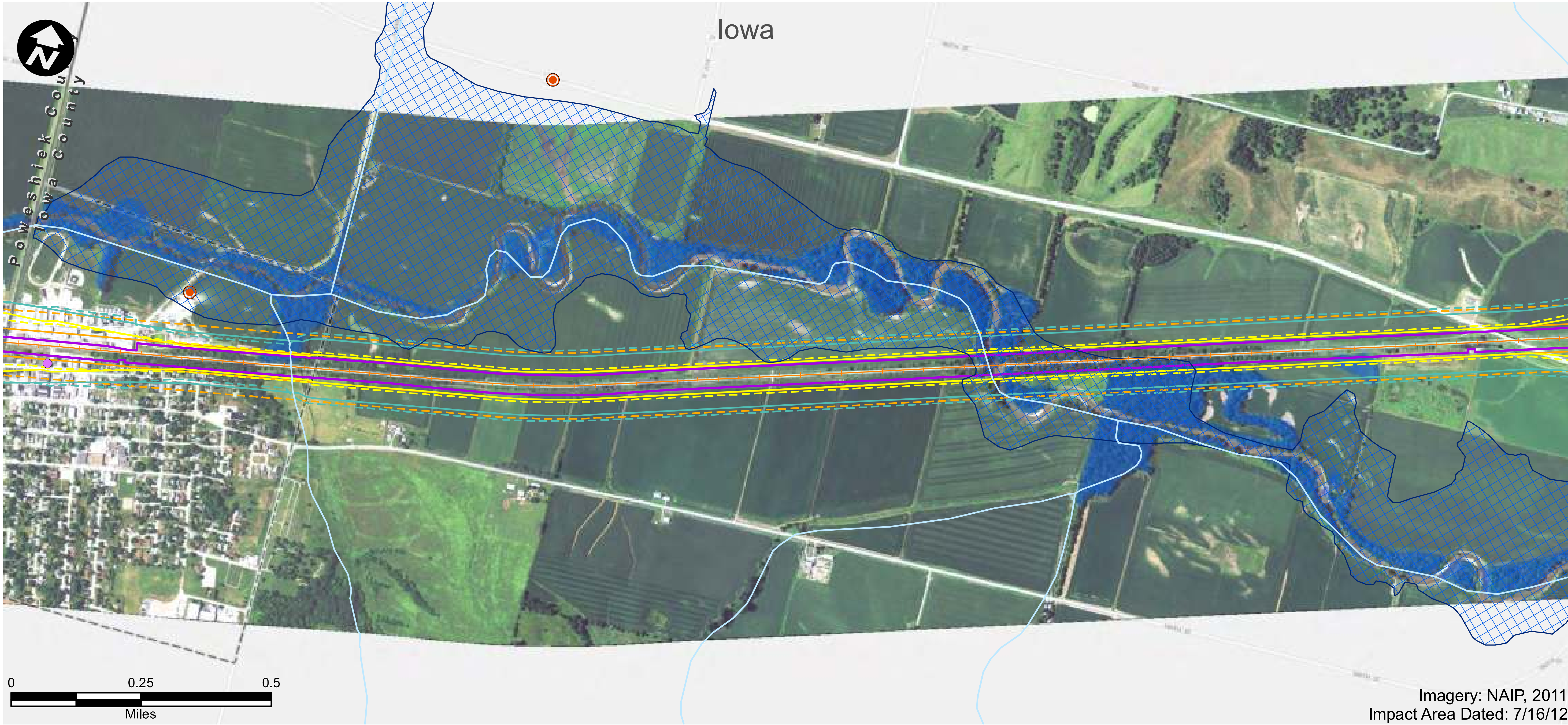

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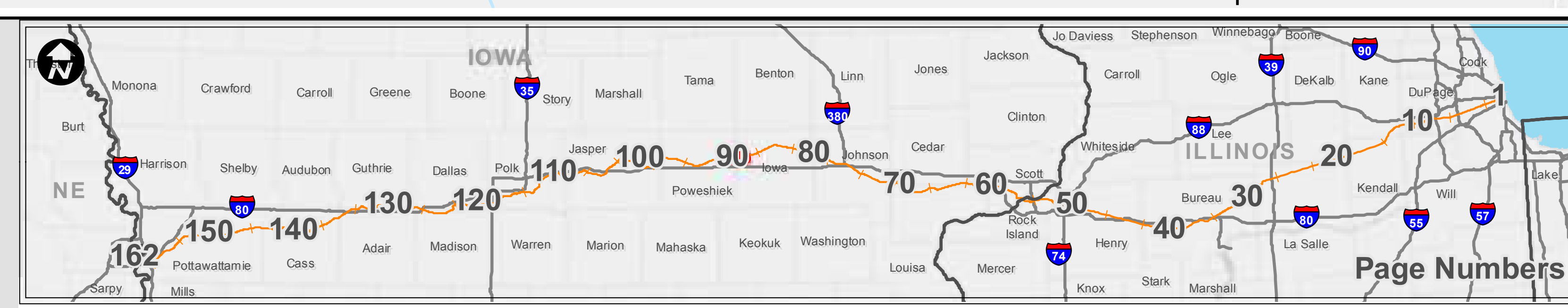

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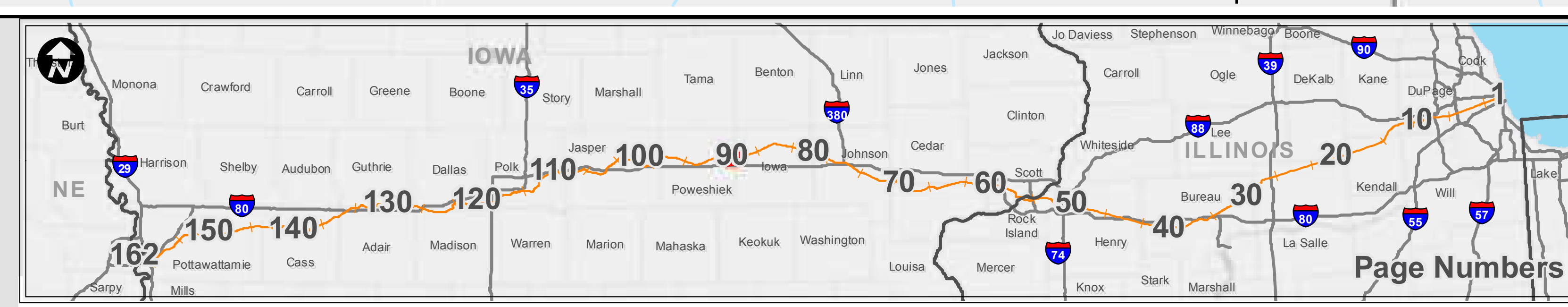

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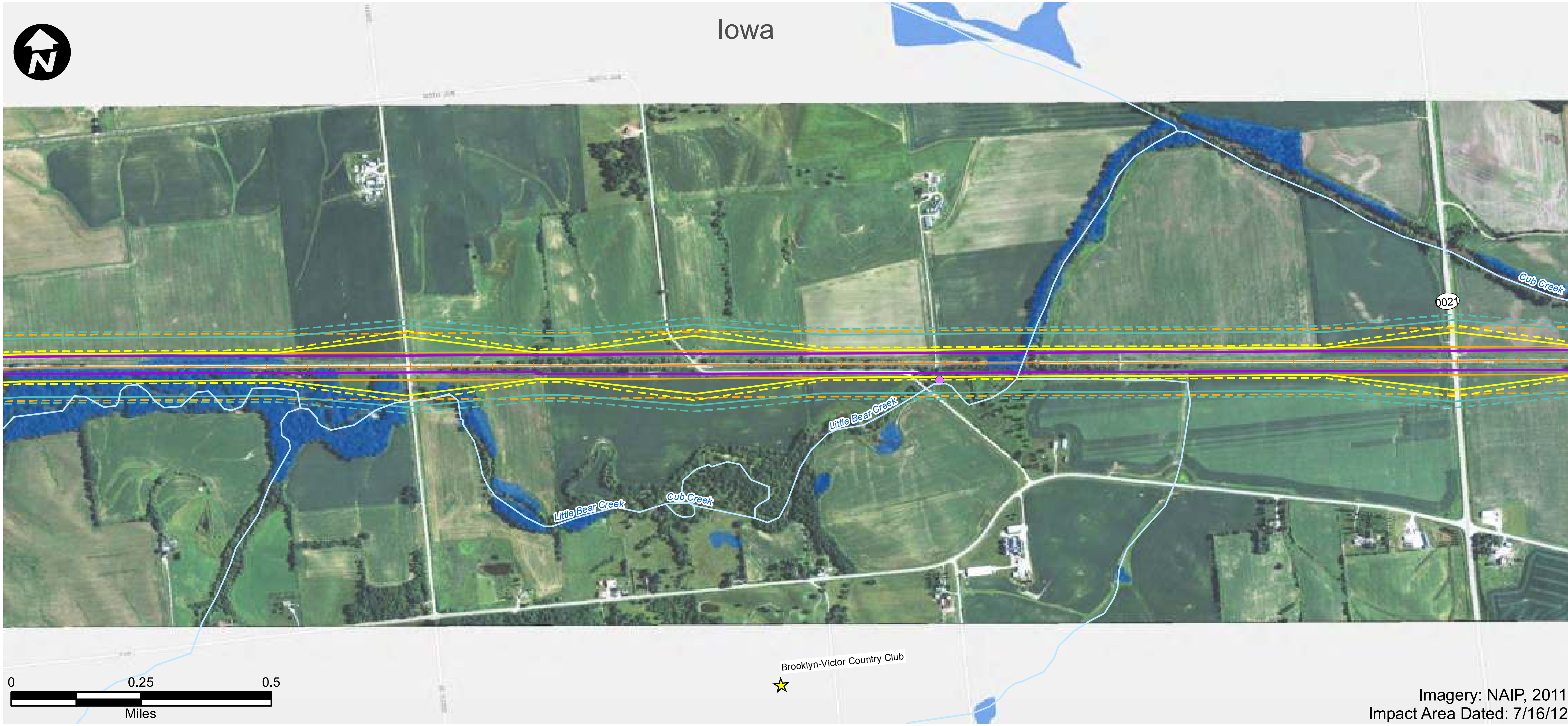

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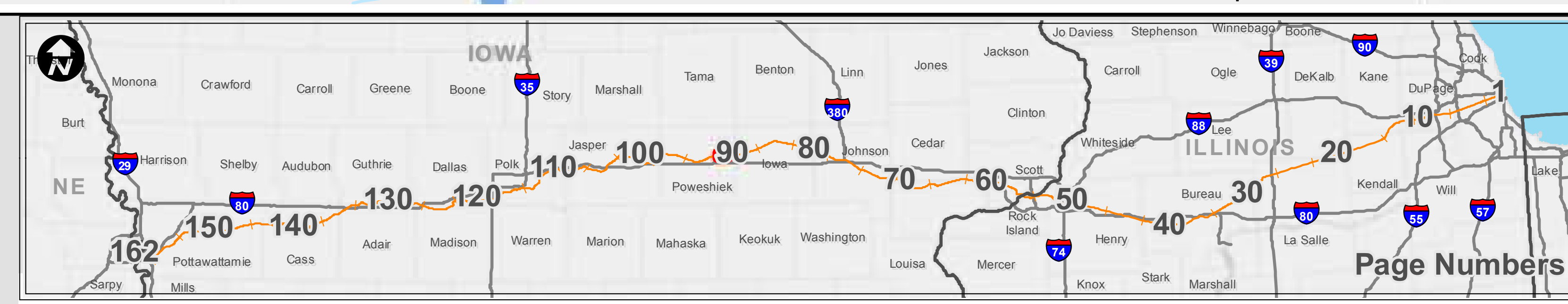

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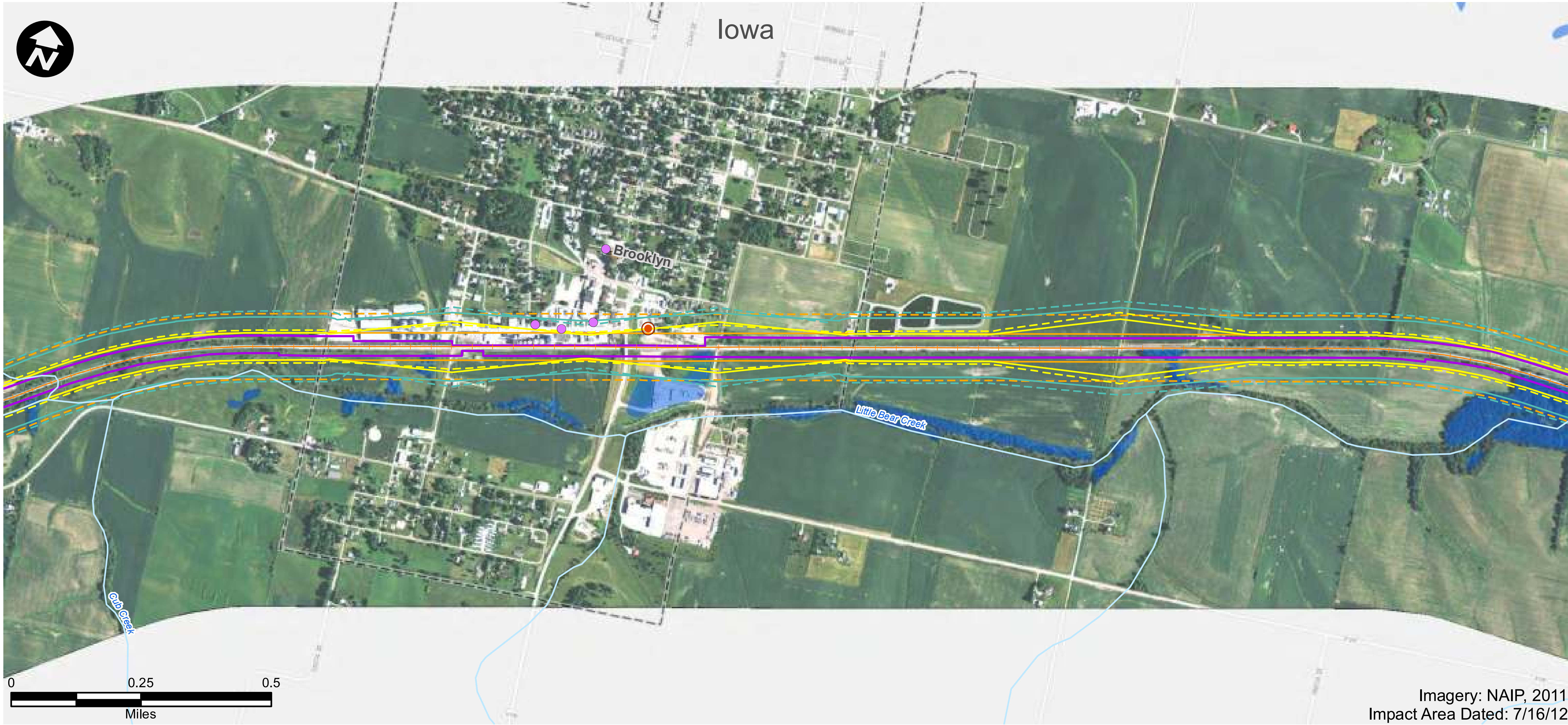

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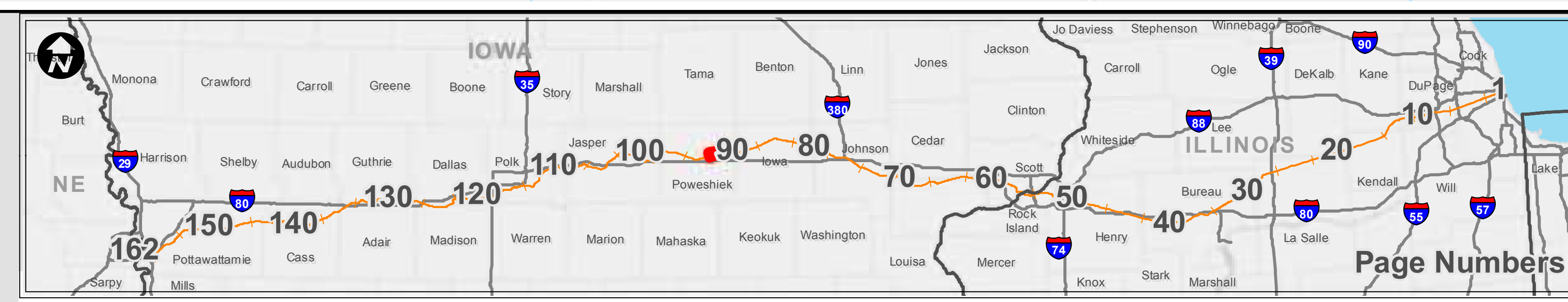

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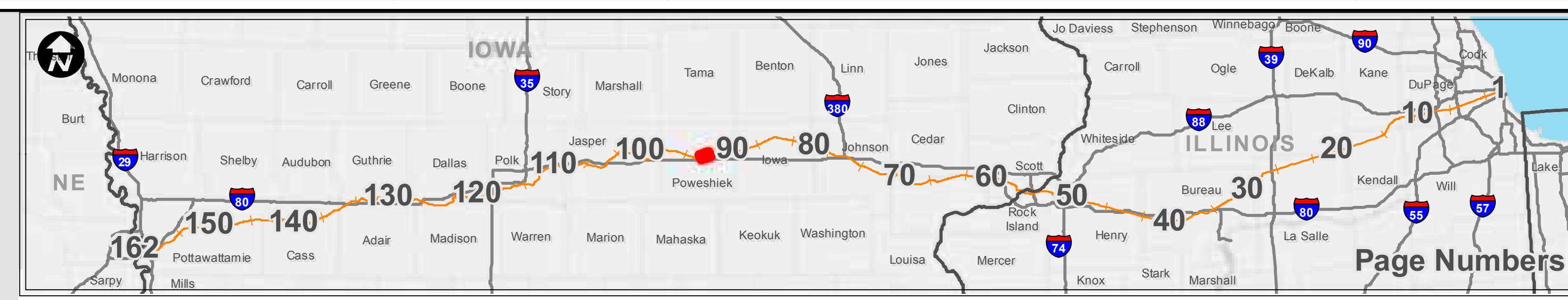

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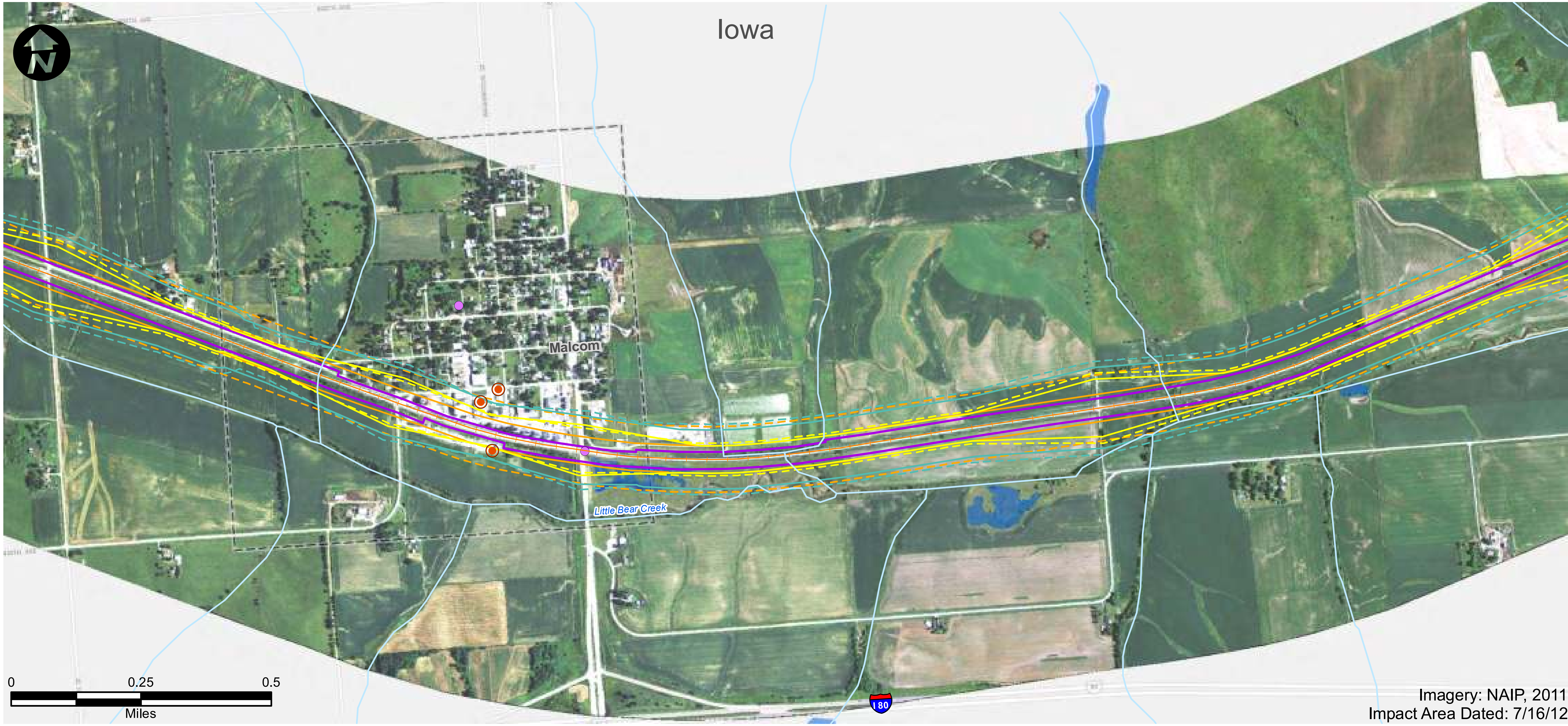

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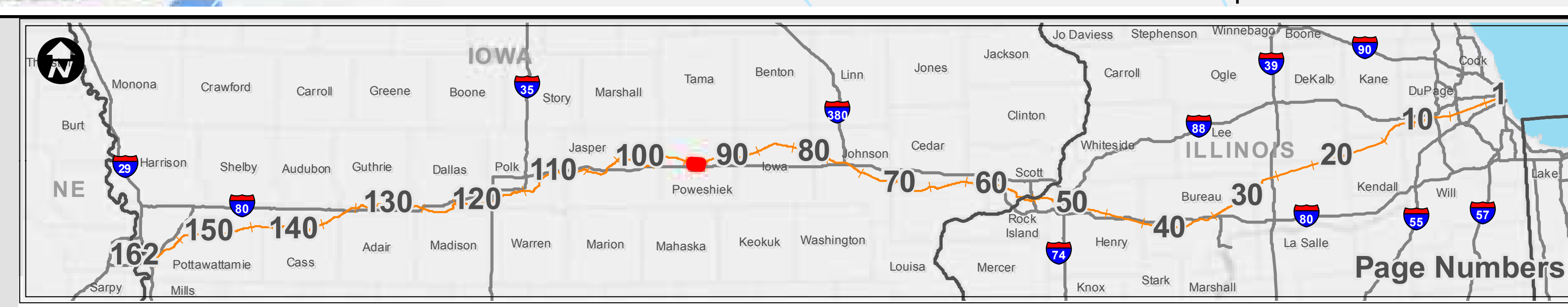

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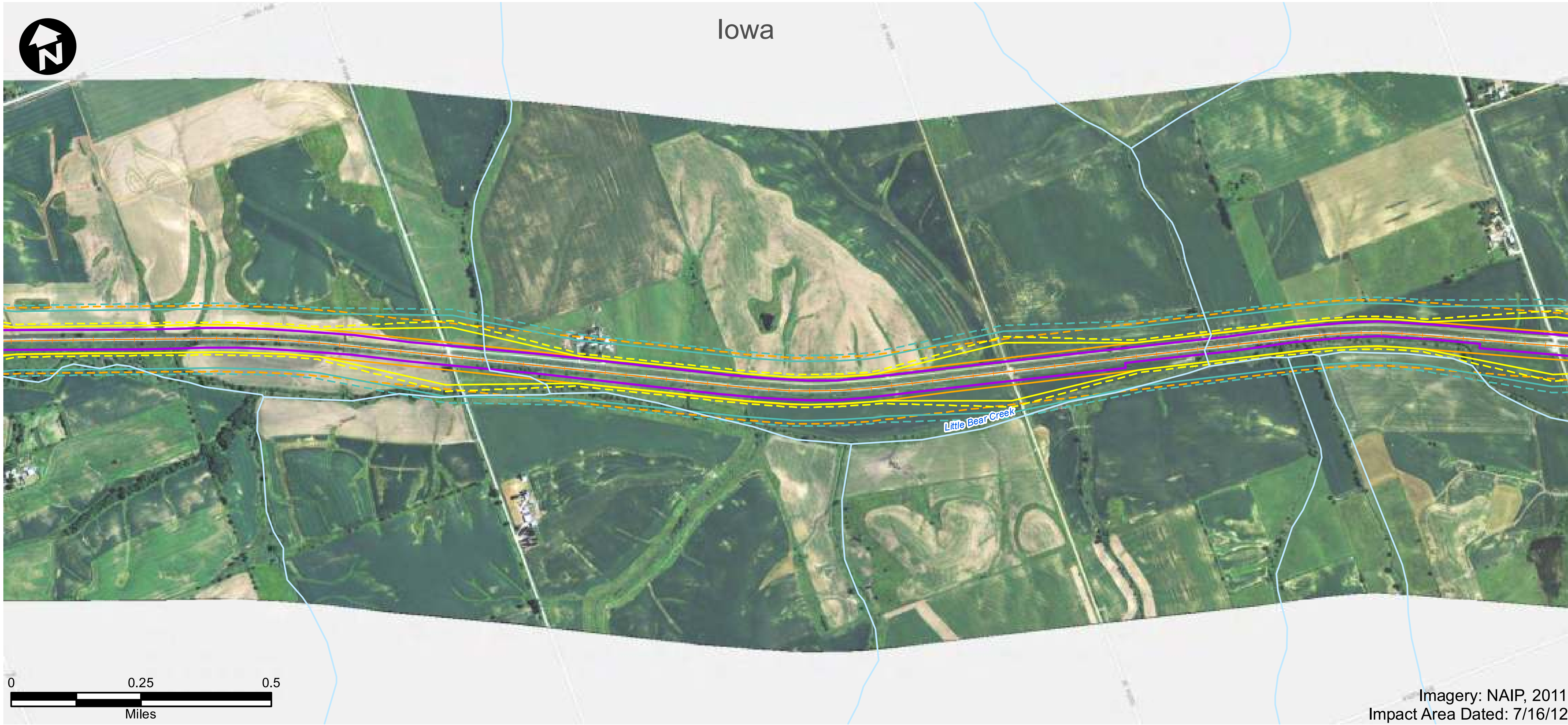

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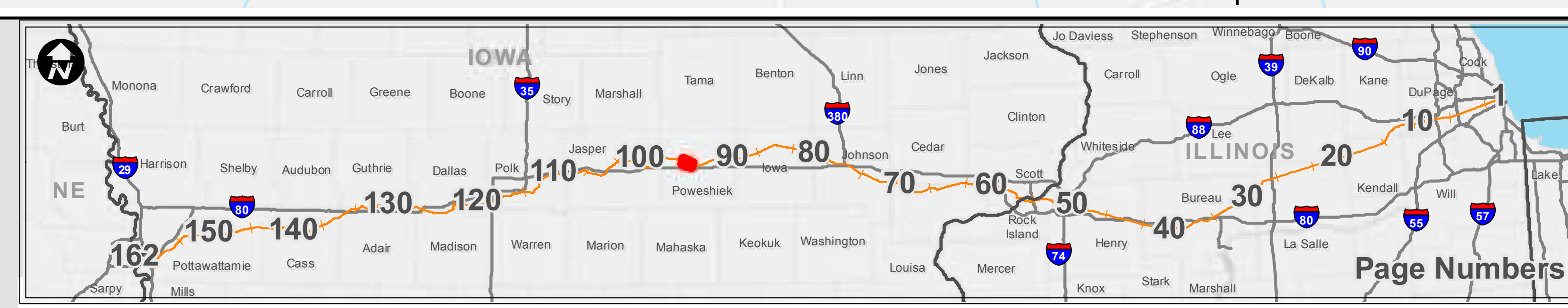

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Route Alternative
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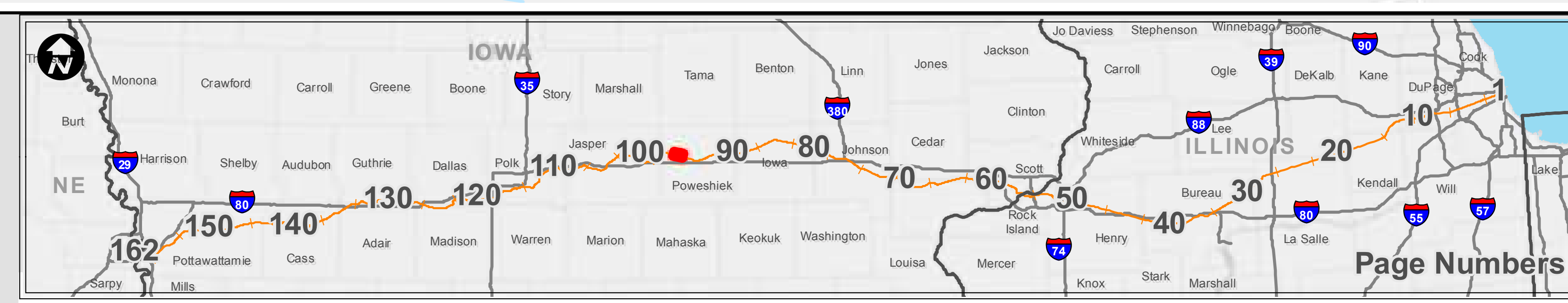

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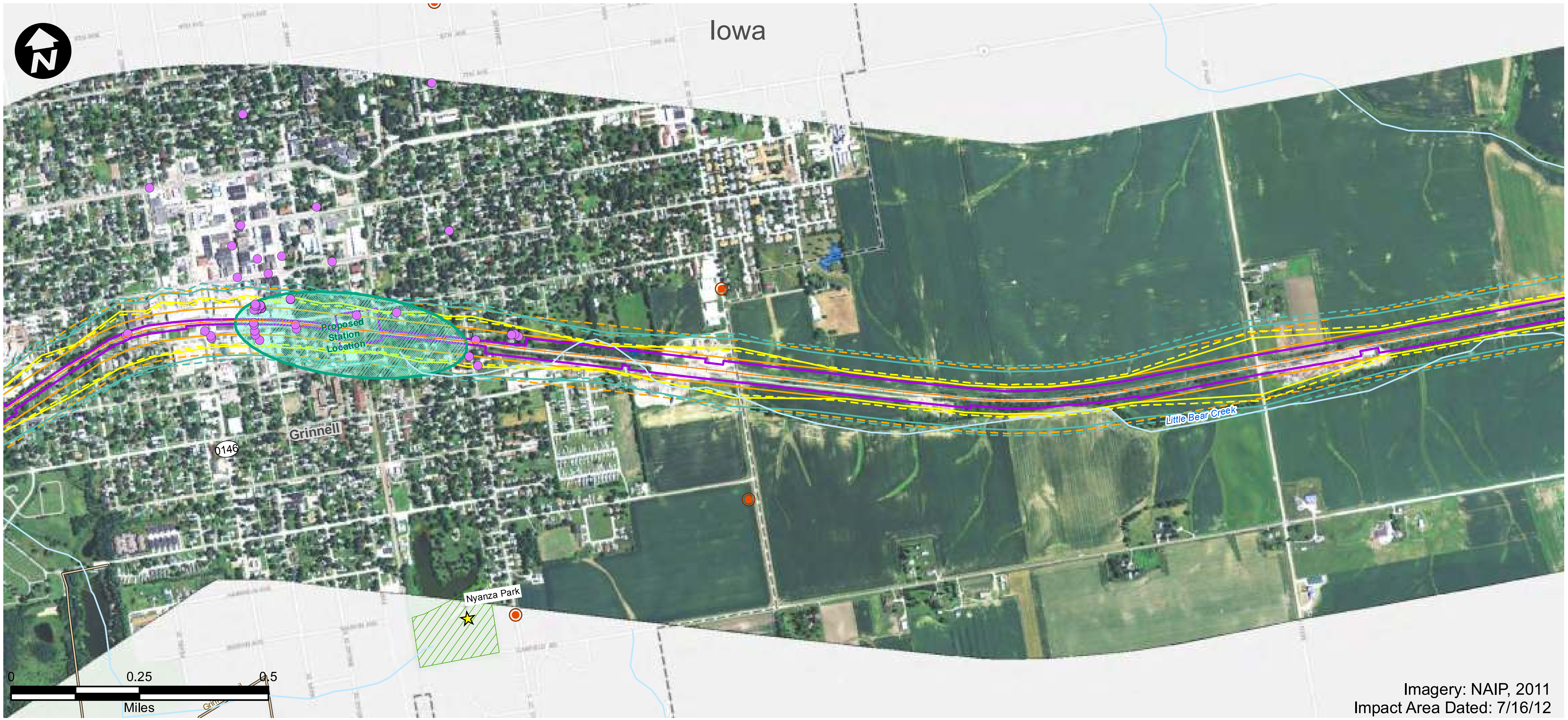

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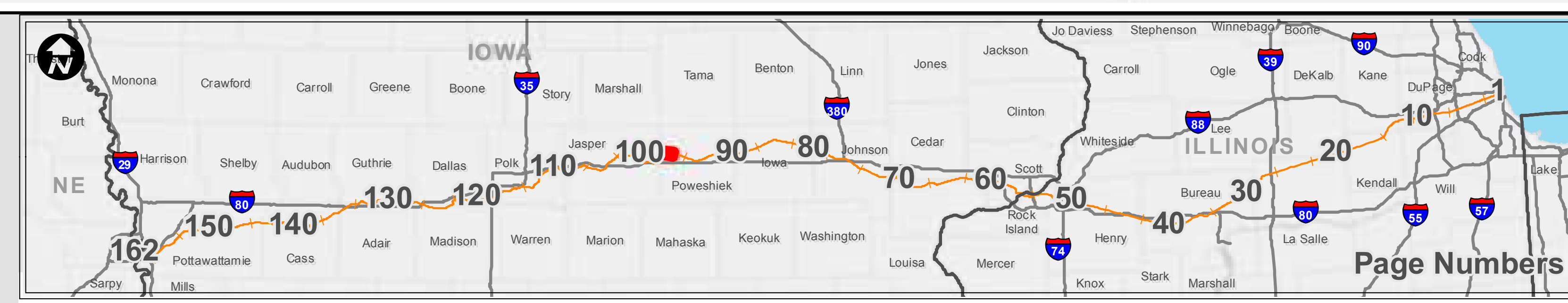

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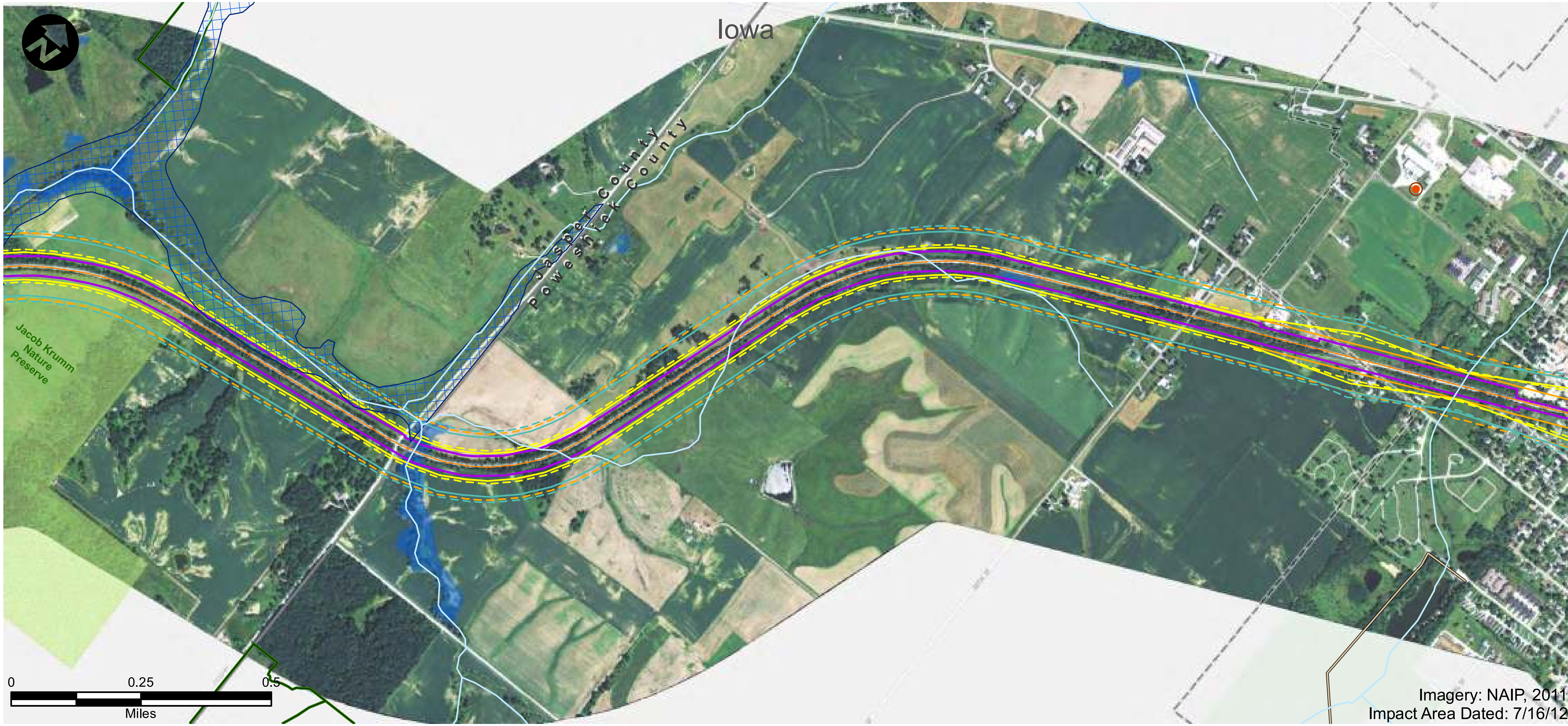

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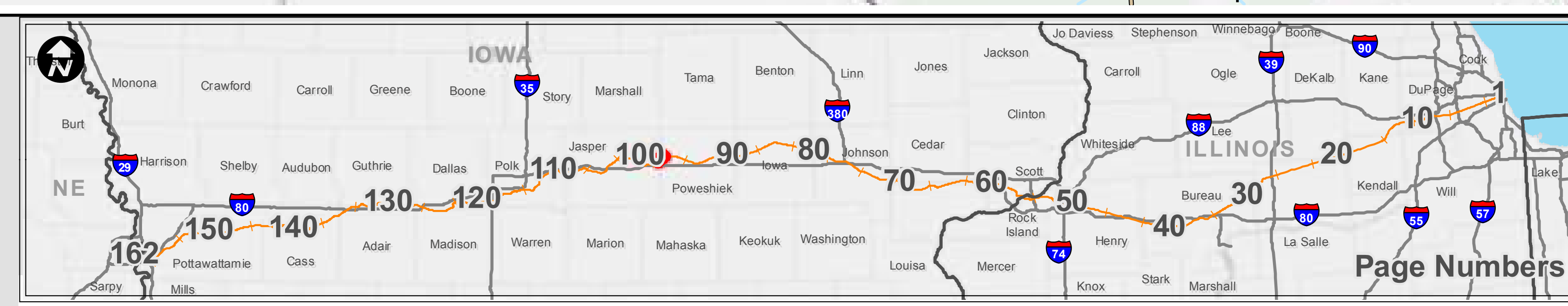

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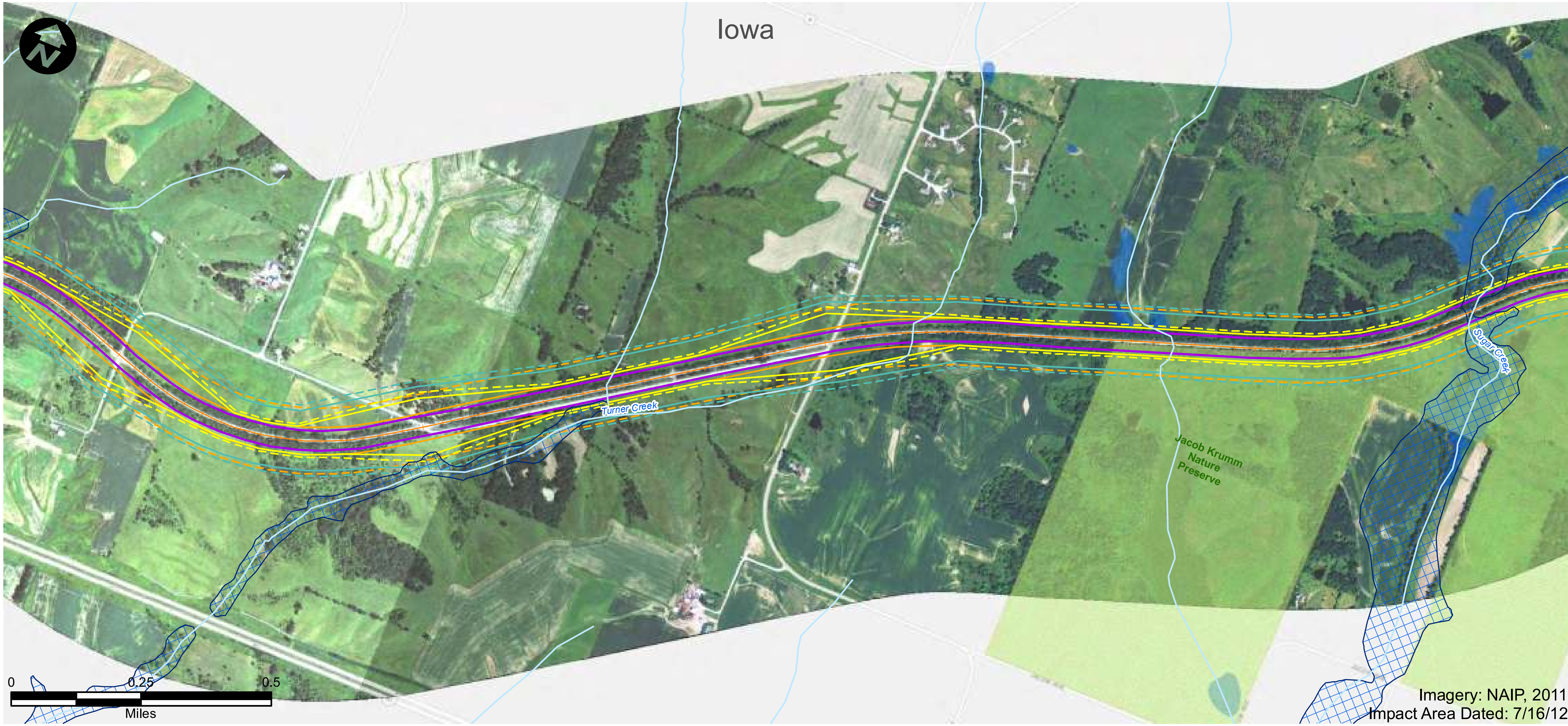

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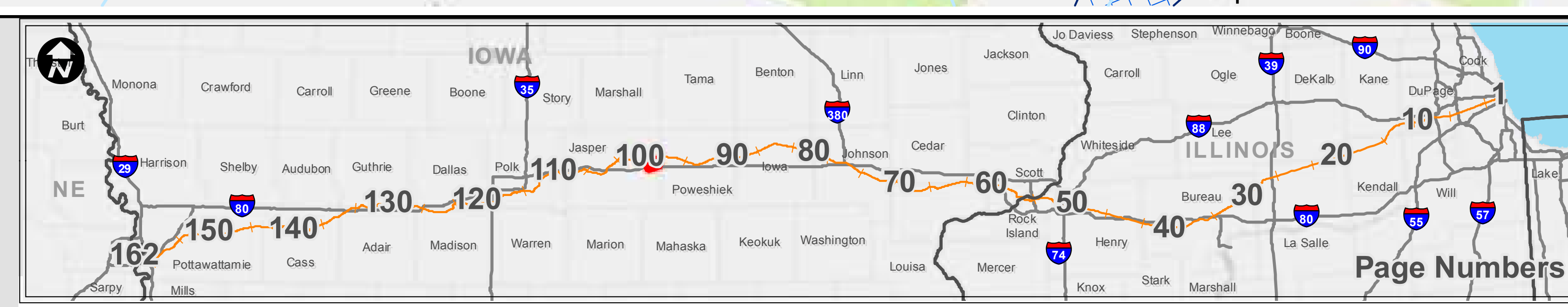

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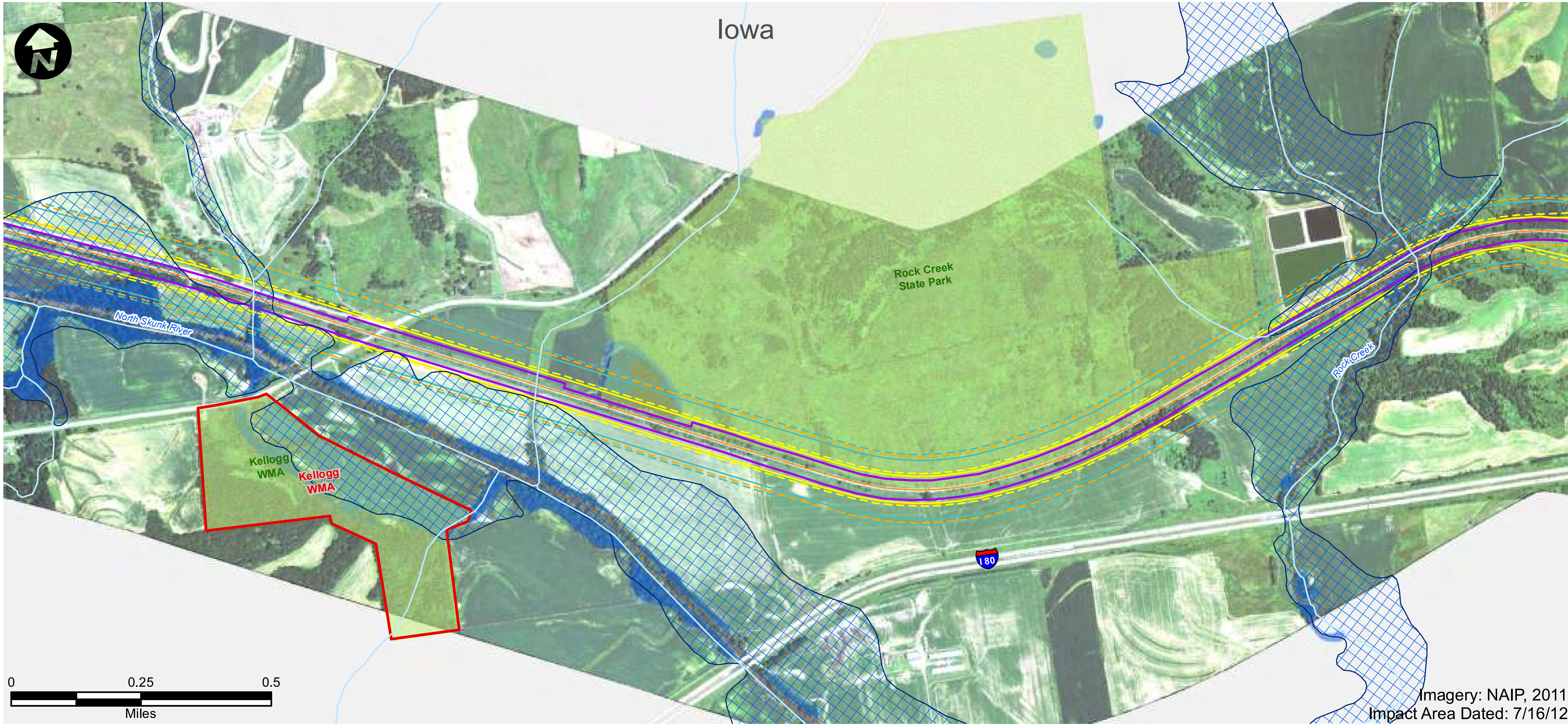

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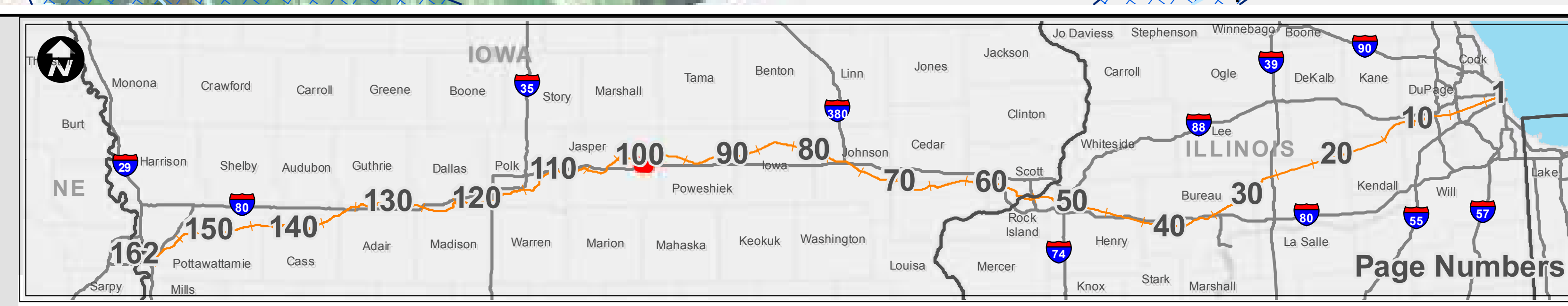

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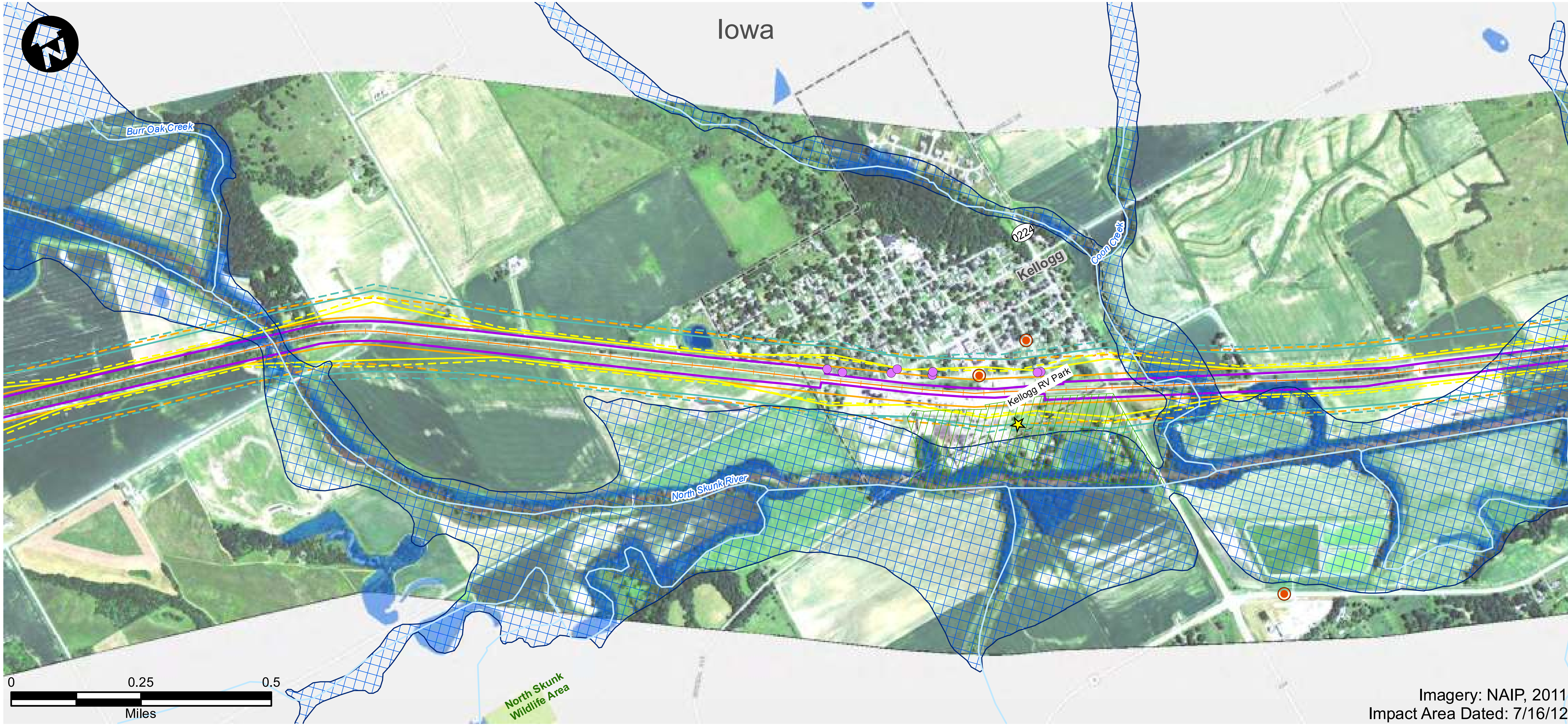

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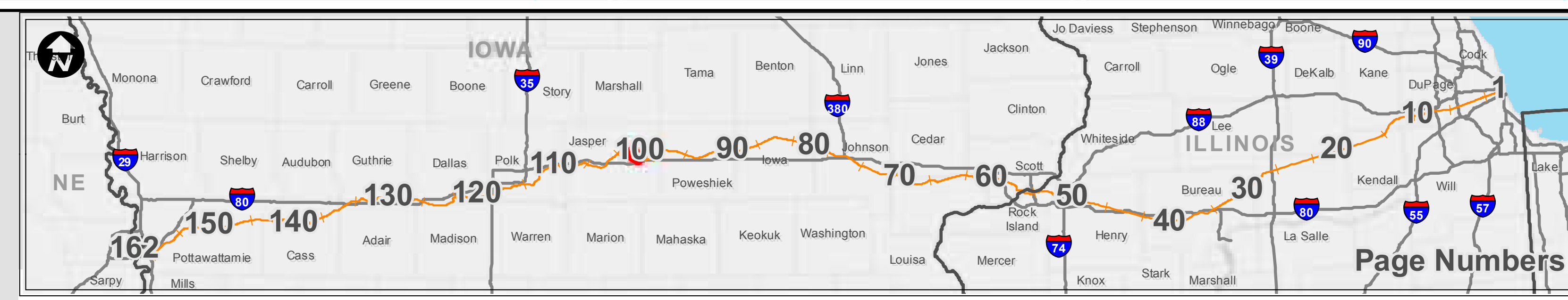

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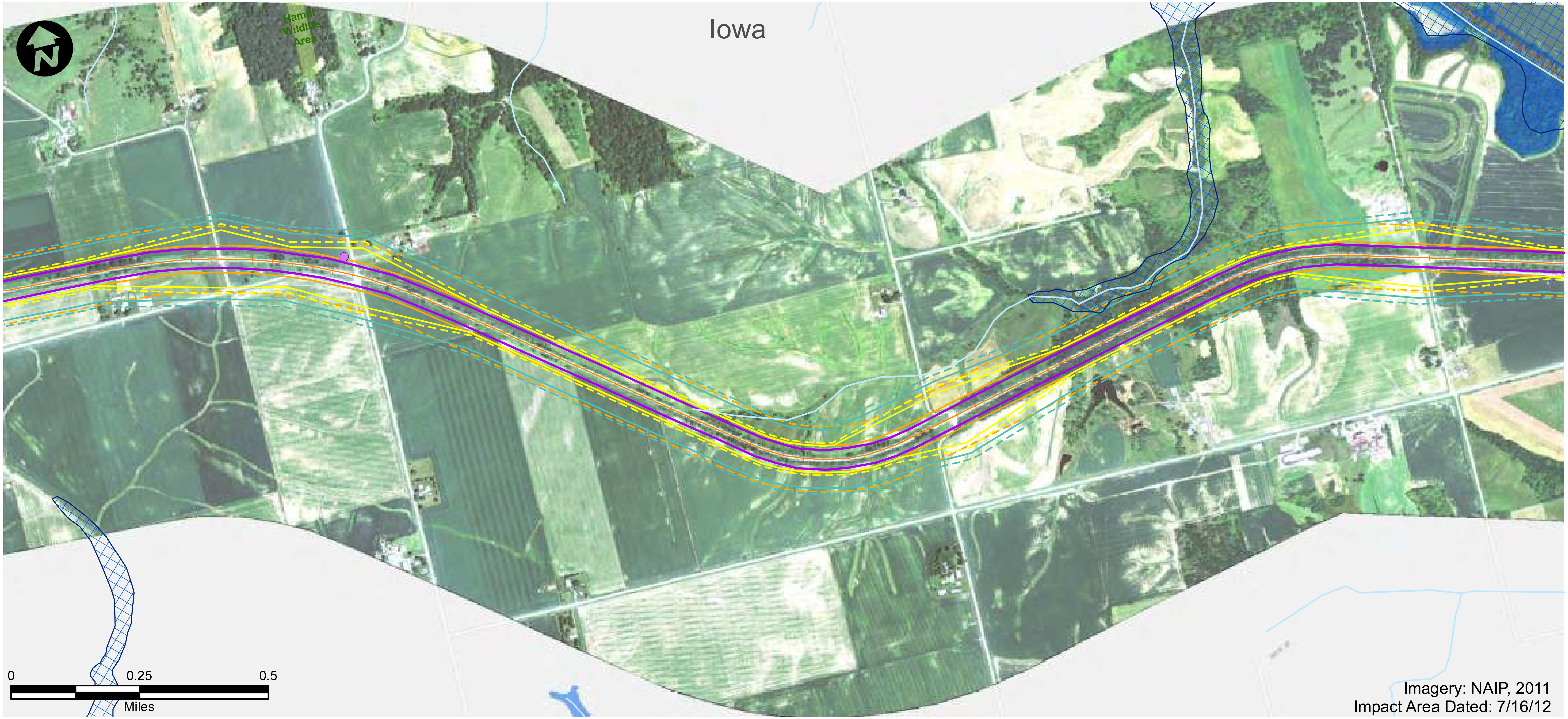

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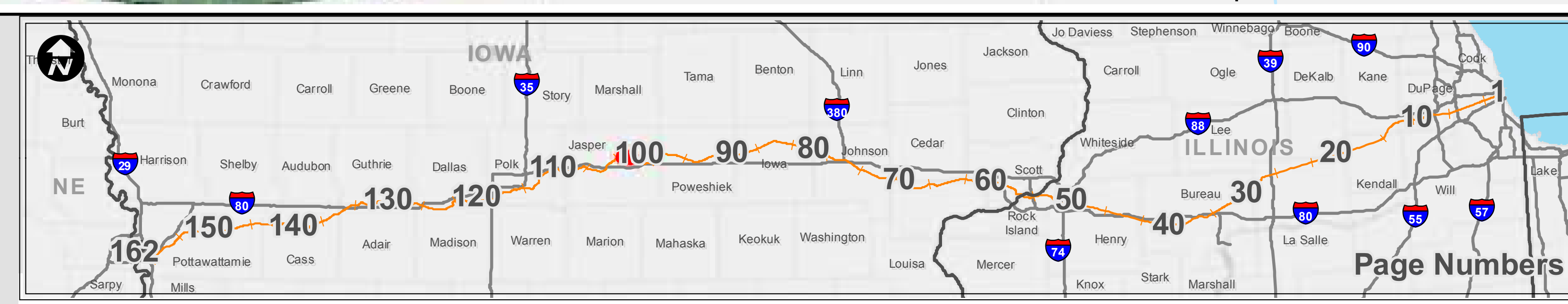

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Route Alternative		Recreation Area		USFWS Land	
Potential Impact Area		Existing Severe Level Noise		IA Prairies	
Streams		Future Severe Level Noise		IA Forest Stands	
Historic Sites		Existing Moderate Level Noise		IA Wildlife Management Areas	
National Priority List Sites		Future Moderate Level Noise		IL State Natural Area	
Hazardous Material Sites		Existing Vibration Contours		IL County Forest Preserves	
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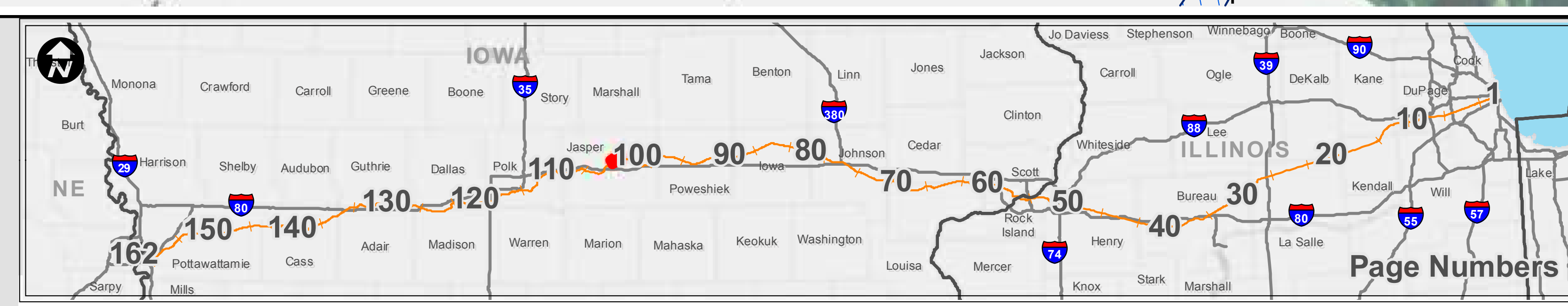
		100-Year Floodplain			



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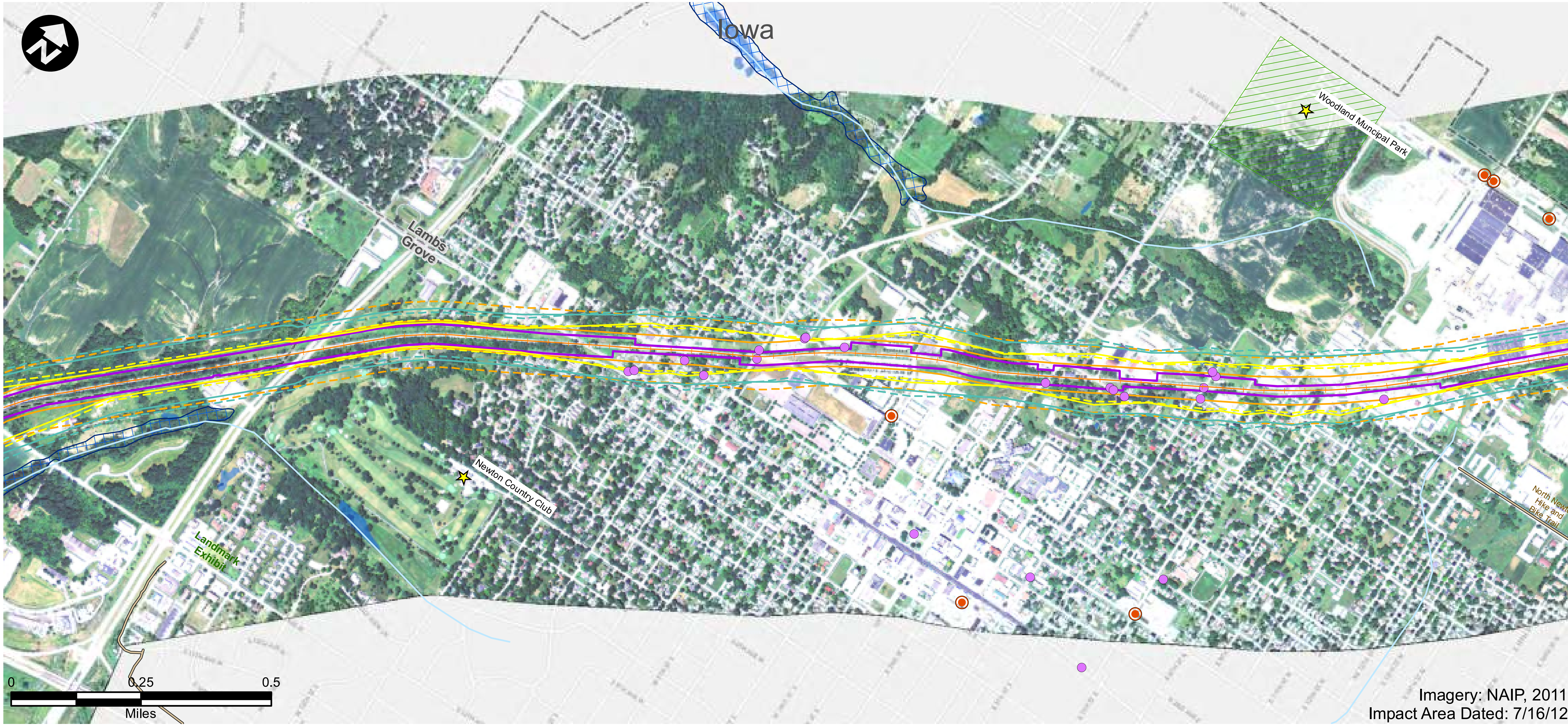

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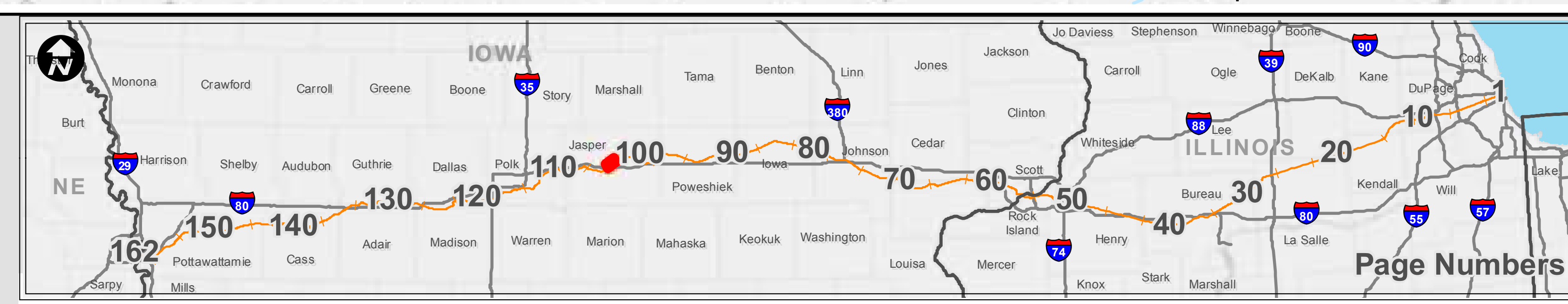
Existing Vibration Contours
Future Vibration Contours
NWI Wetland (PAB~, PEM~, PFO, and PSS~)
NWI Lake or Pond
100-Year Floodplain
USFWS Land
IA Prairies
IA Forest Stands
IA Wildlife Management Areas
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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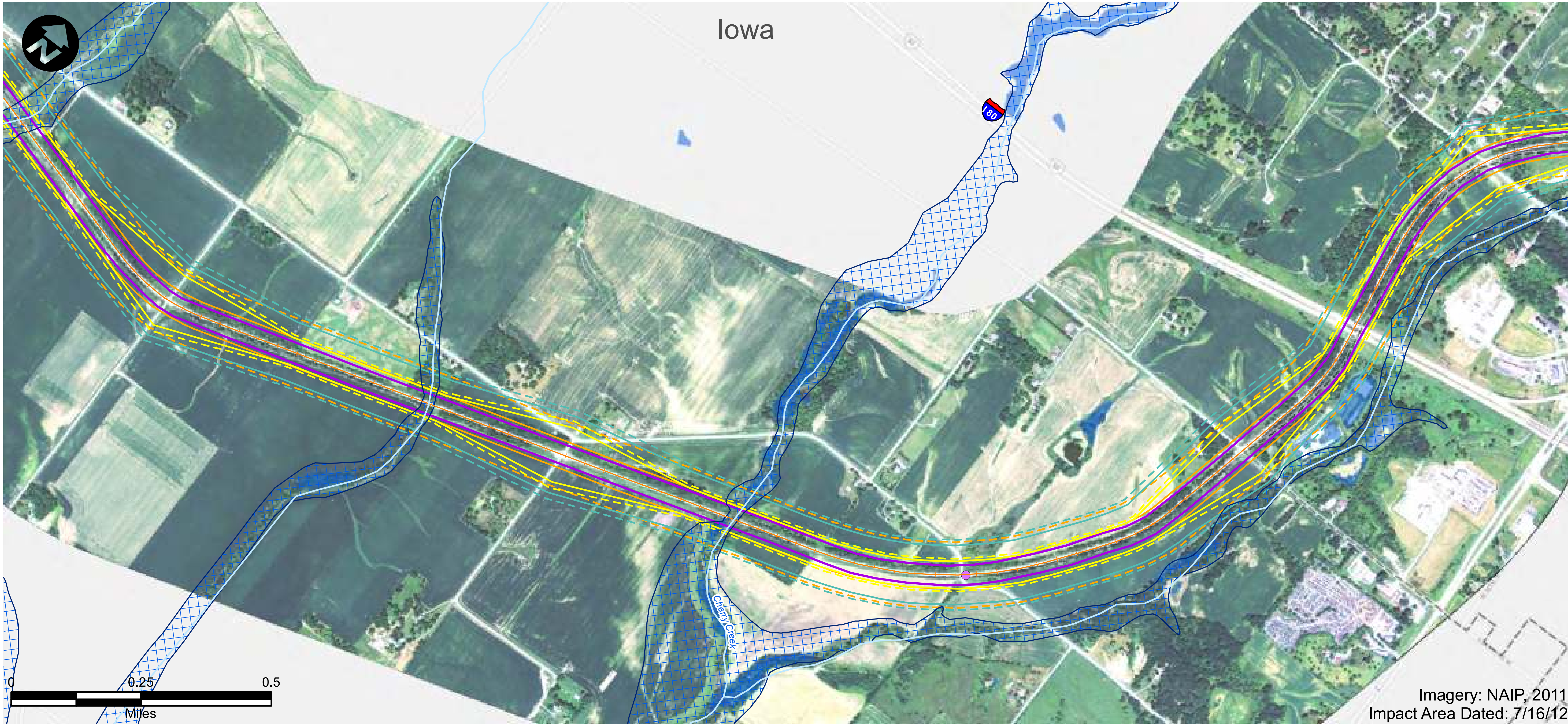

- Route Alternative
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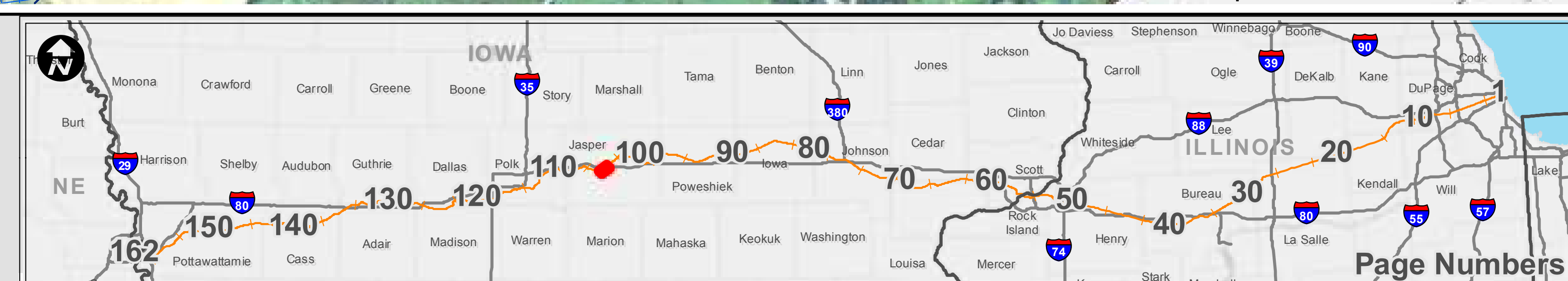

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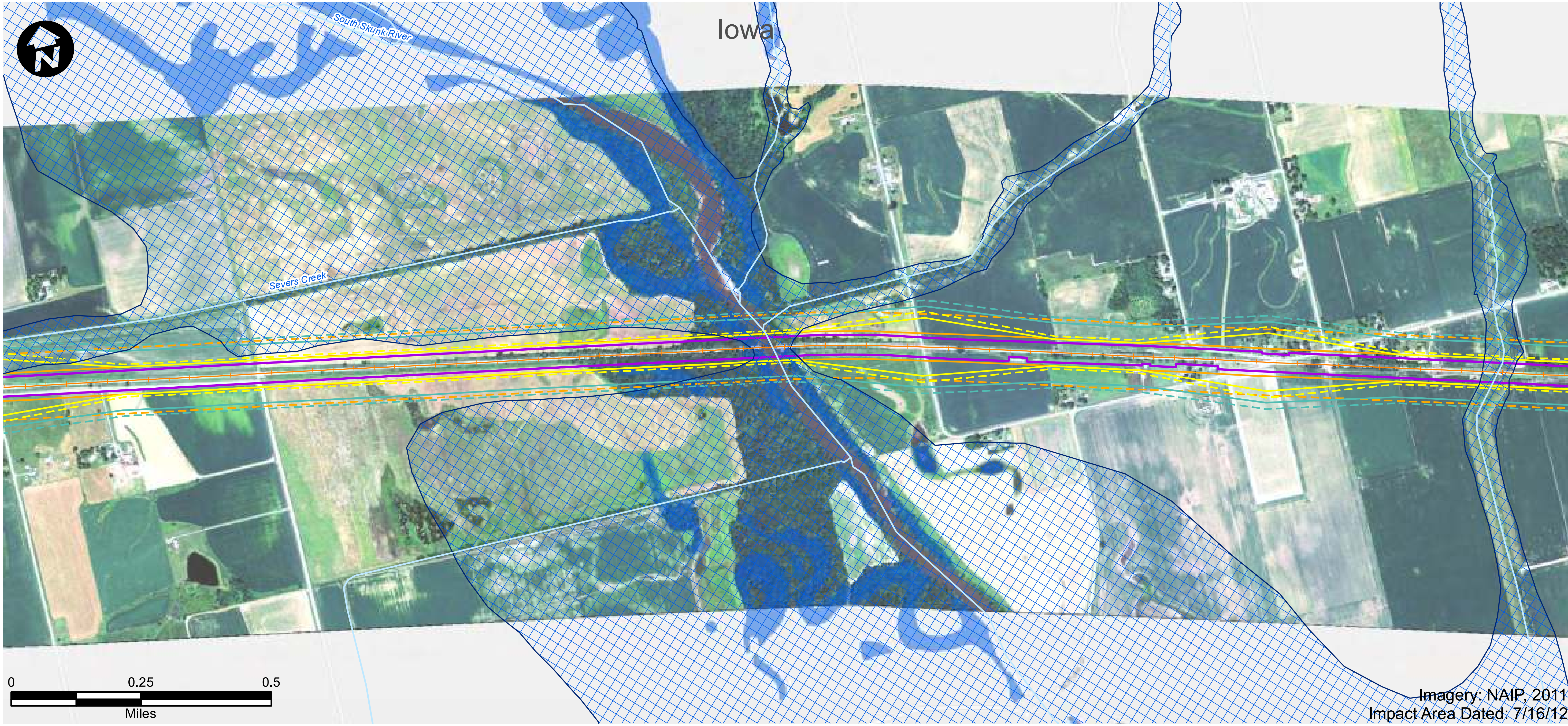

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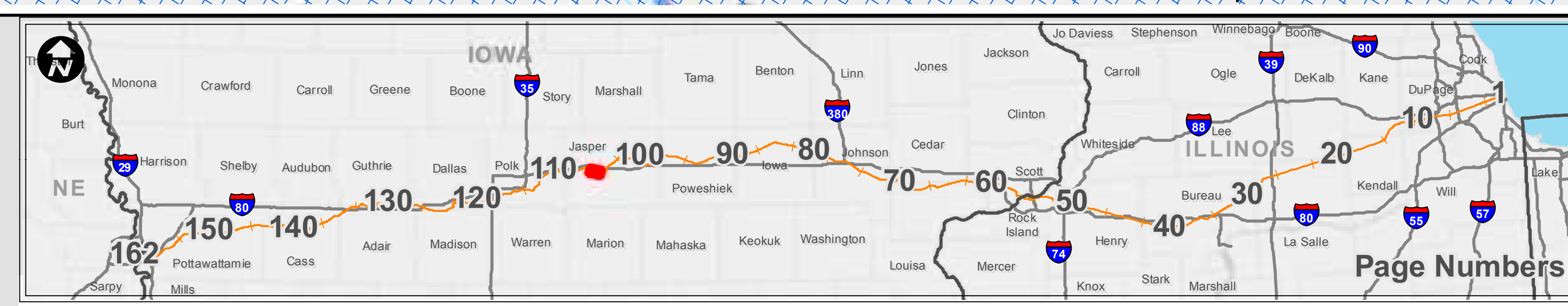

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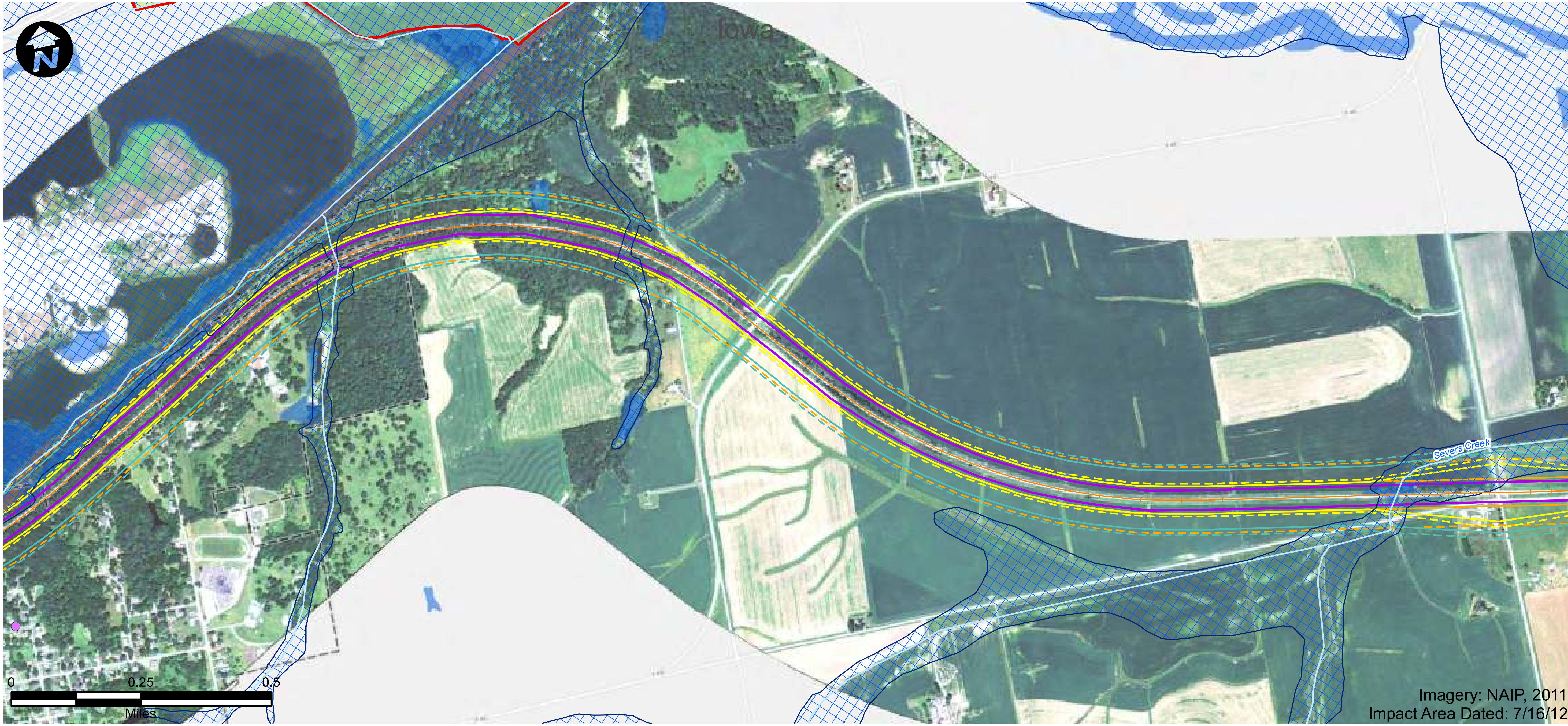

Route Alternative
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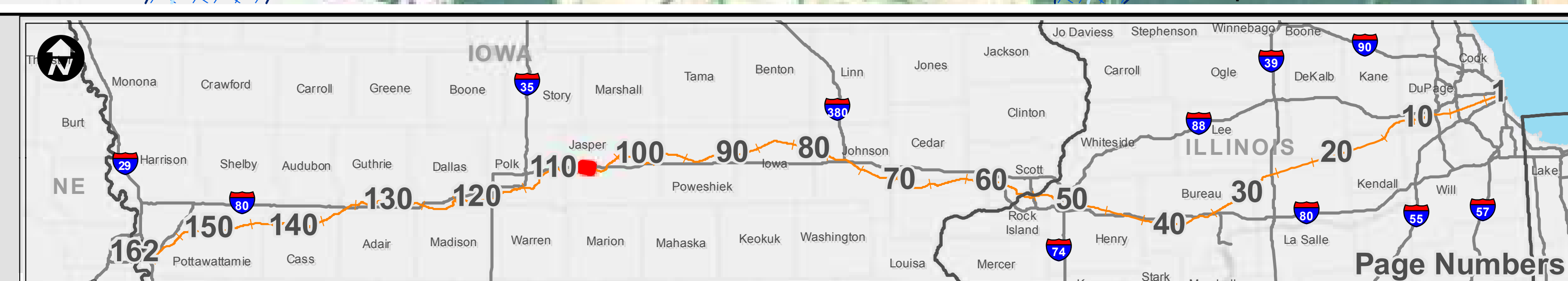

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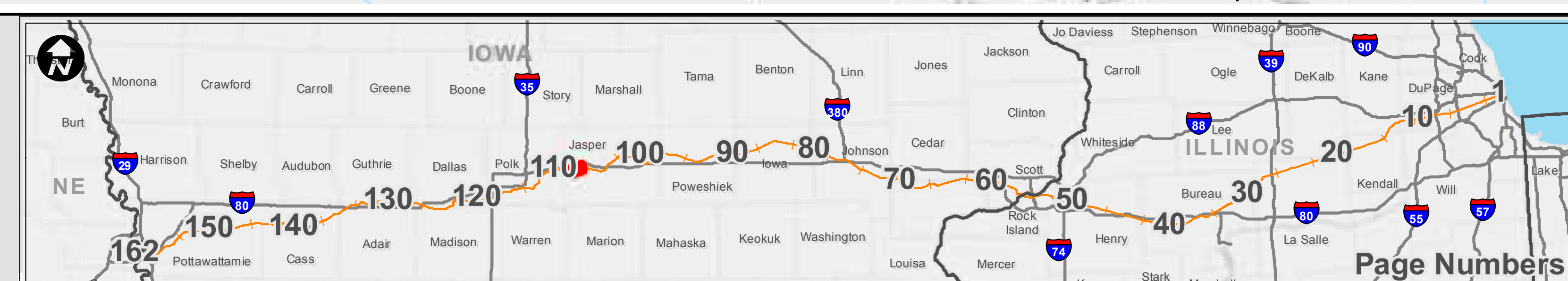

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APPENDIX B

CHAPTER 3 FIGURES

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COLFAX, IOWA TO OMAHA, NEBRASKA

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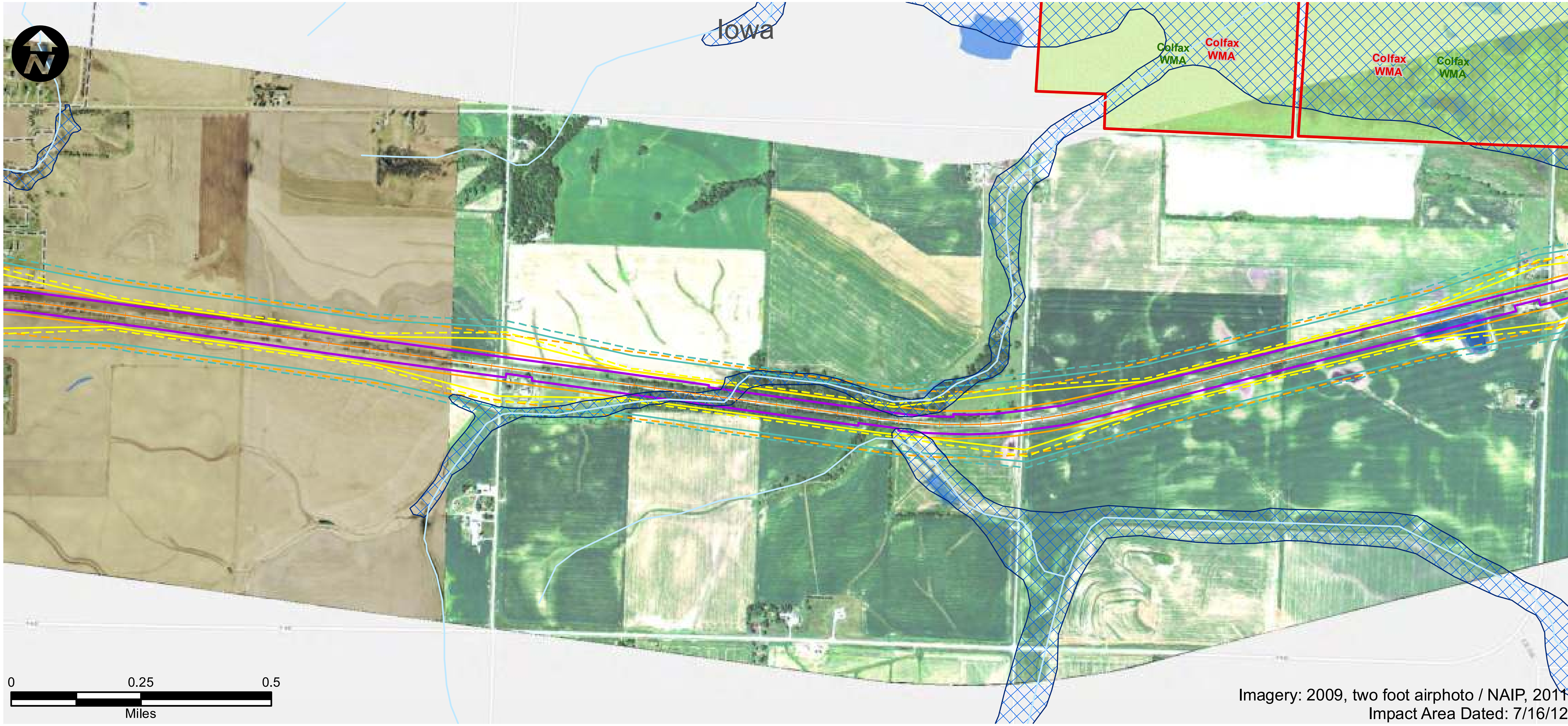

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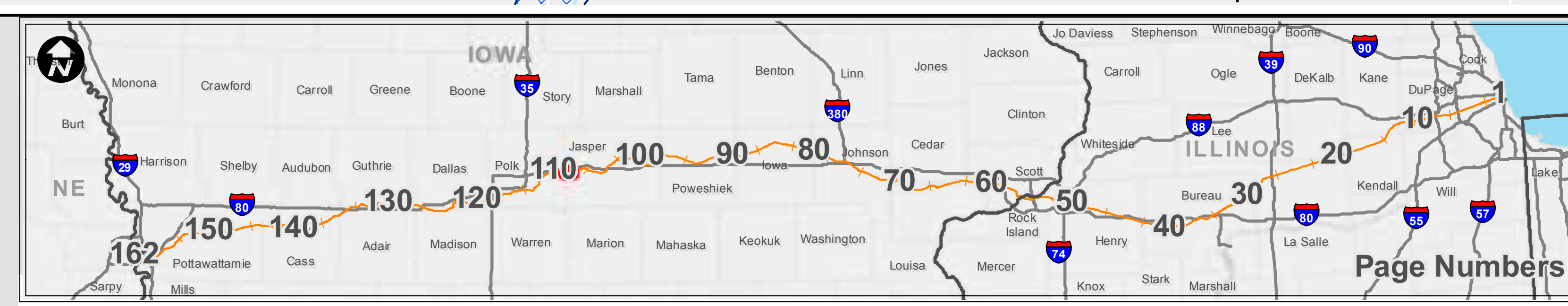

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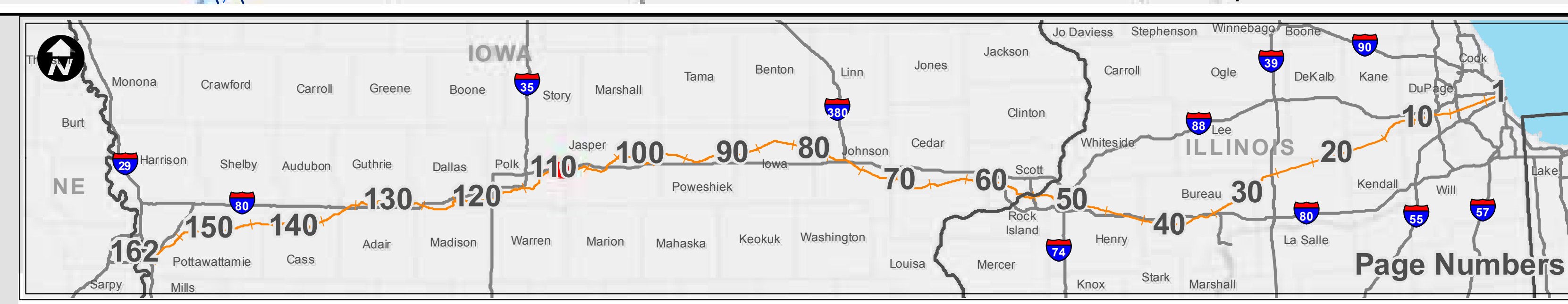

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- Route Alternative
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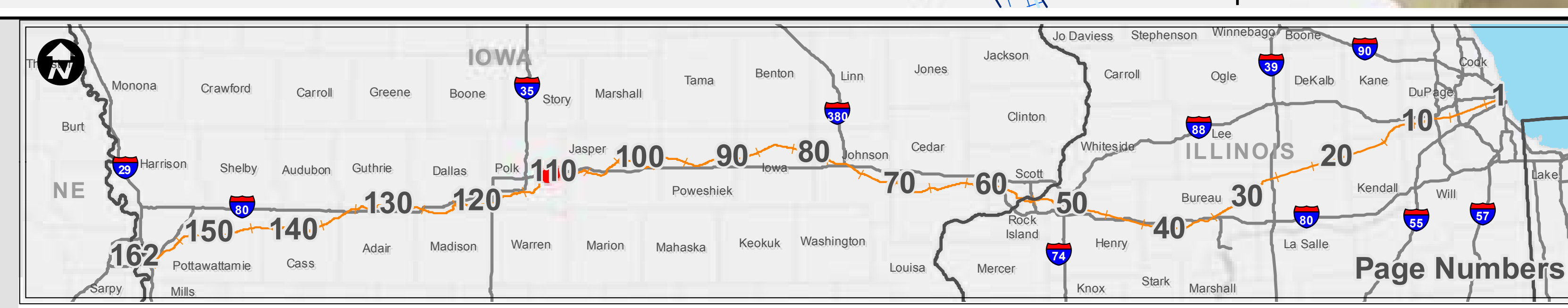

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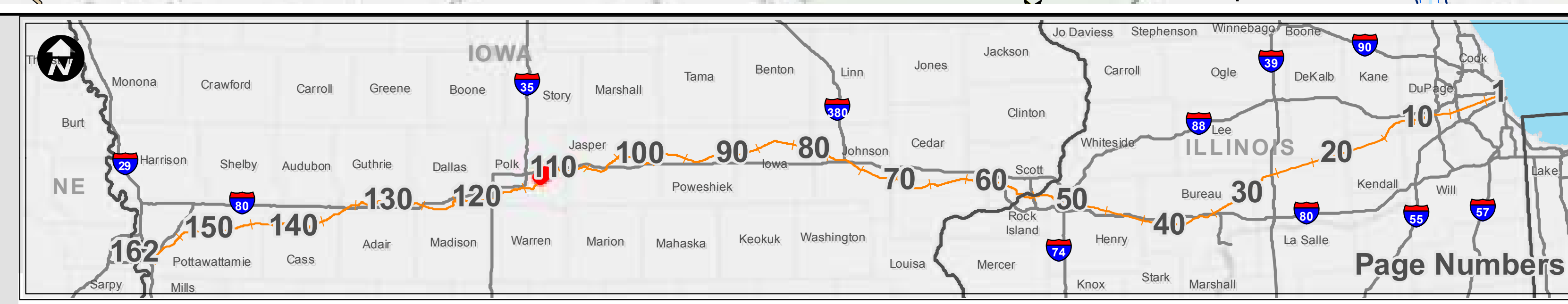

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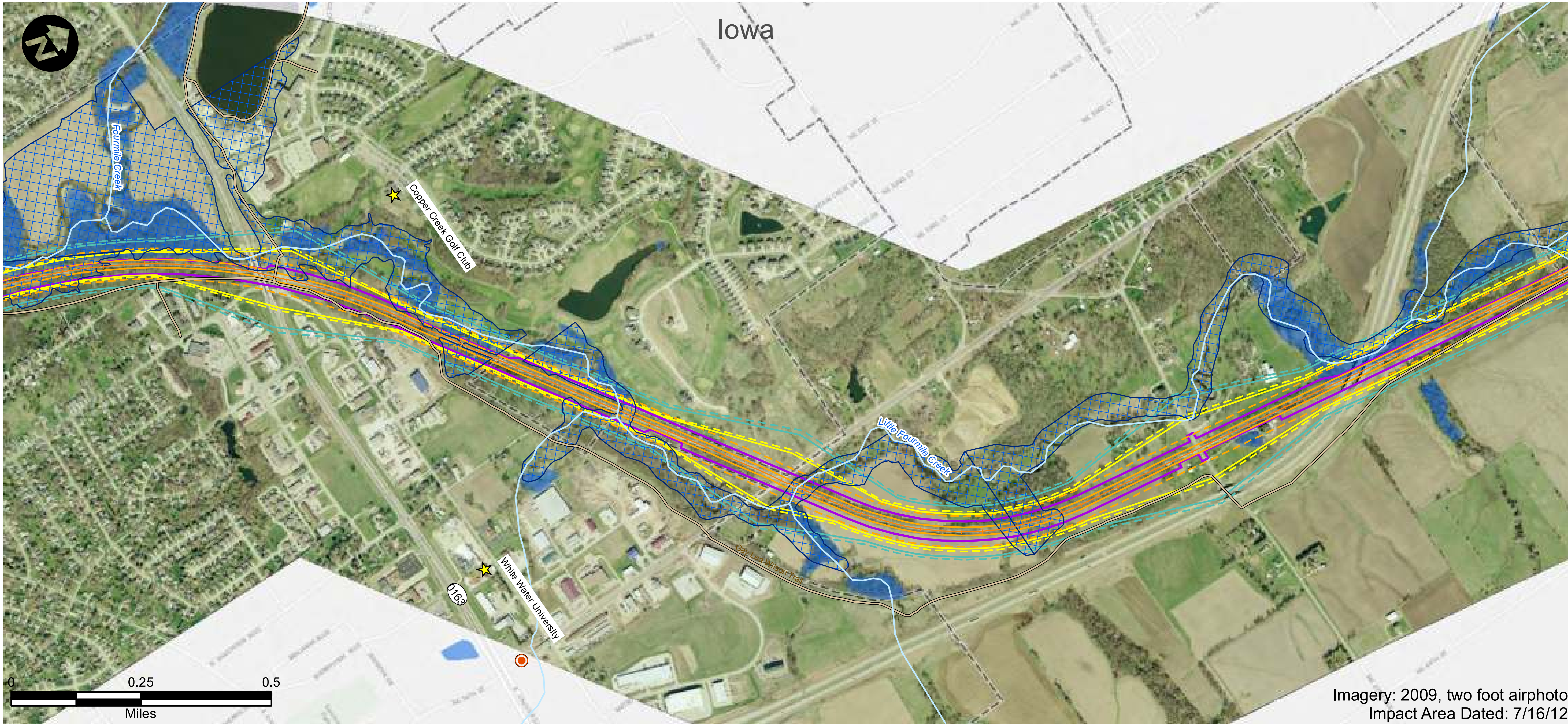

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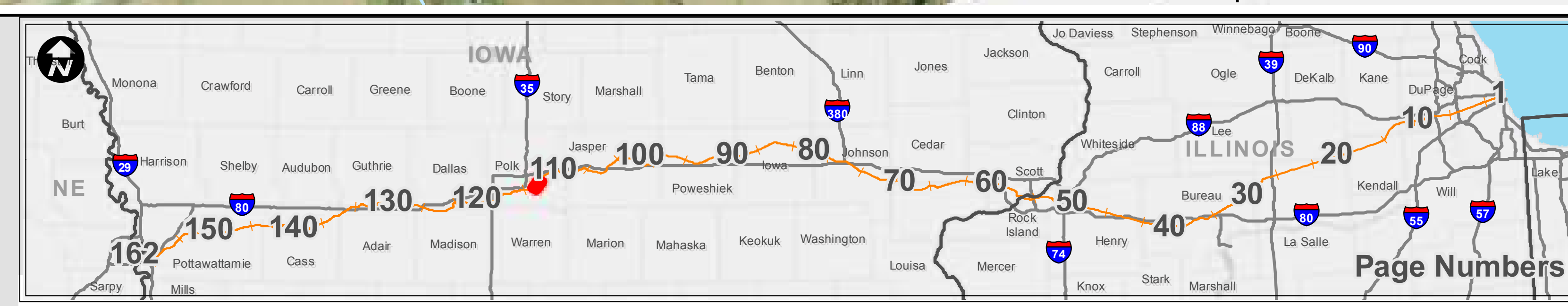

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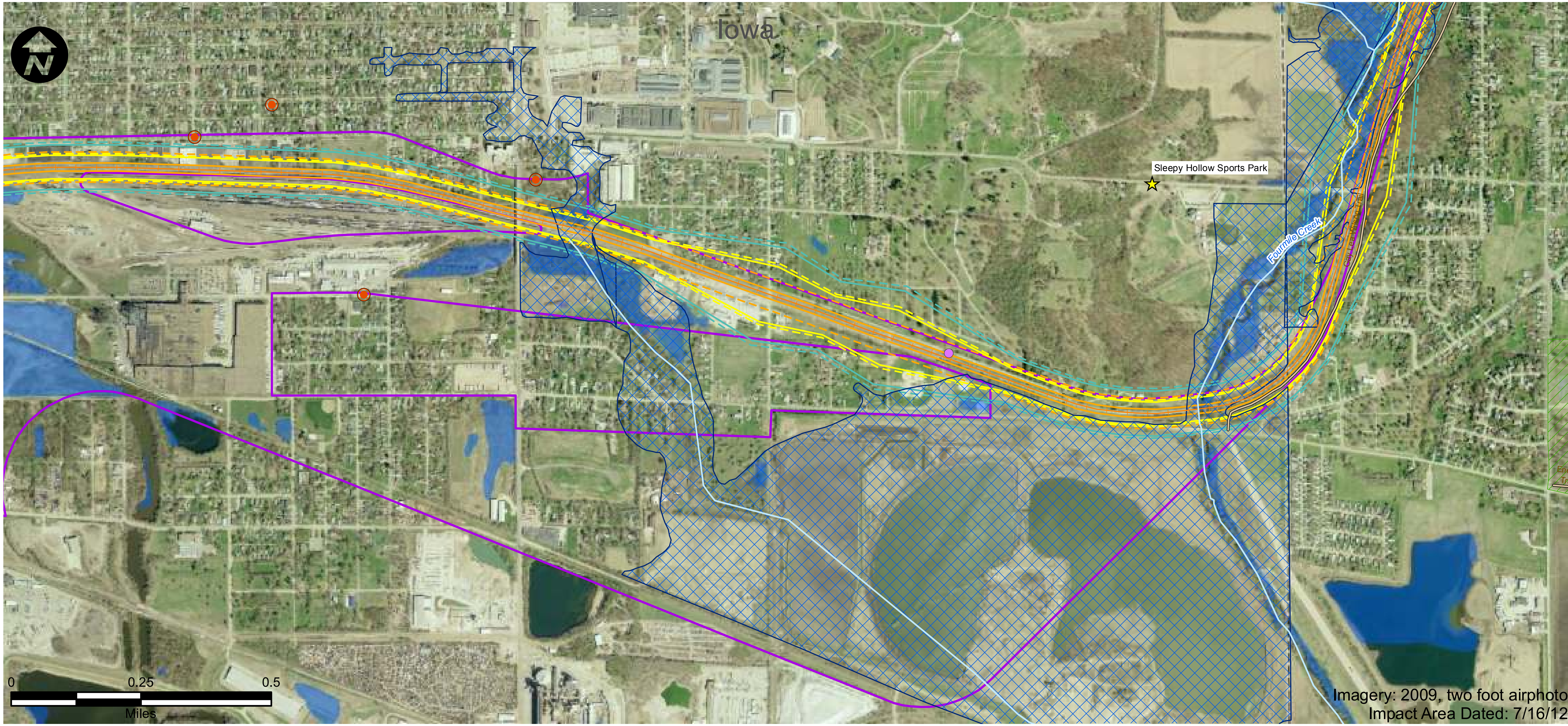

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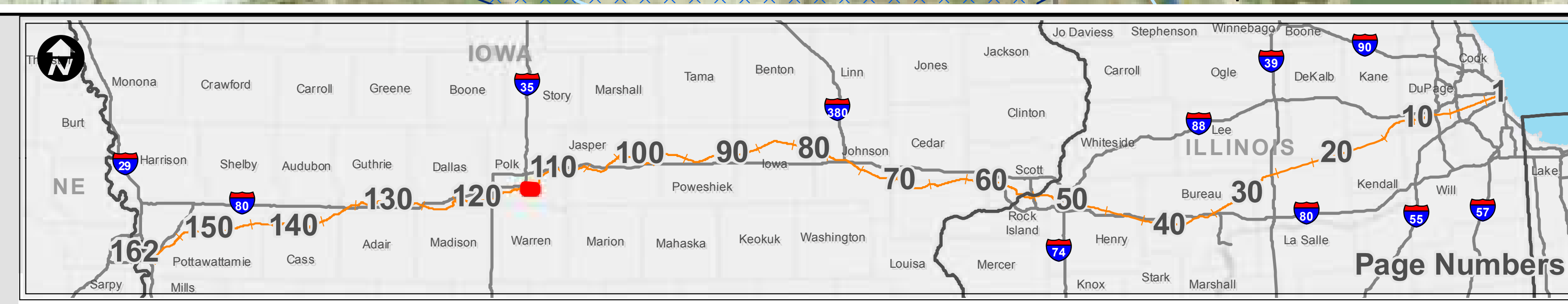

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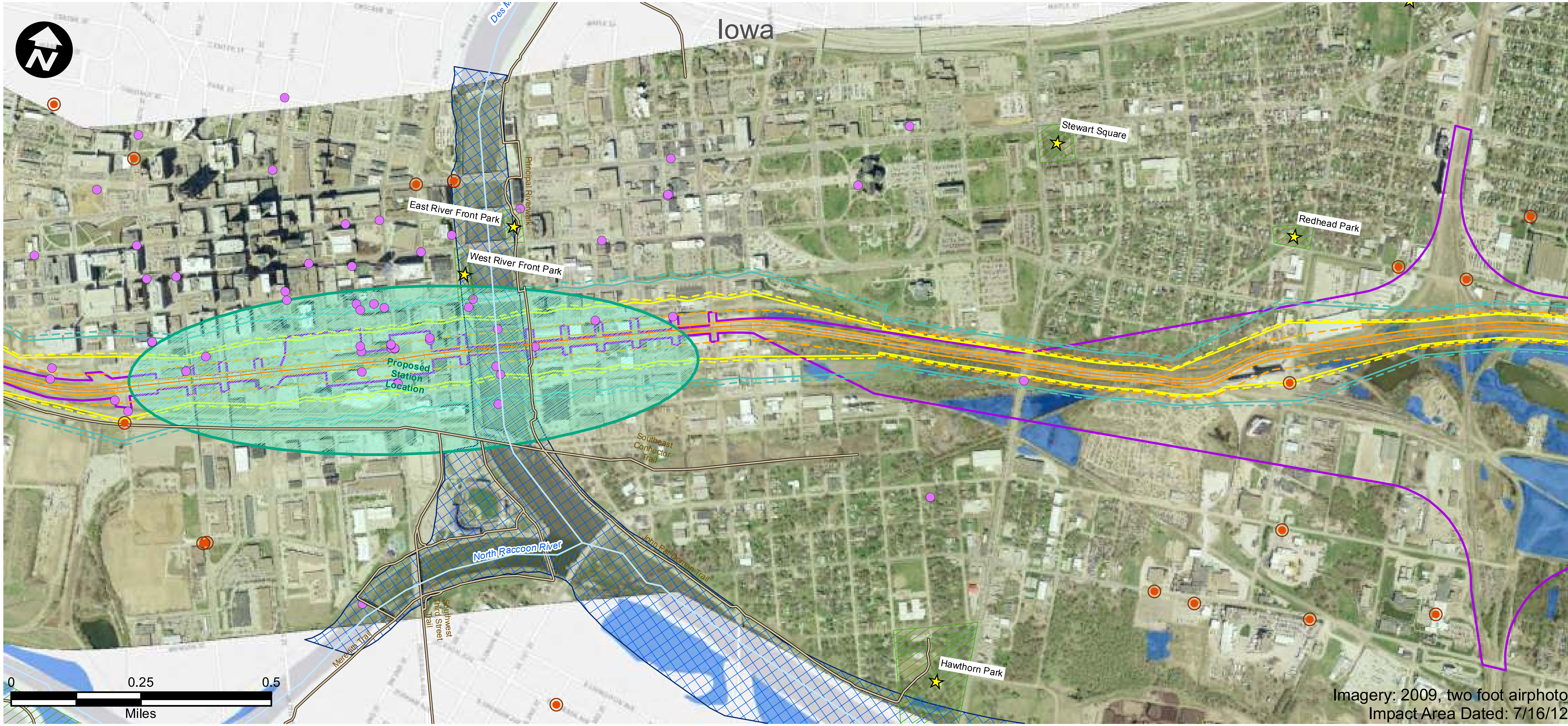

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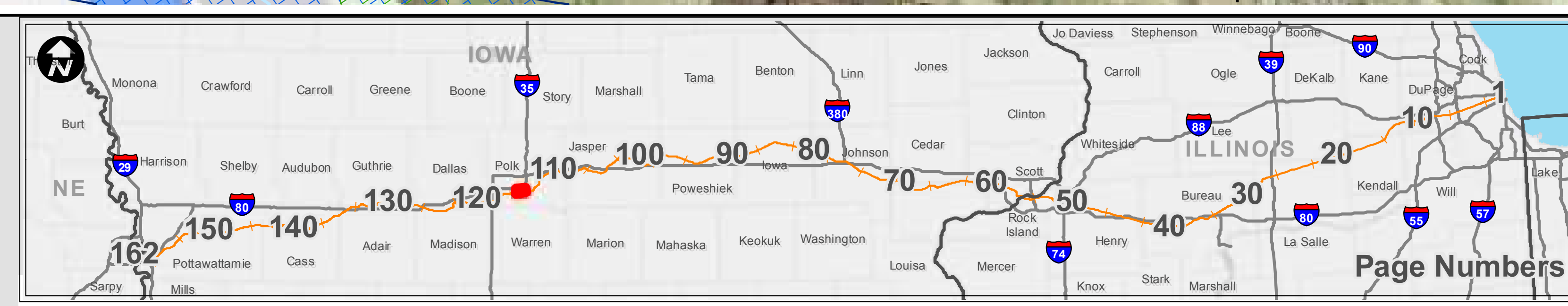

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Route Alternative
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Streams
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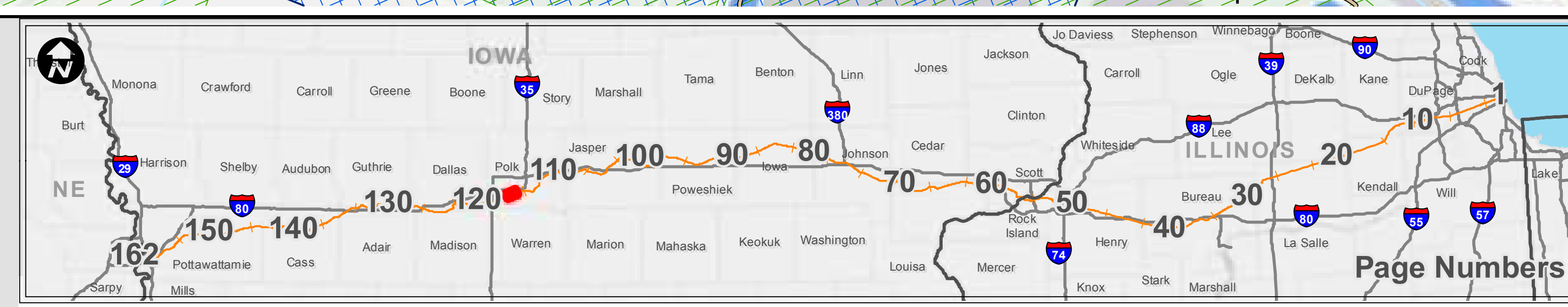

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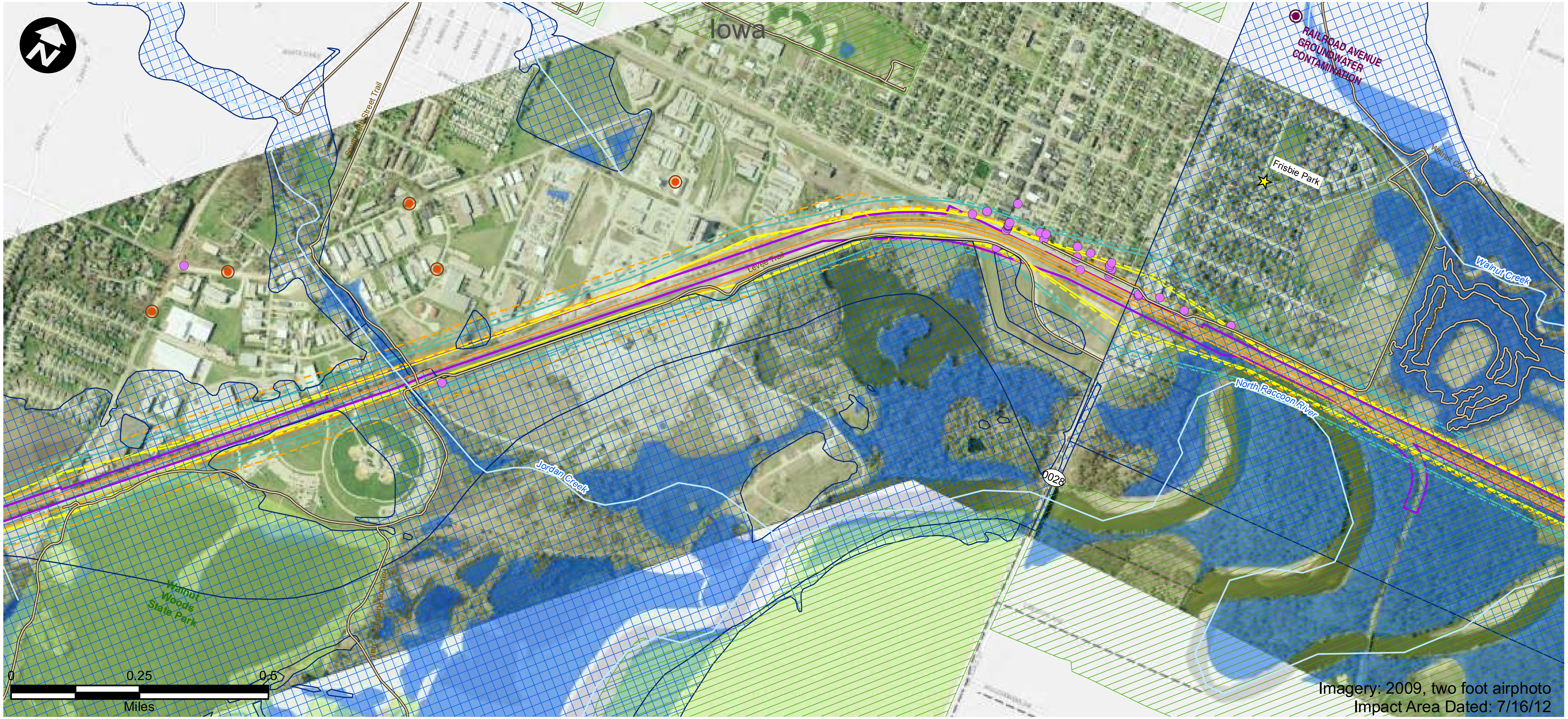

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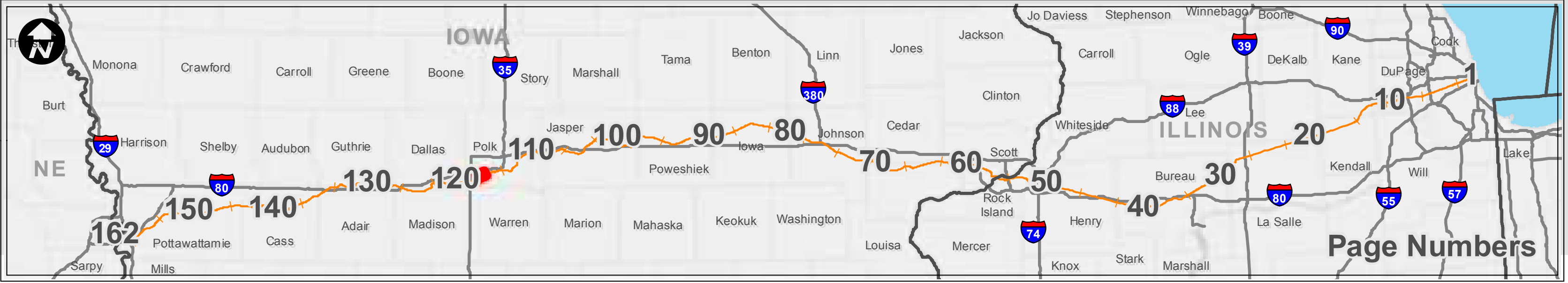

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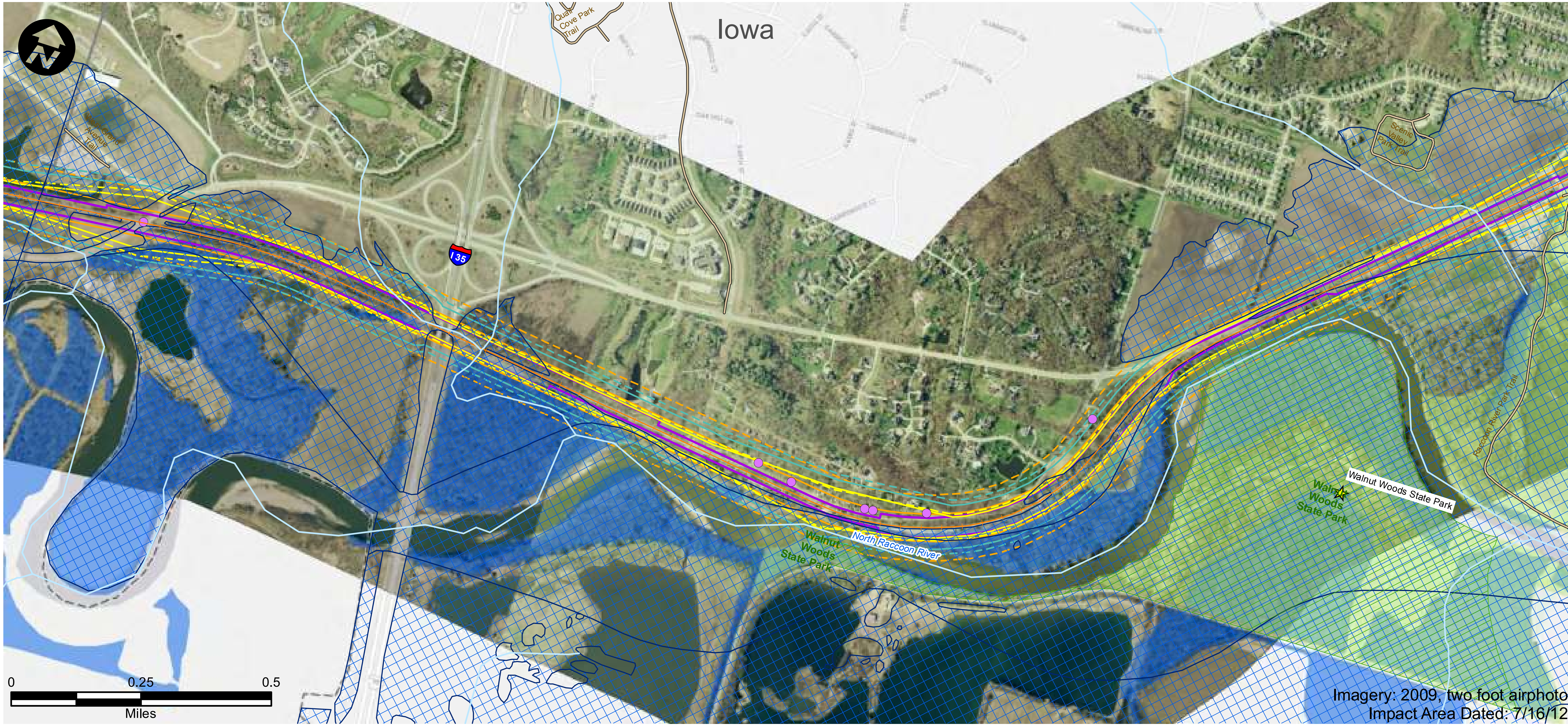

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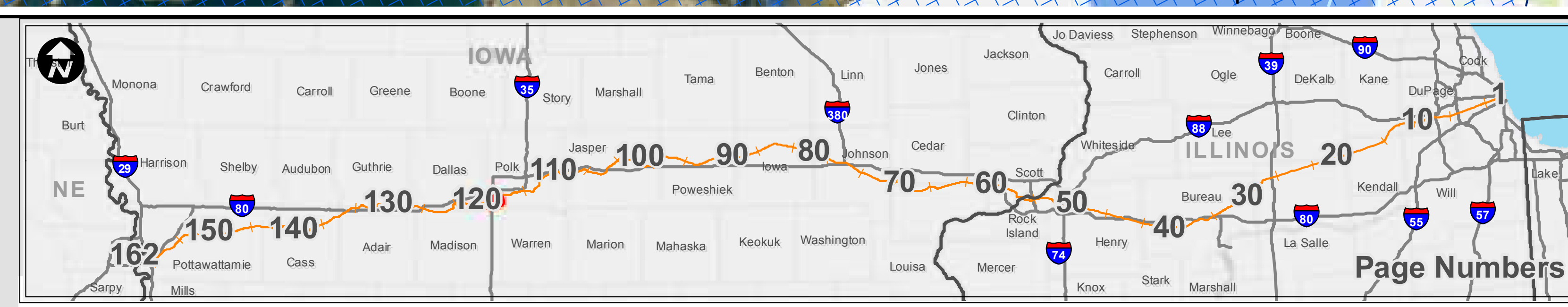

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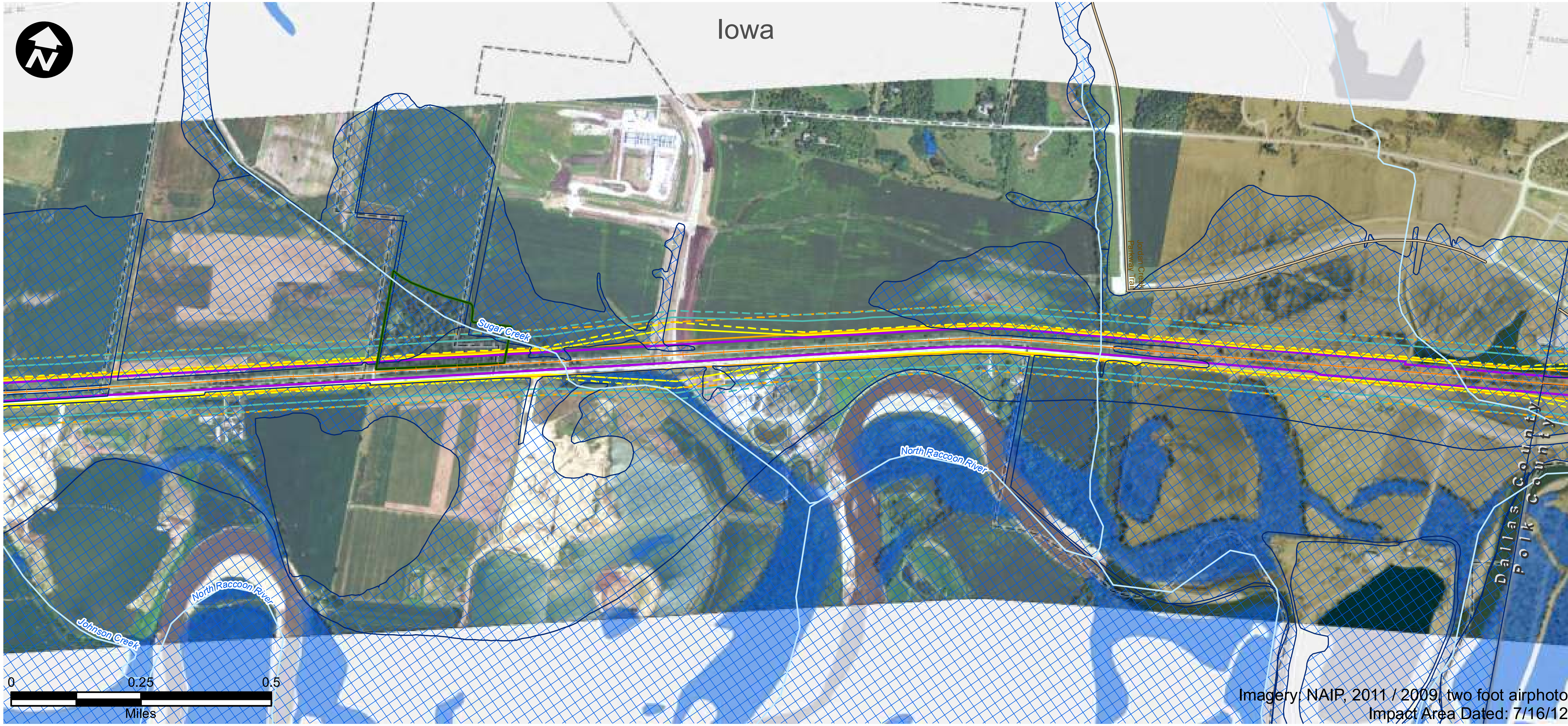

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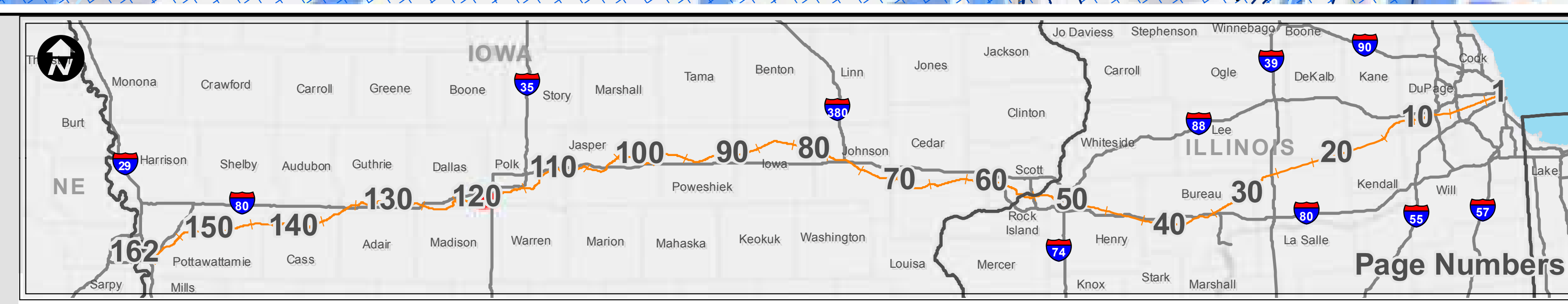

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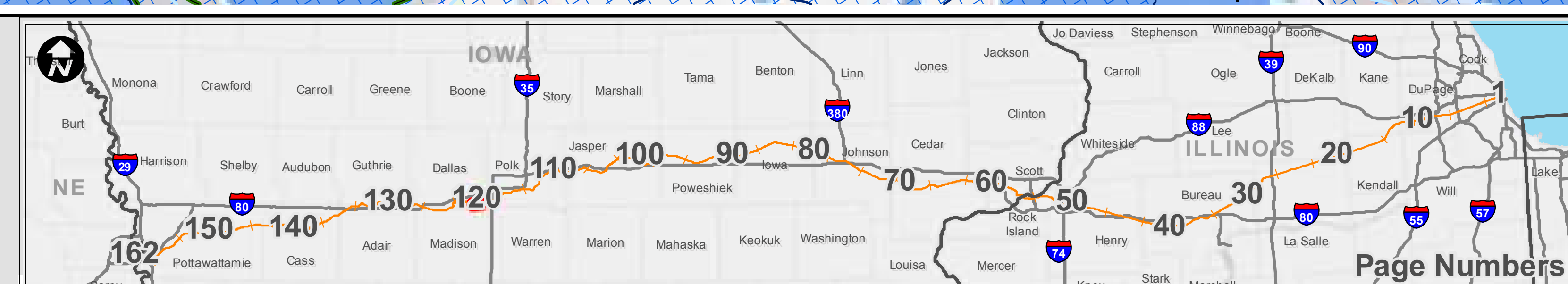

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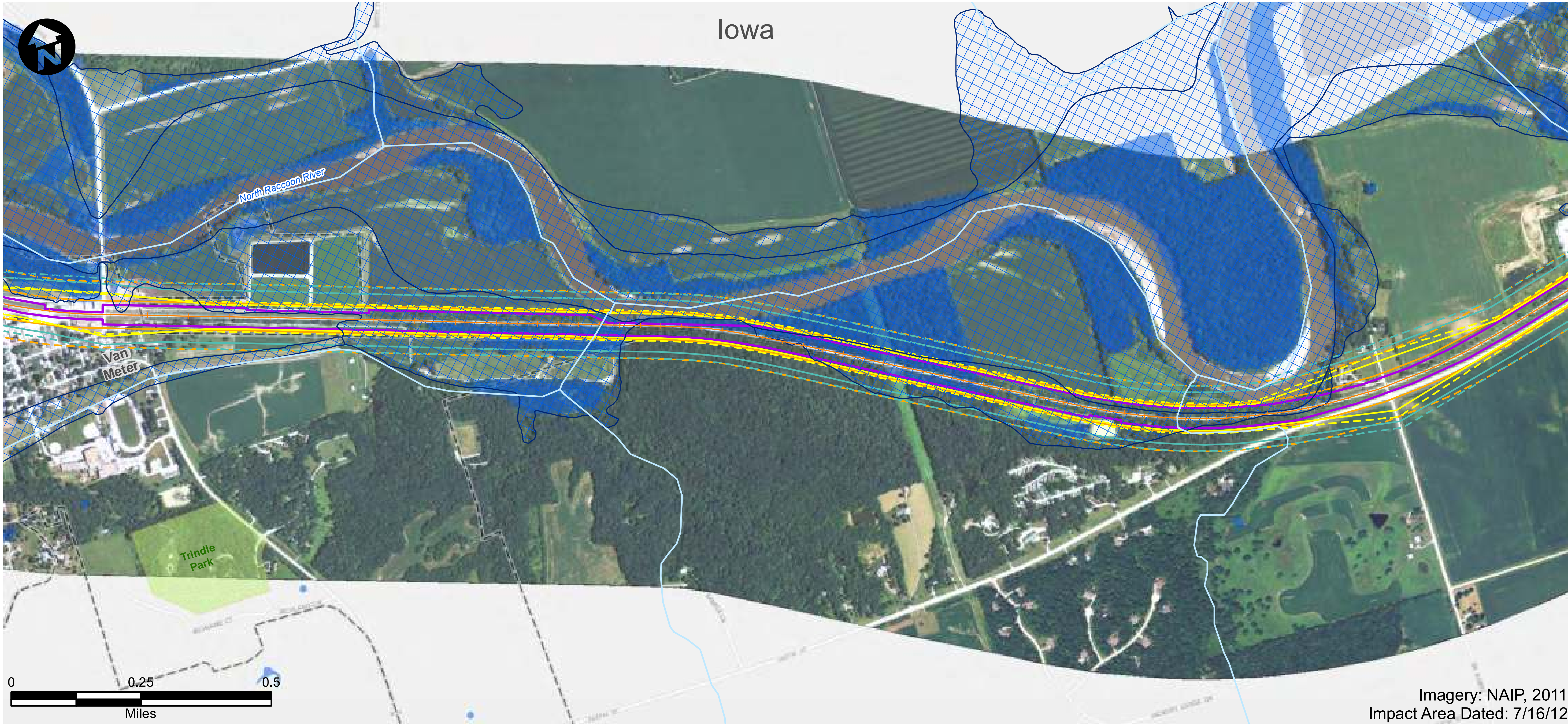

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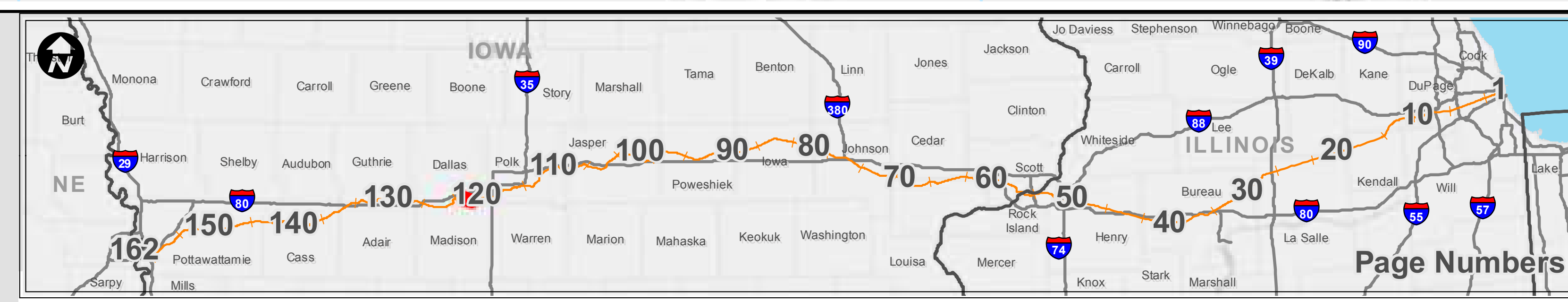

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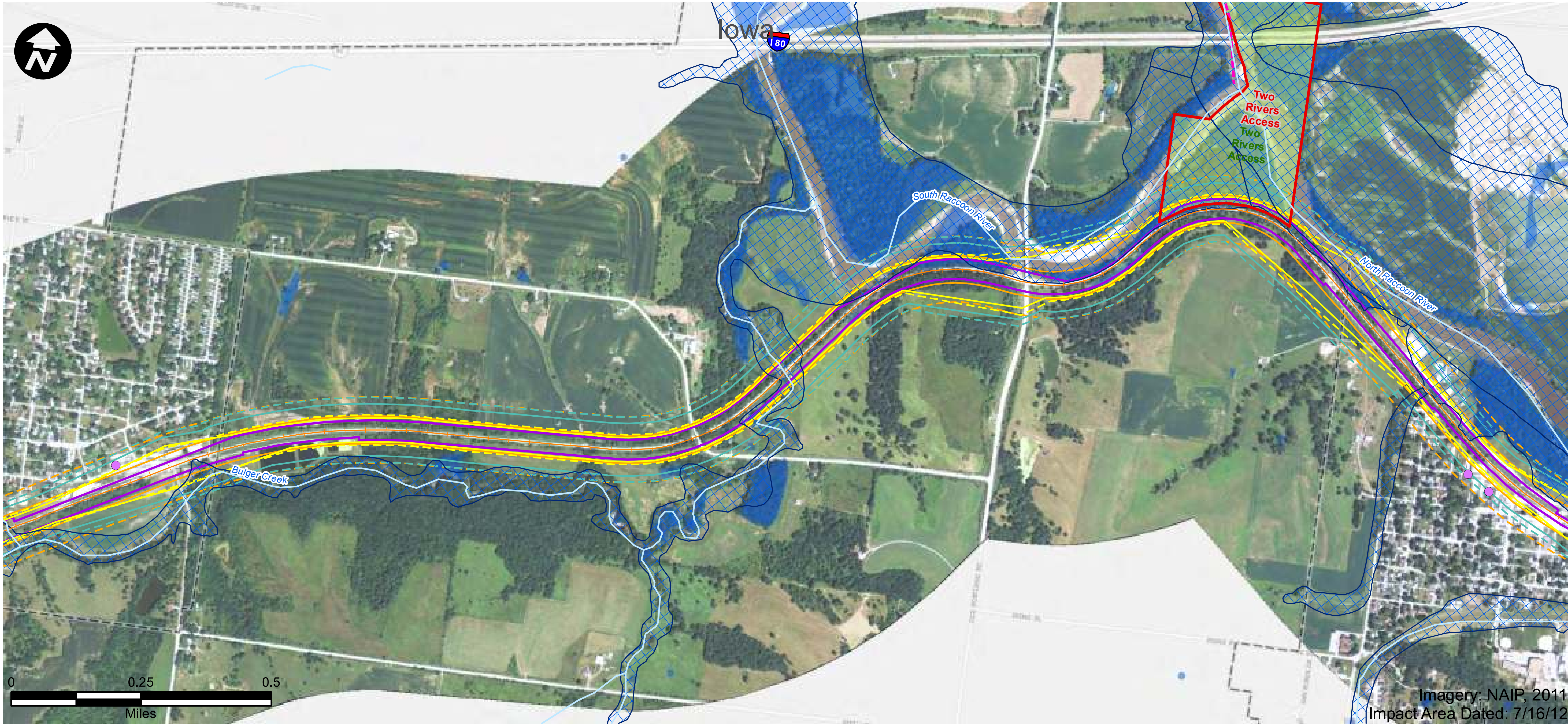

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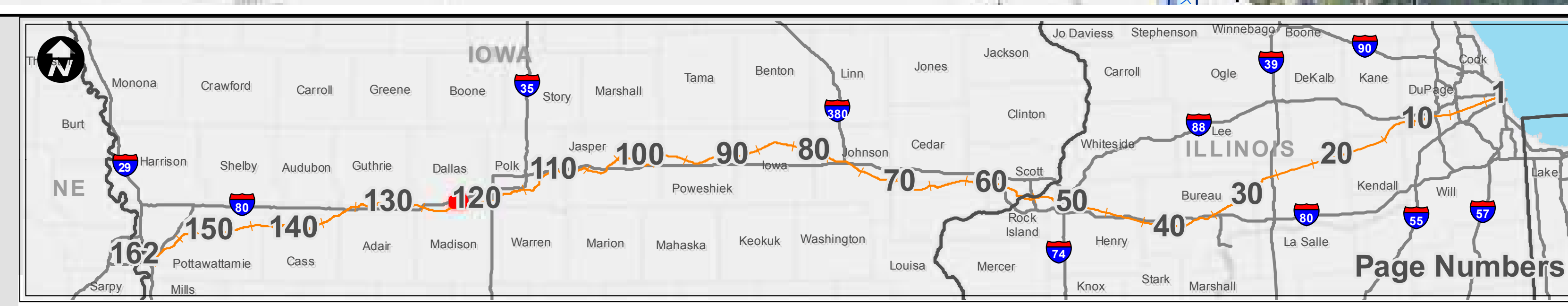

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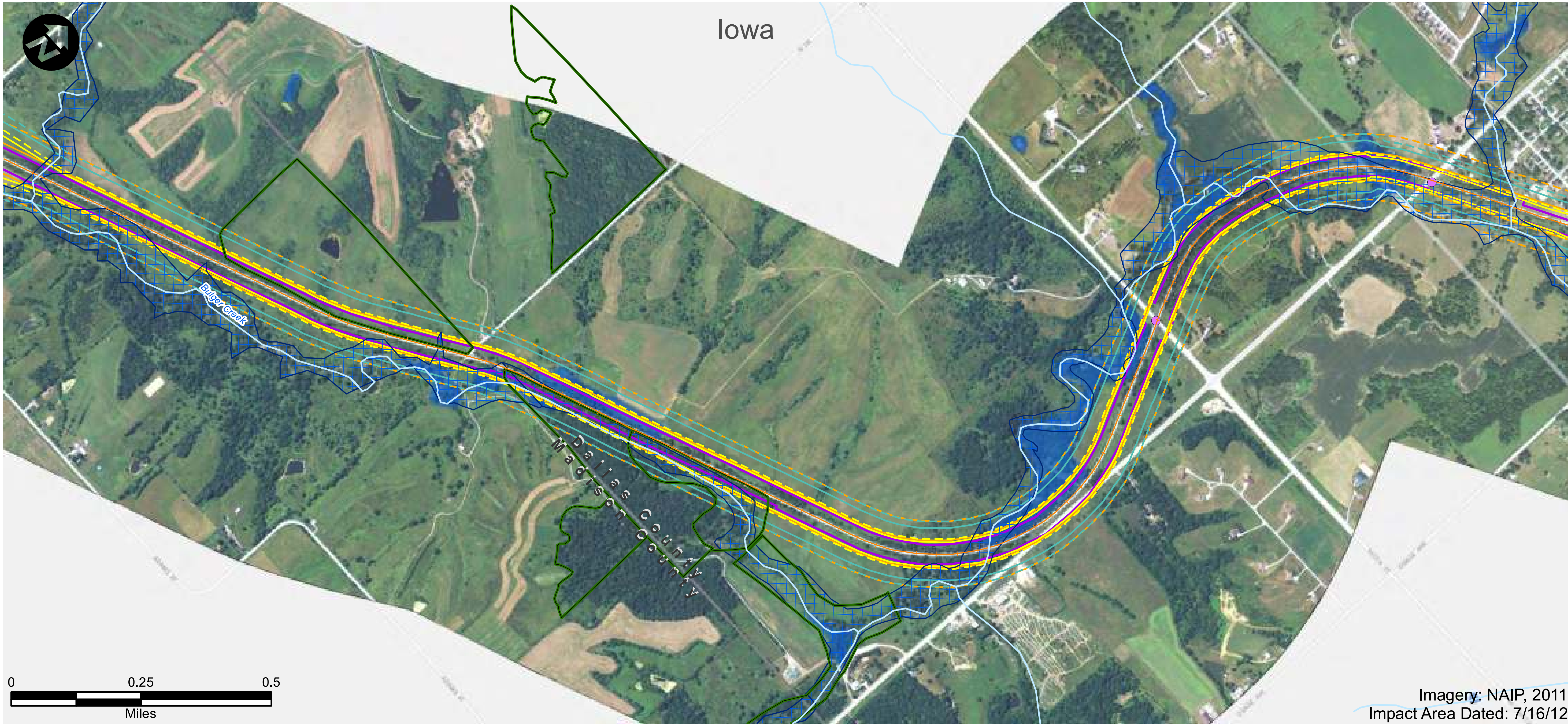

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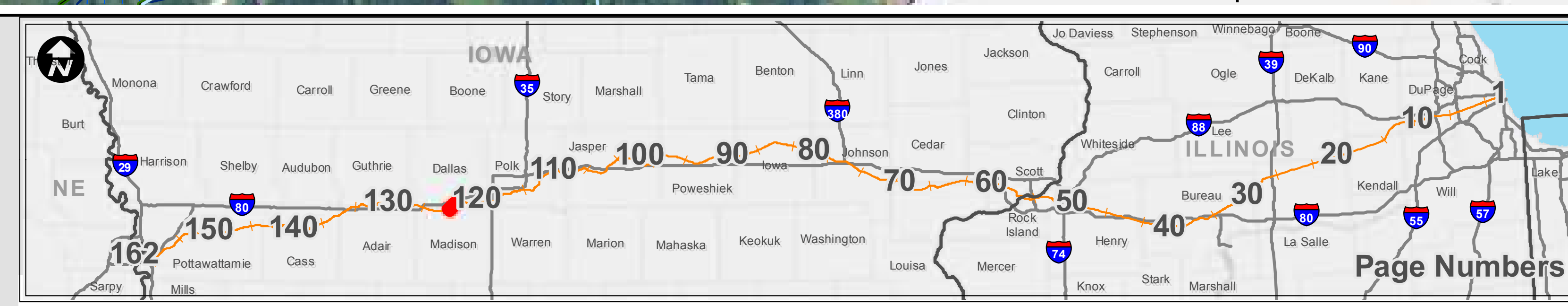
Existing Vibration Contours
Future Vibration Contours
NWI Wetland *(PAB~, PEM~, PFO, and PSS~)*
NWI Lake or Pond
100-Year Floodplain
USFWS Land
IA Prairies
IA Forest Stands
IA Wildlife Management Areas
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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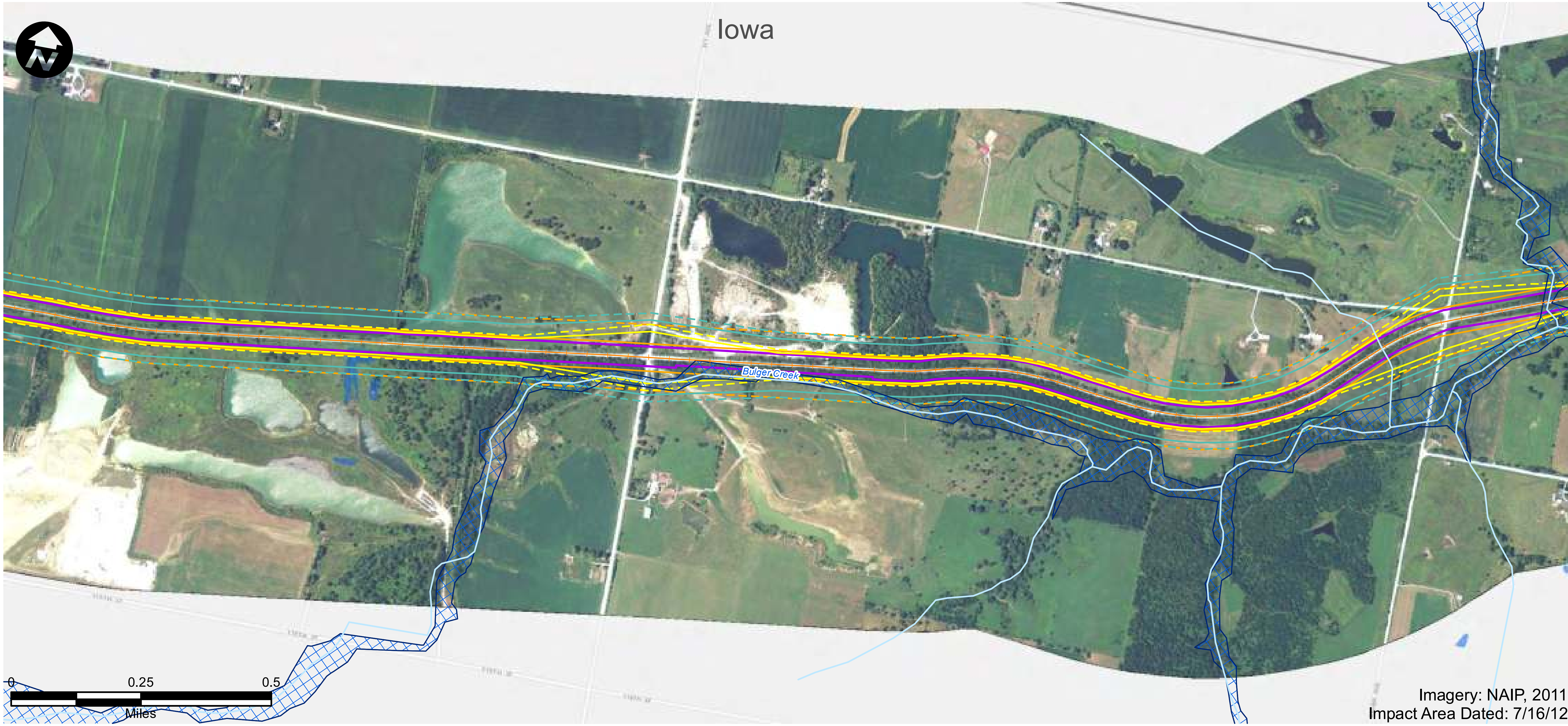

Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
Recreation Area
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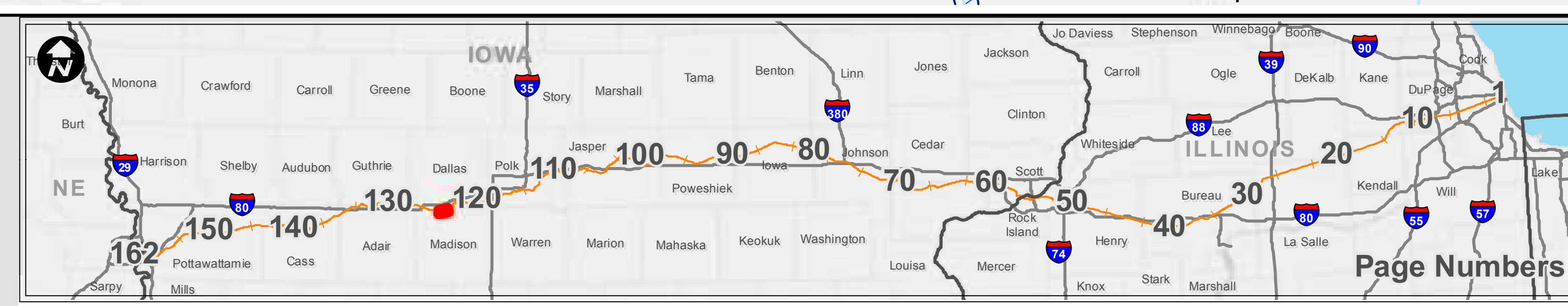

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Route Alternative
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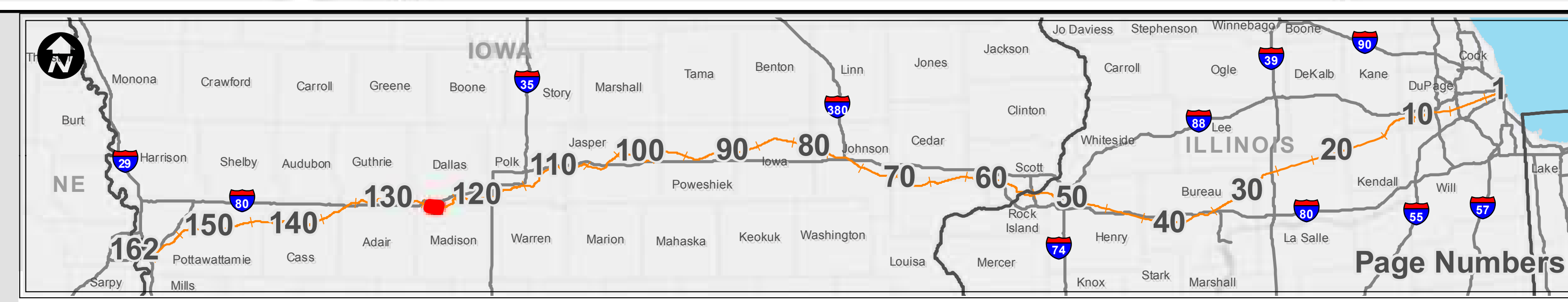

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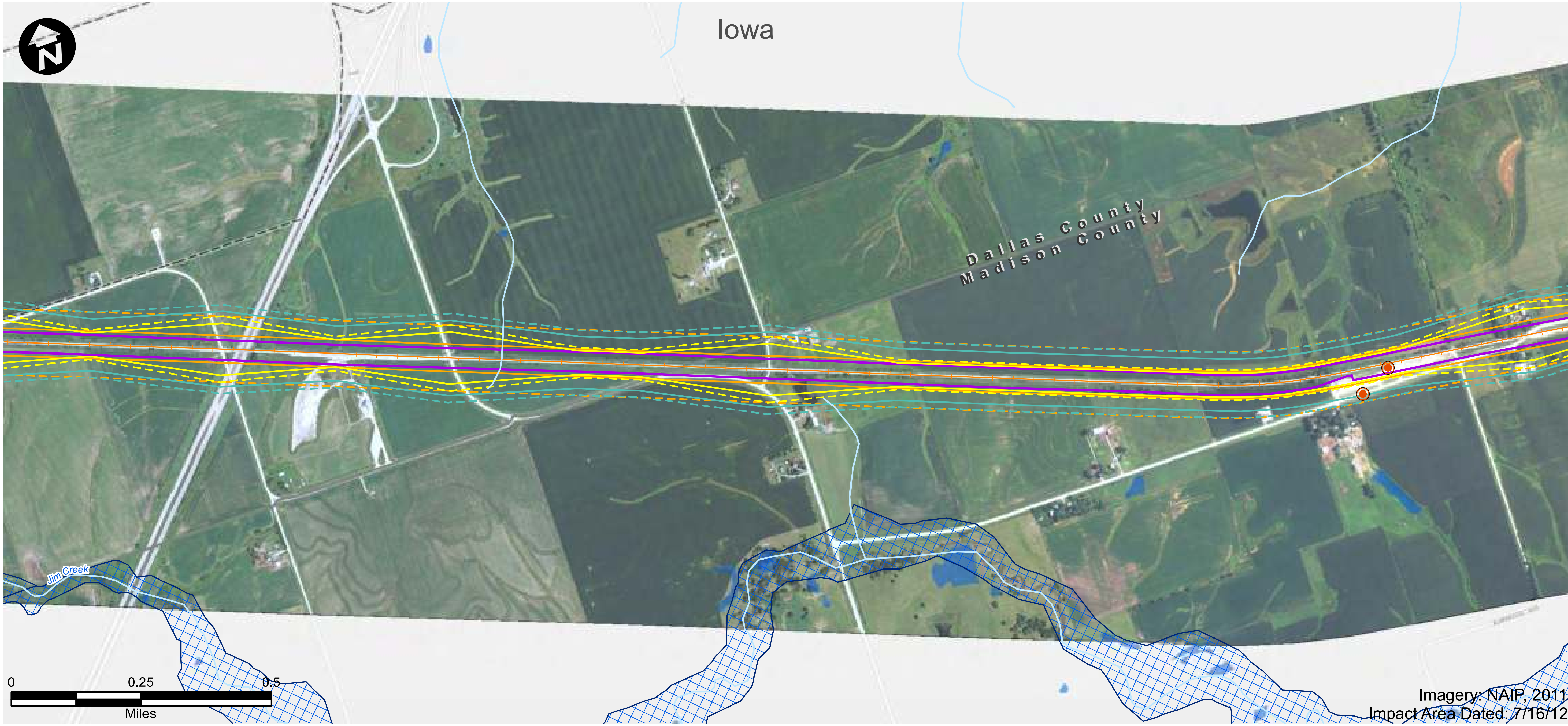

Route Alternative
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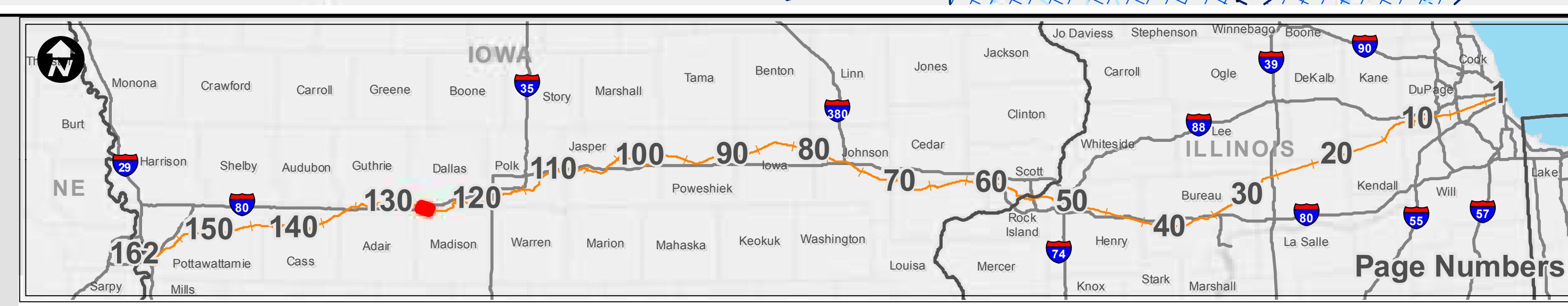

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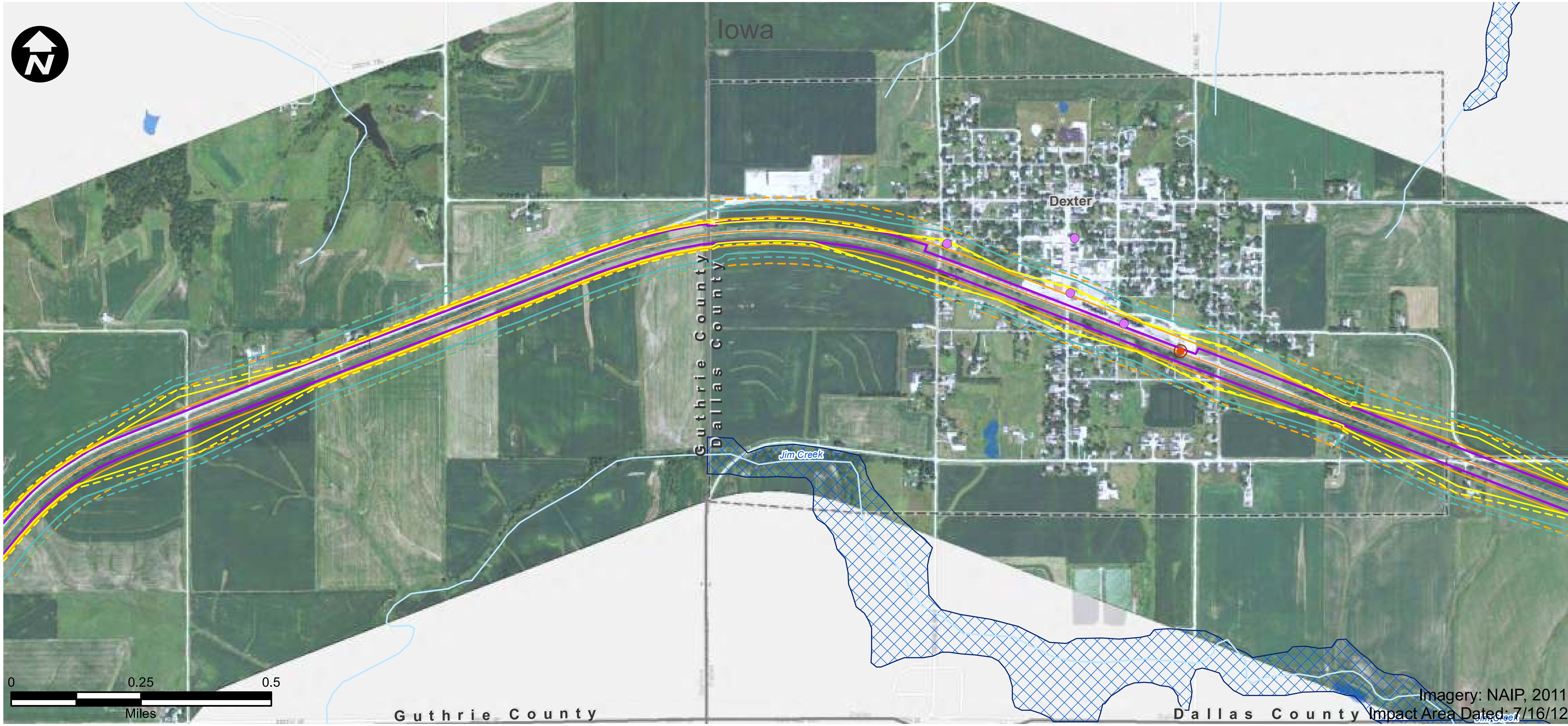

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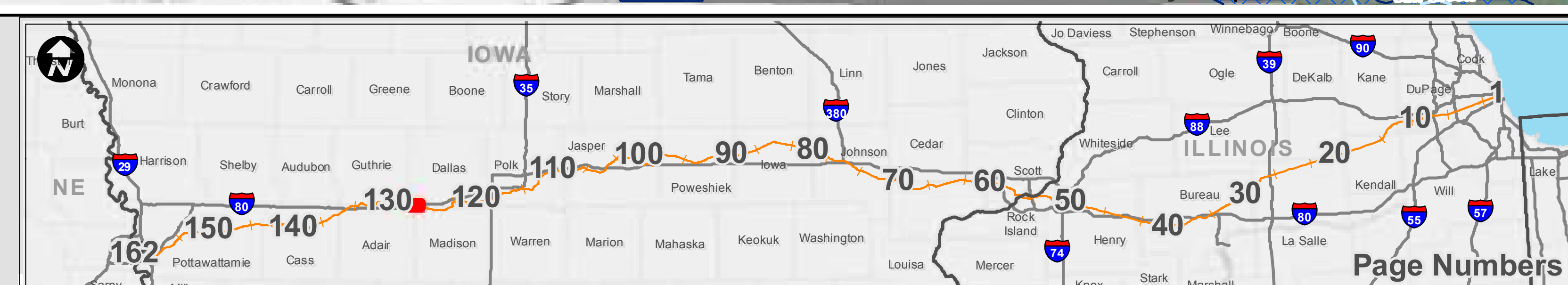

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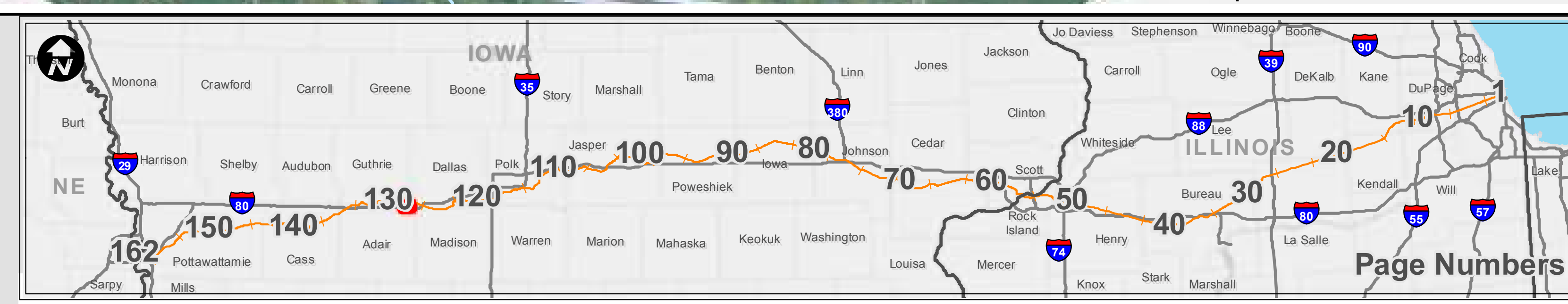

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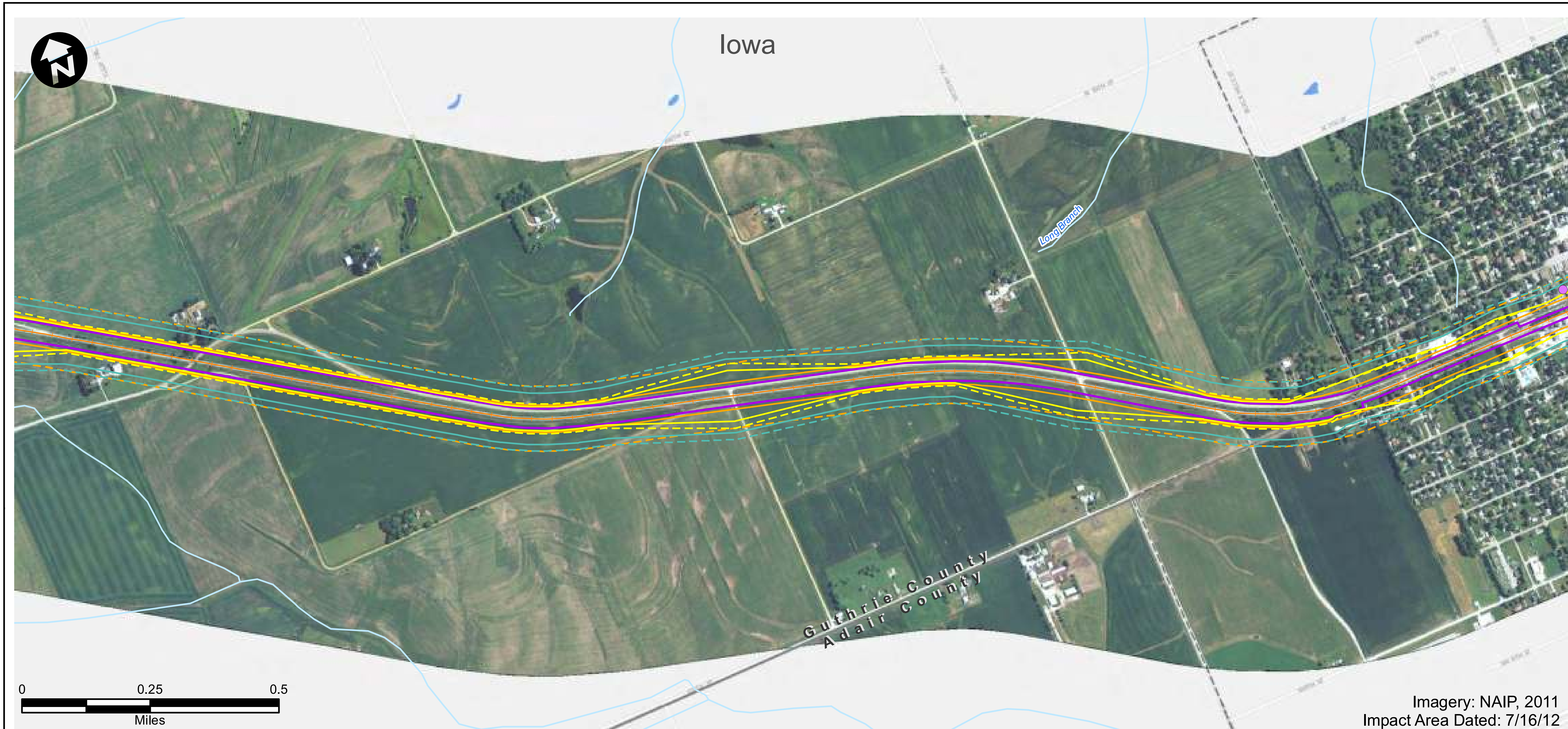

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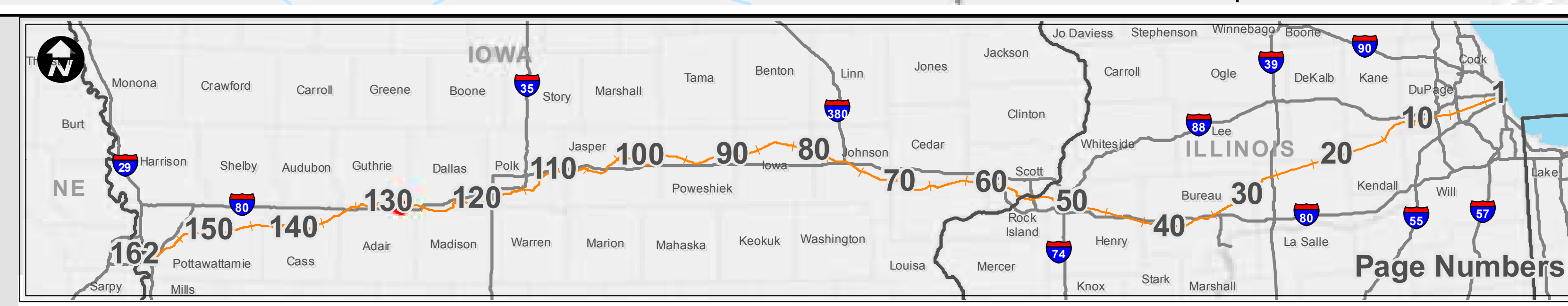

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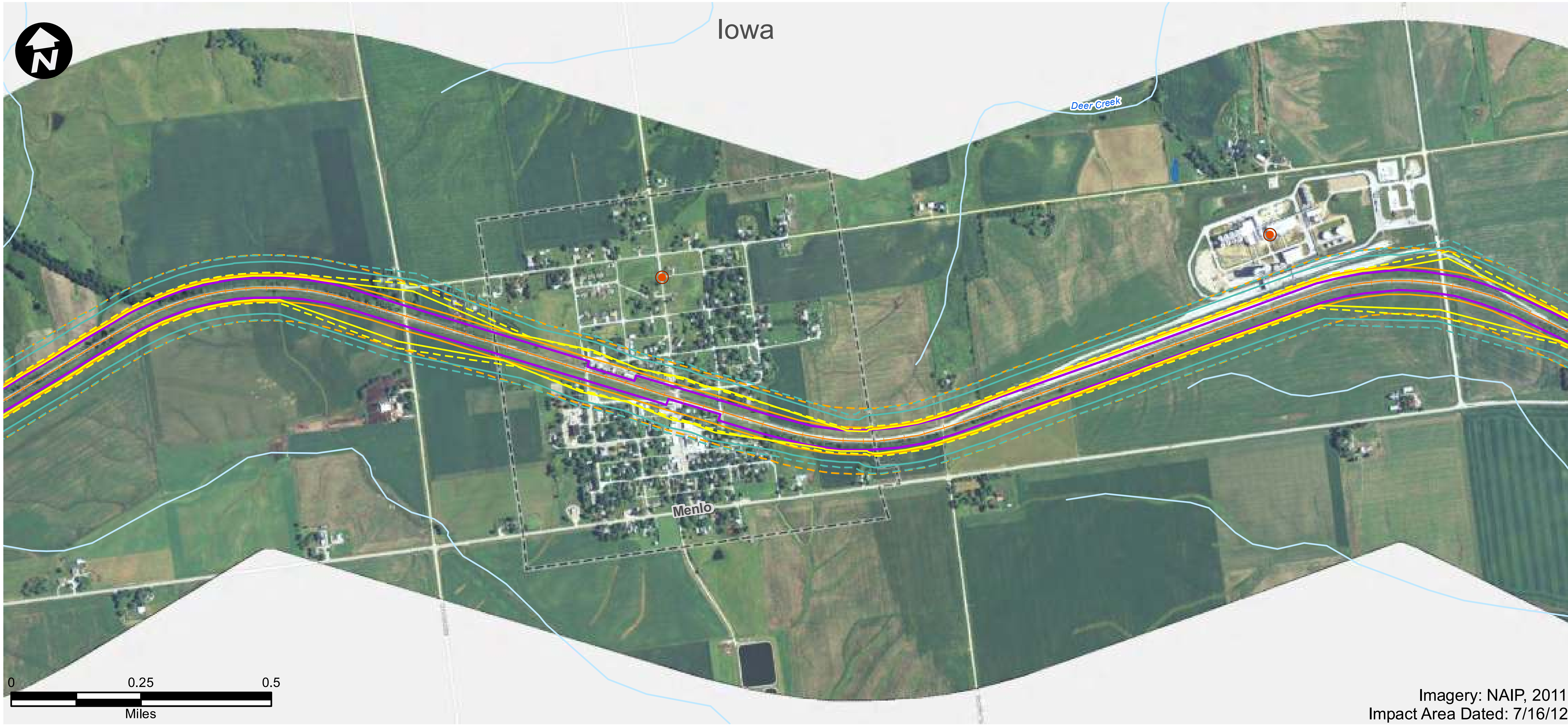

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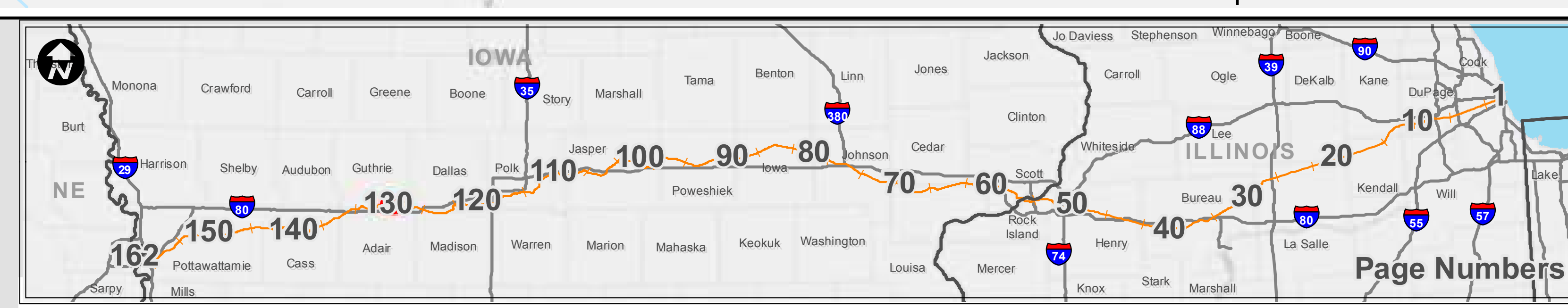

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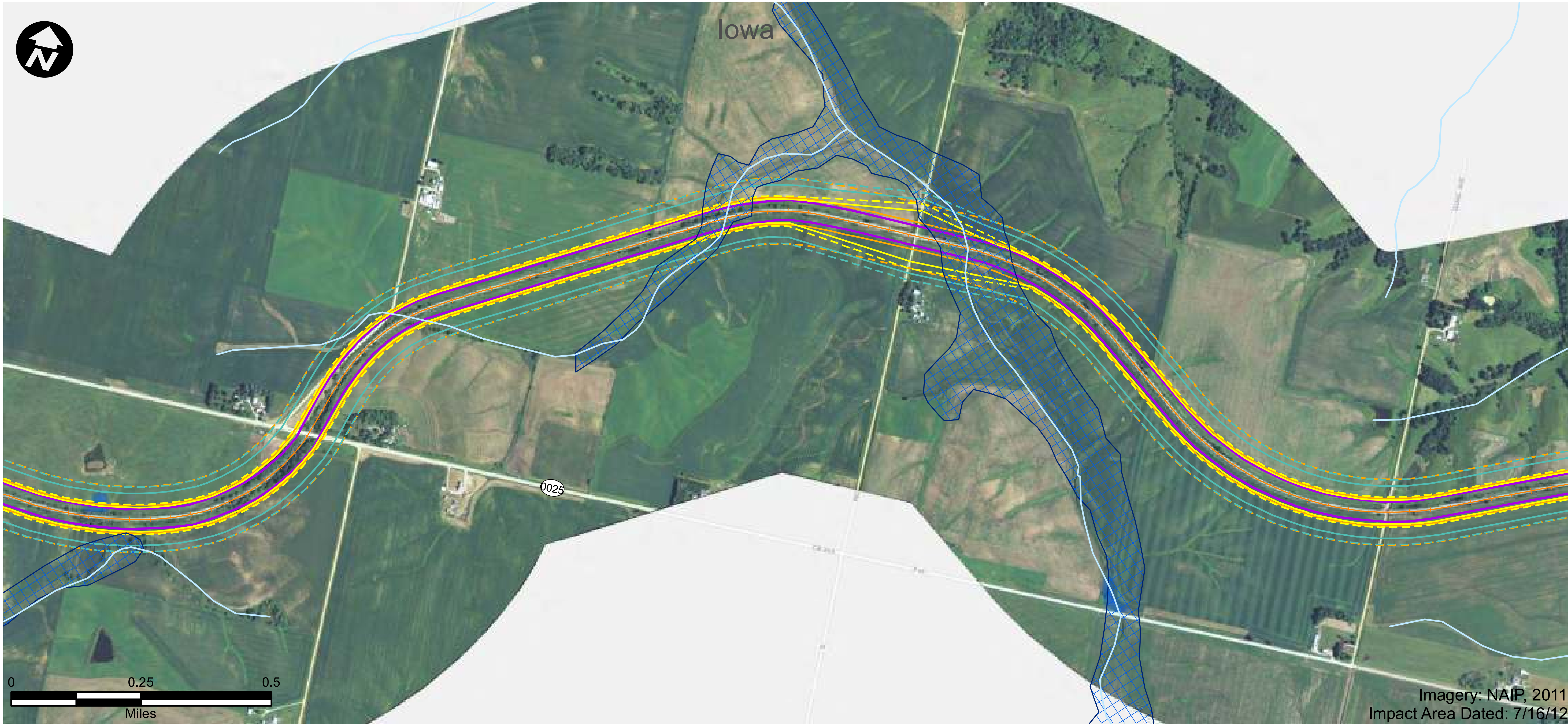

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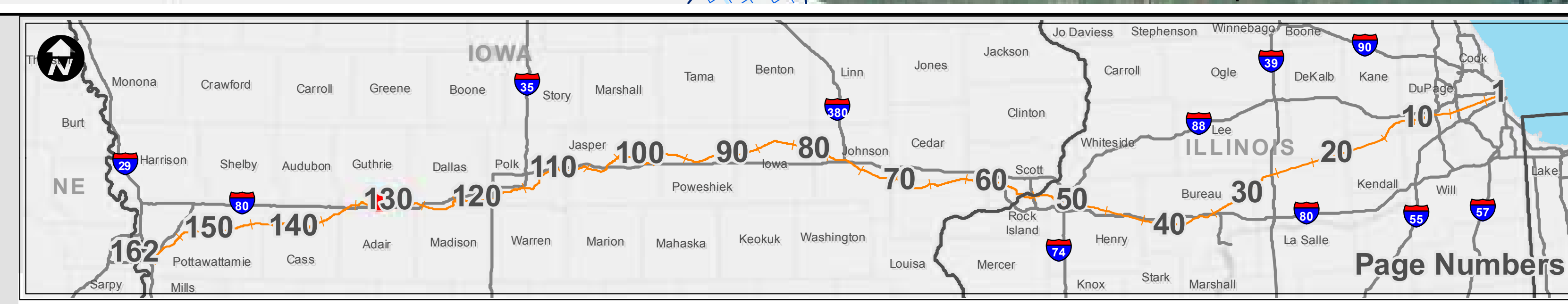

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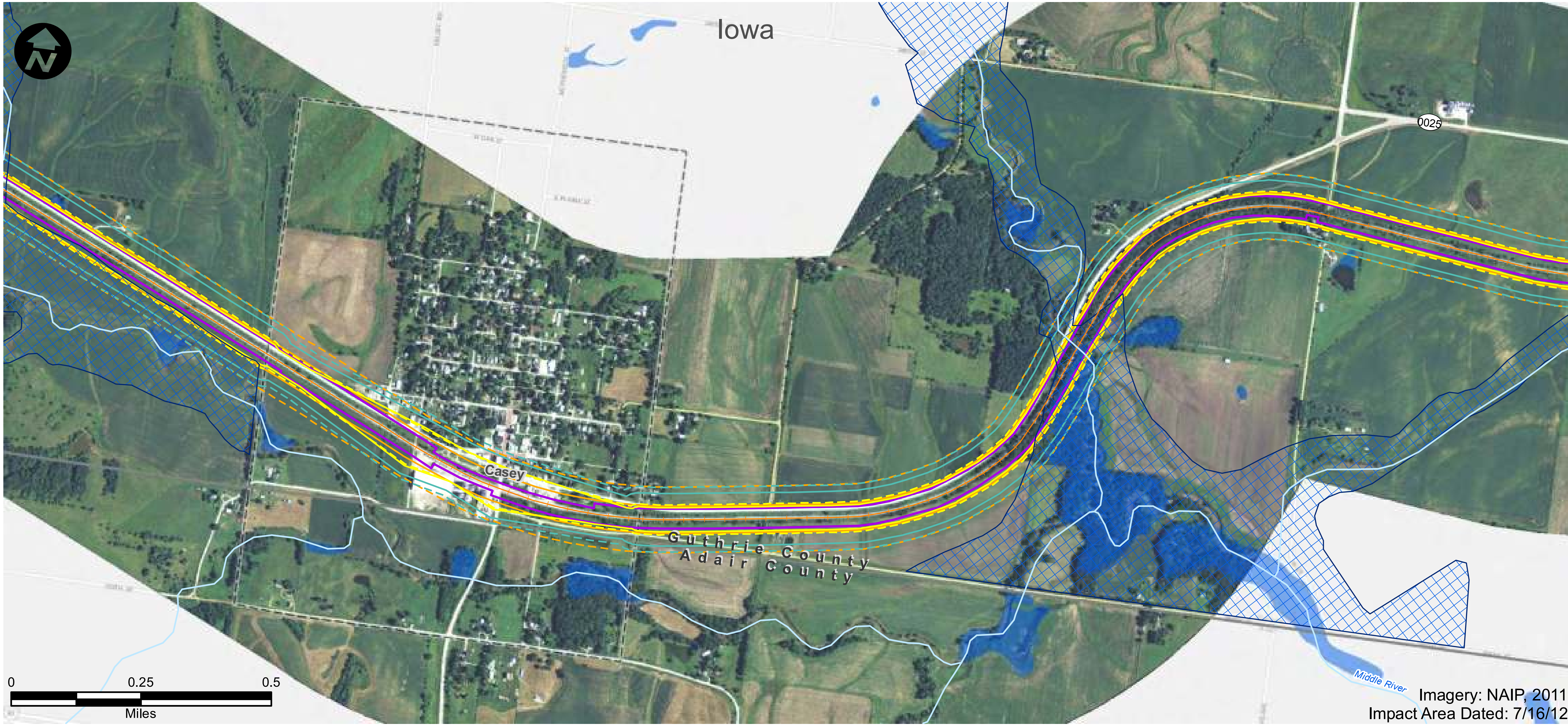

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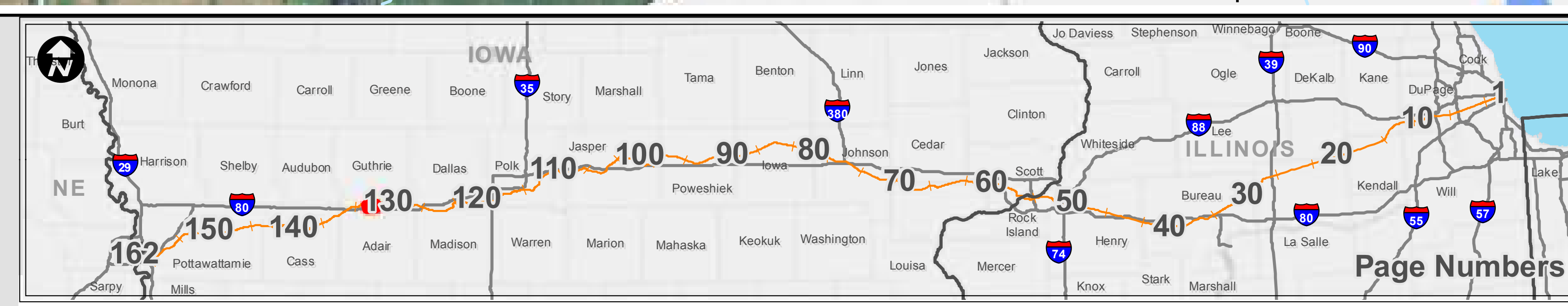

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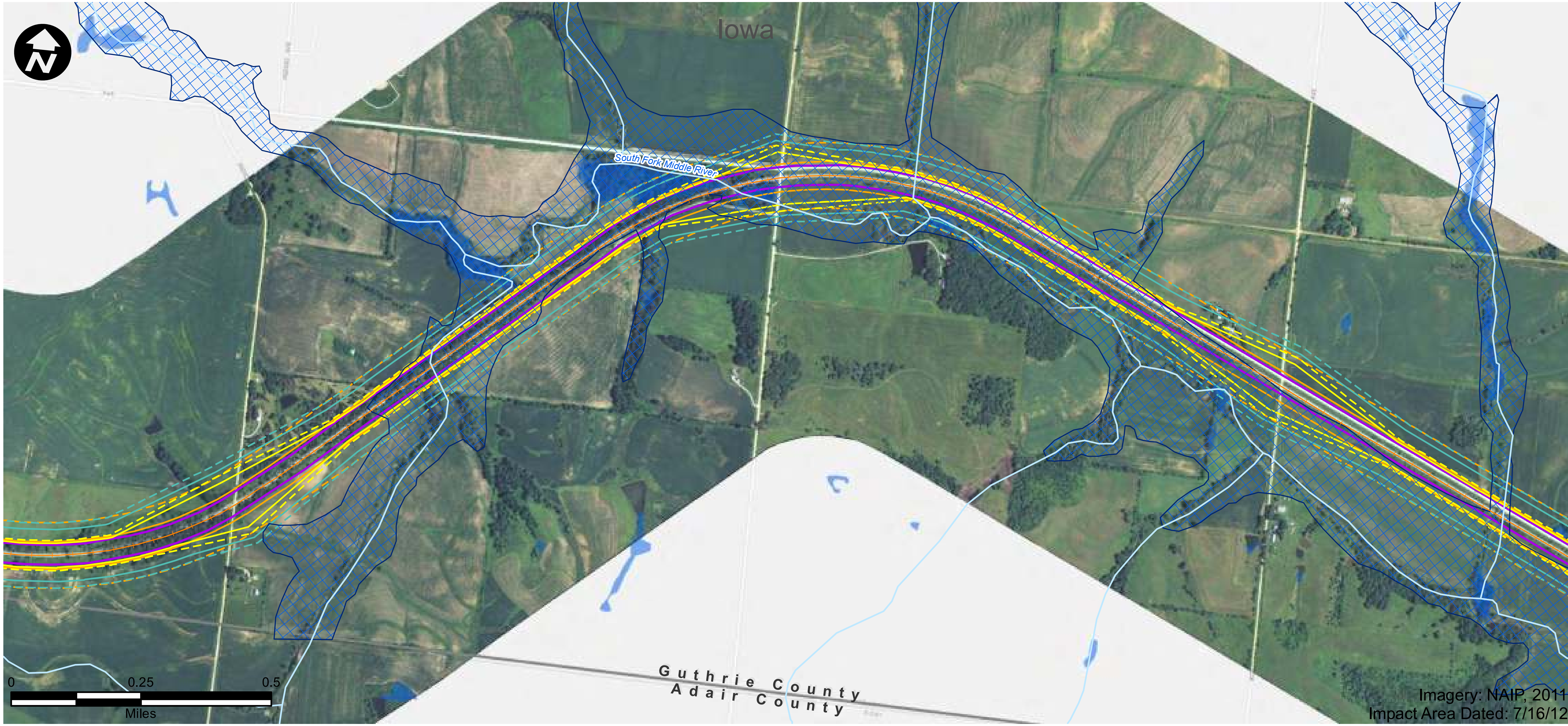

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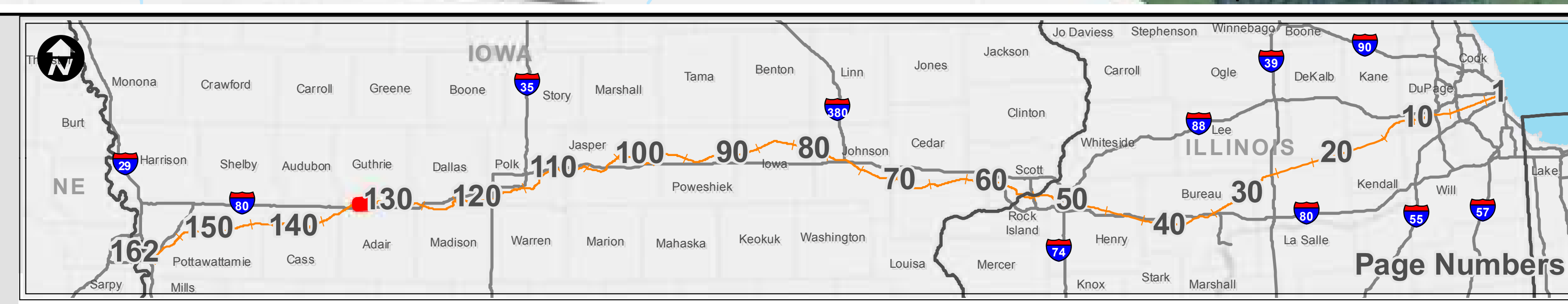

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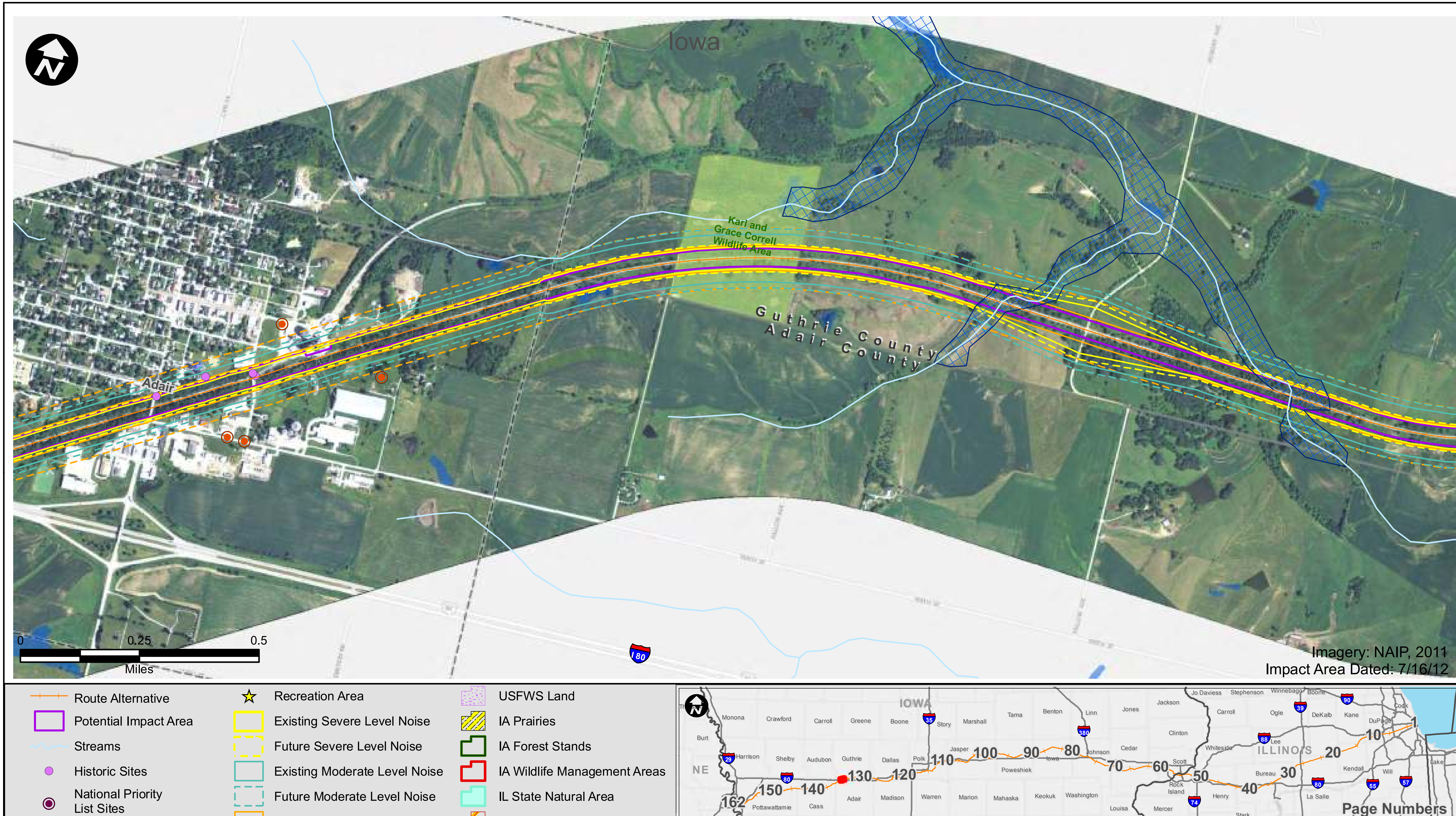

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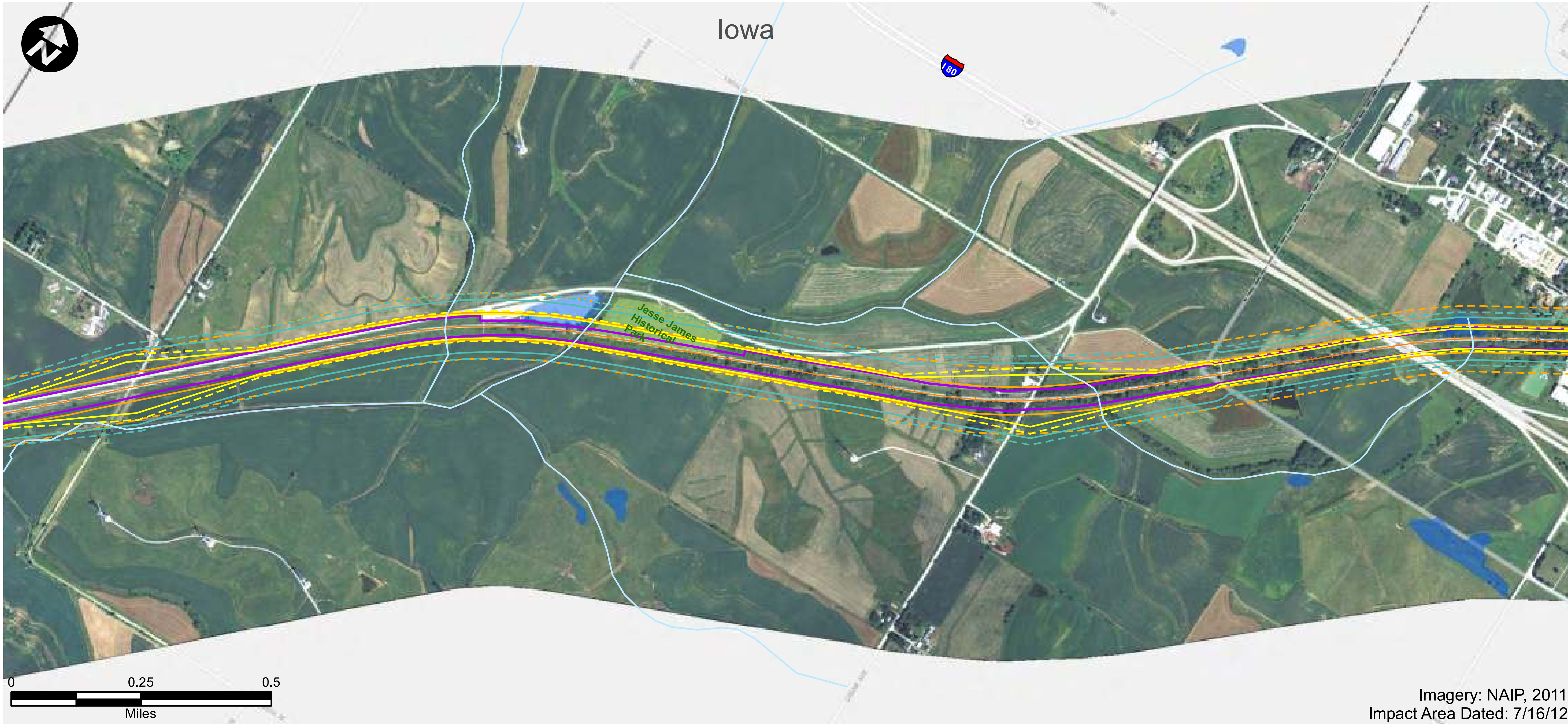

Route Alternative
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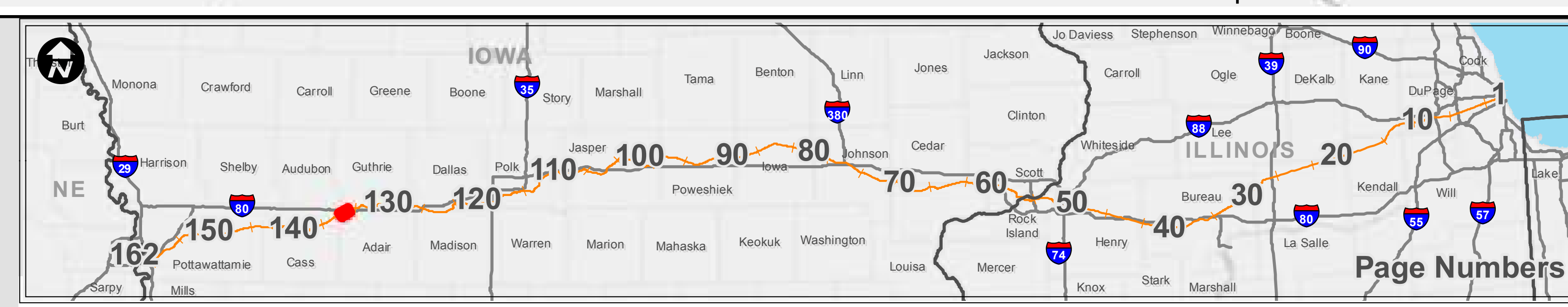

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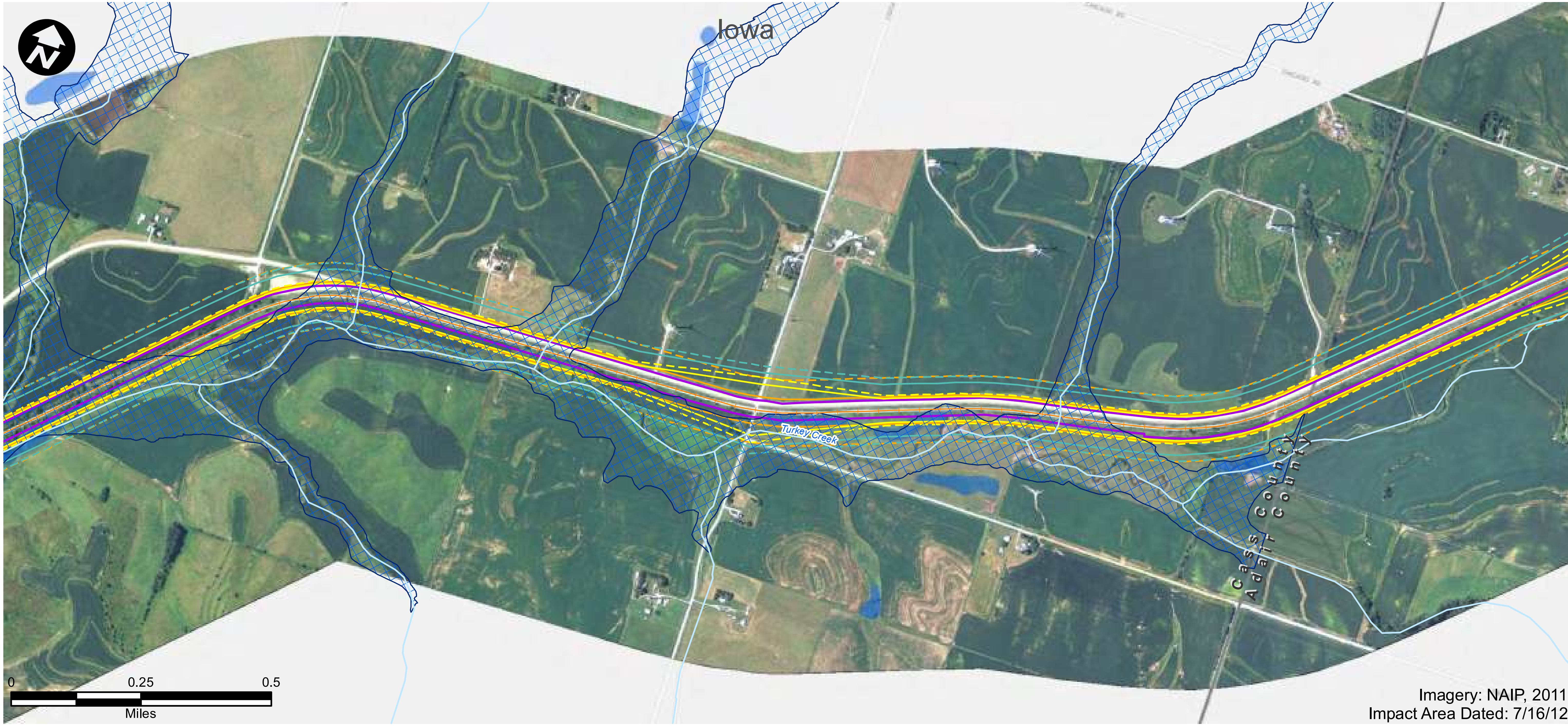

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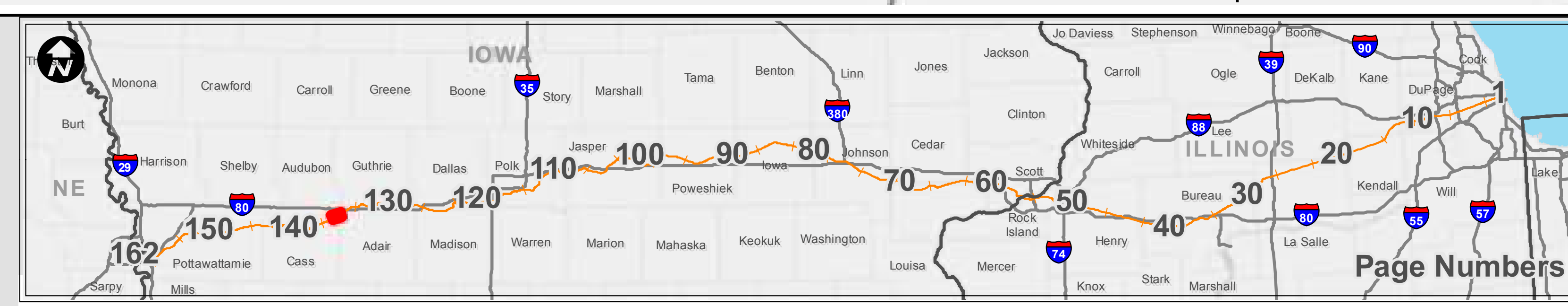

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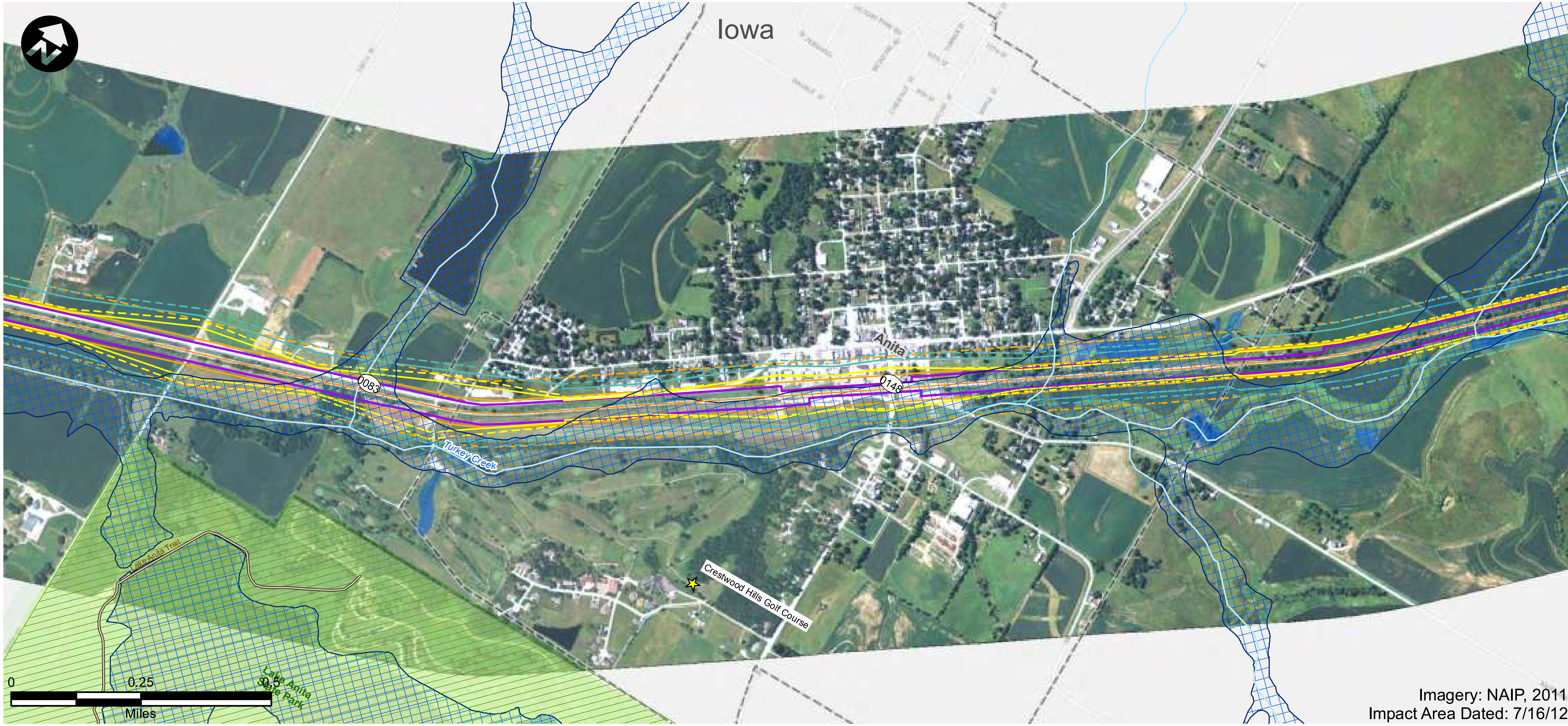

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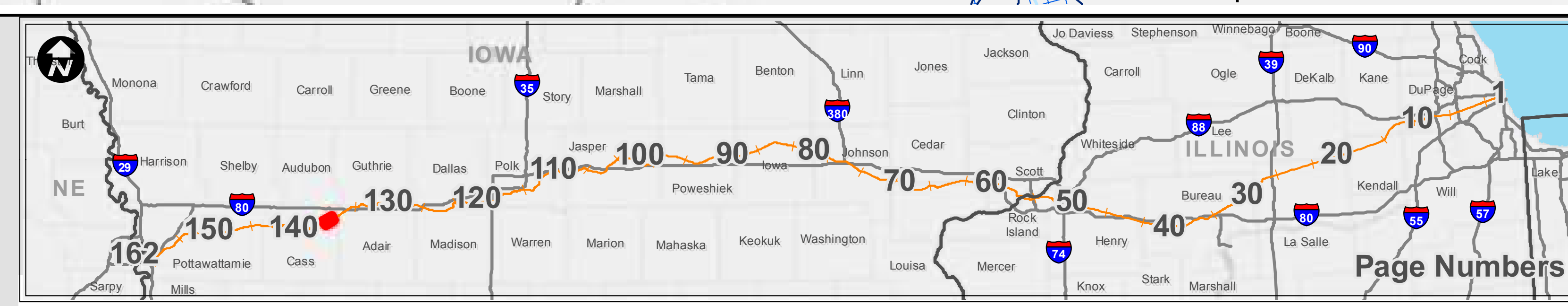

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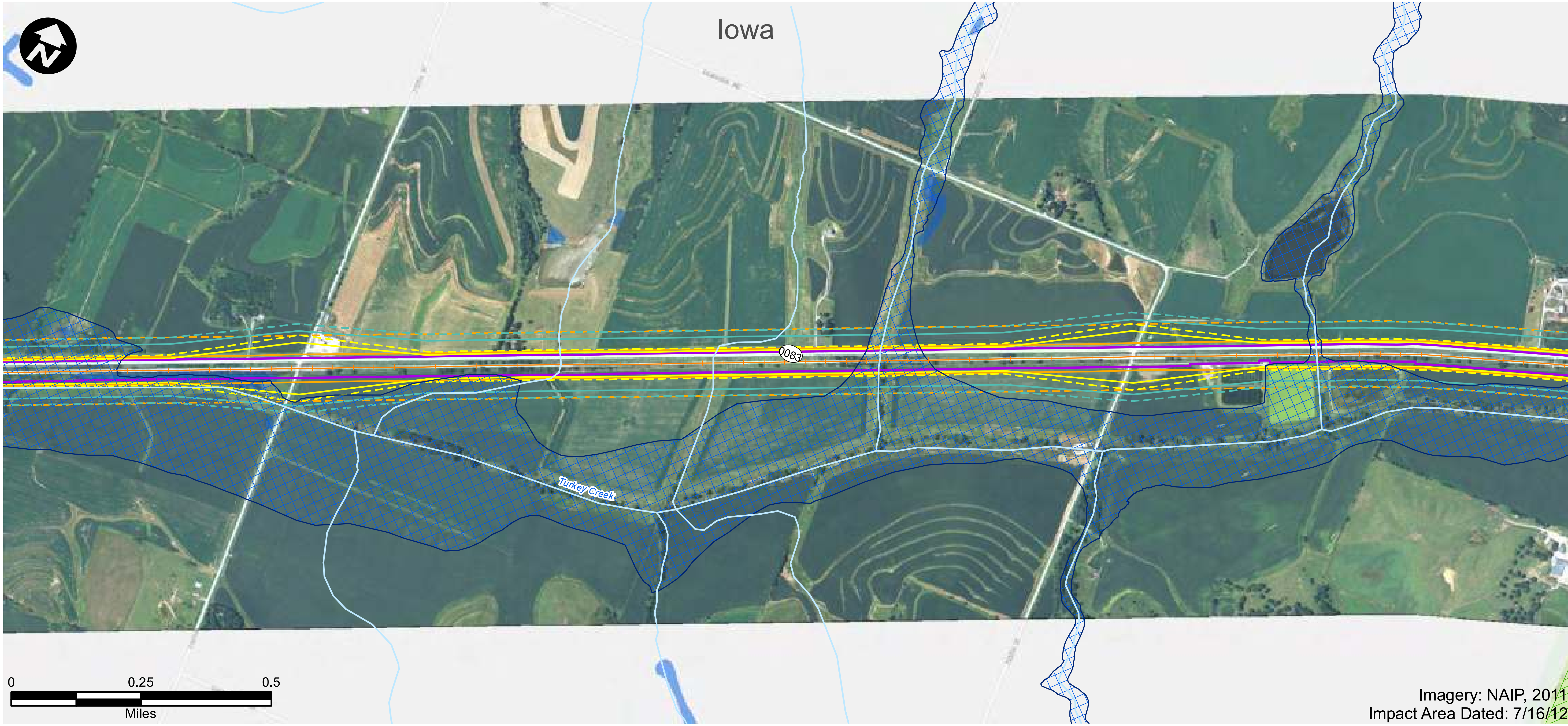

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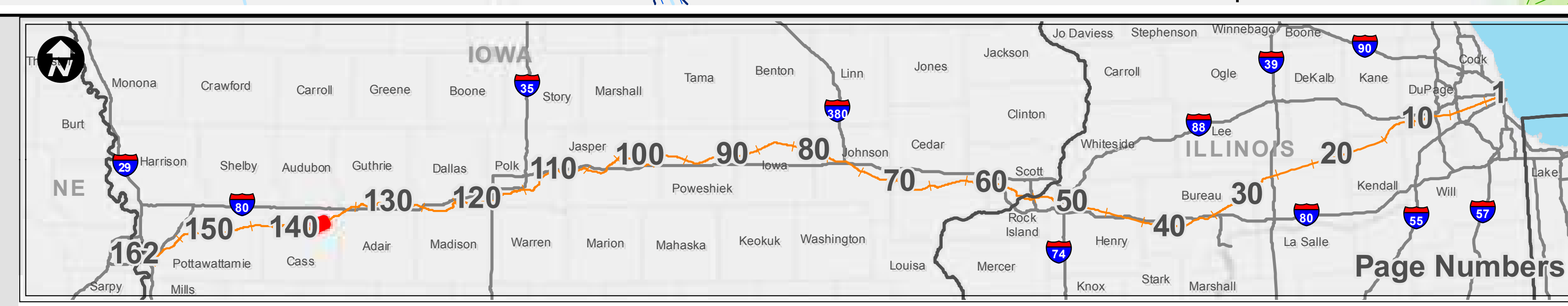

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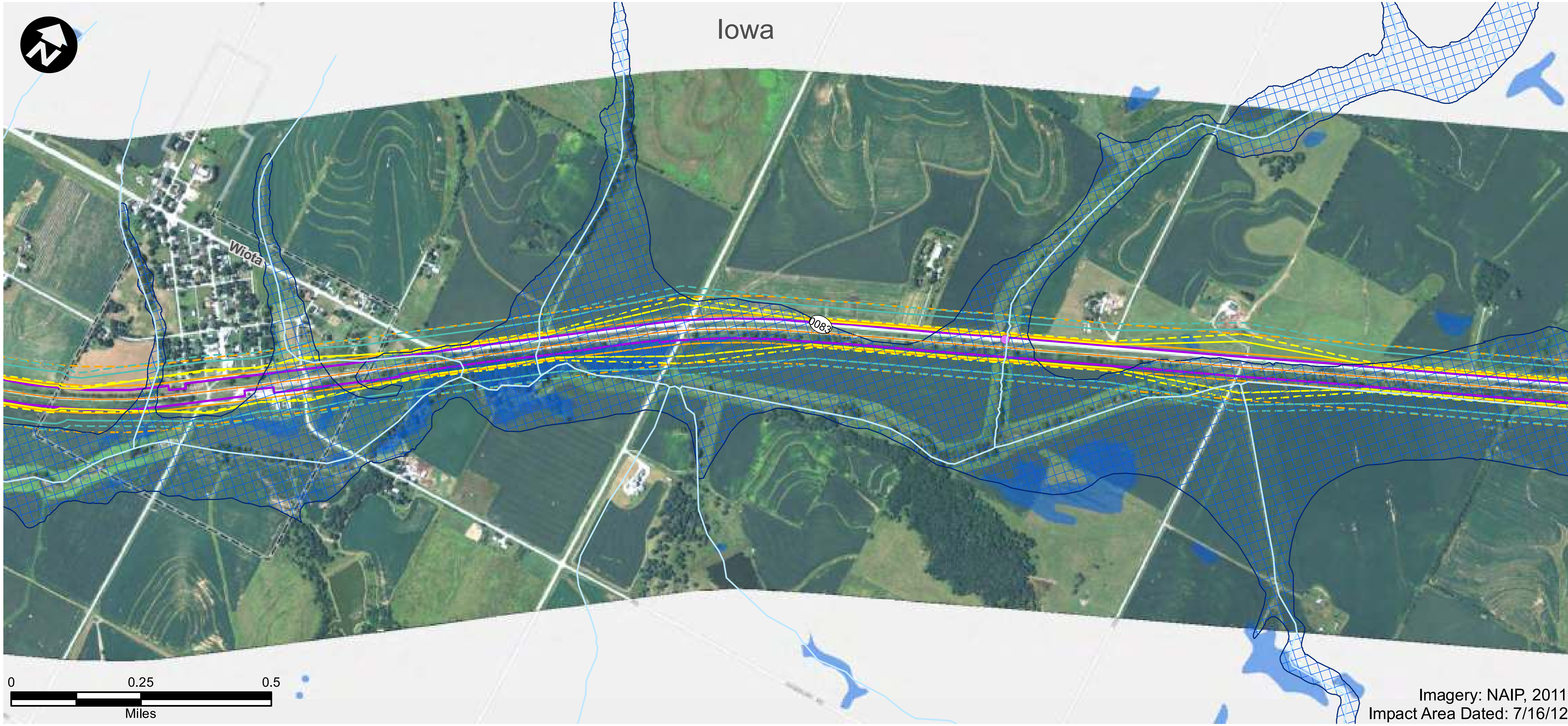

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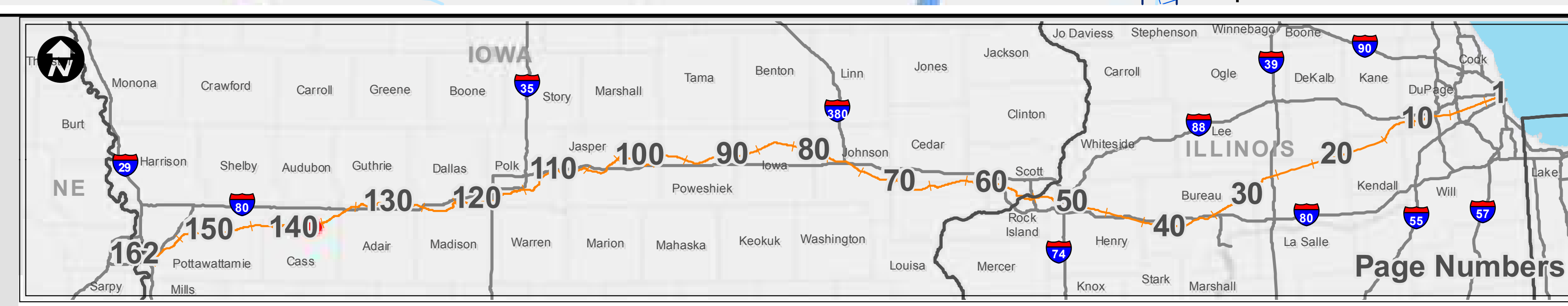

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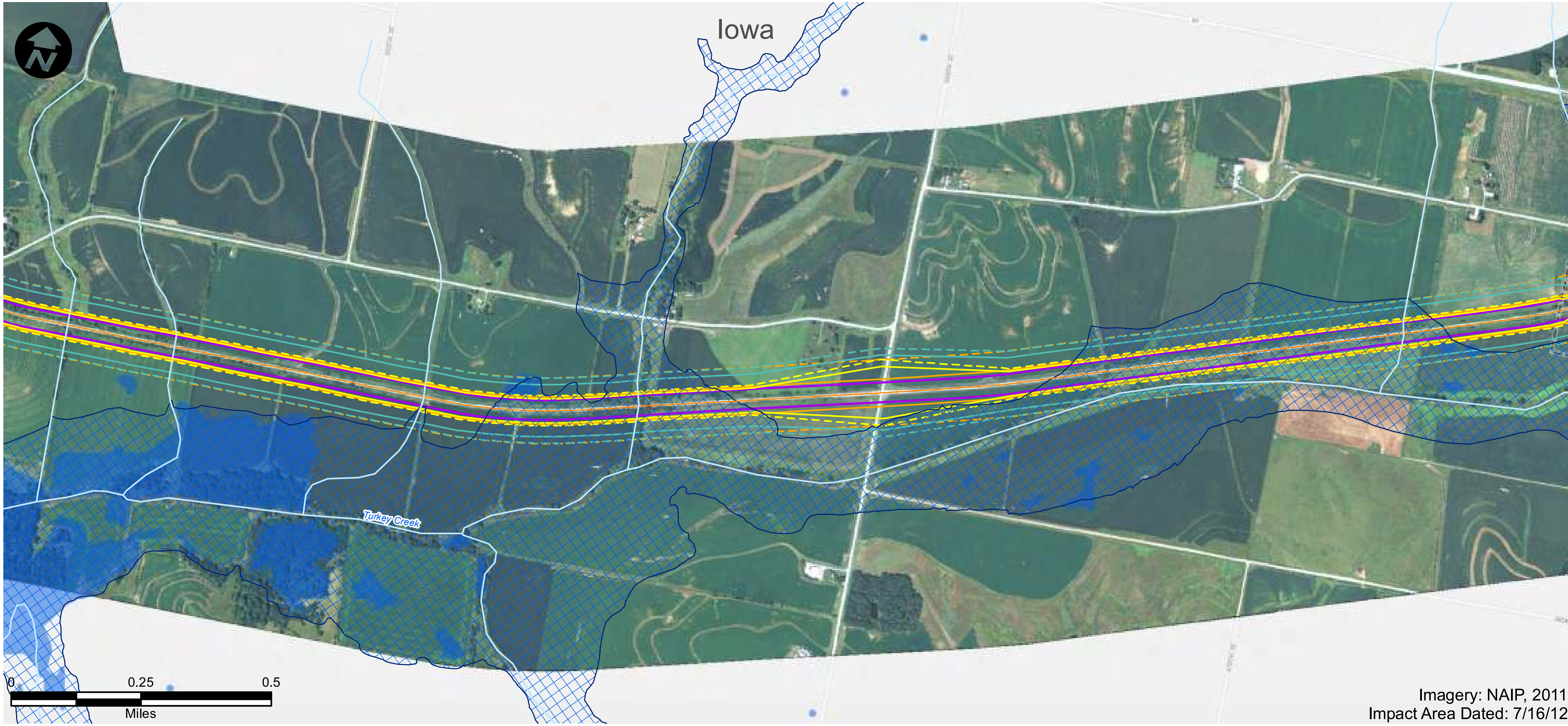

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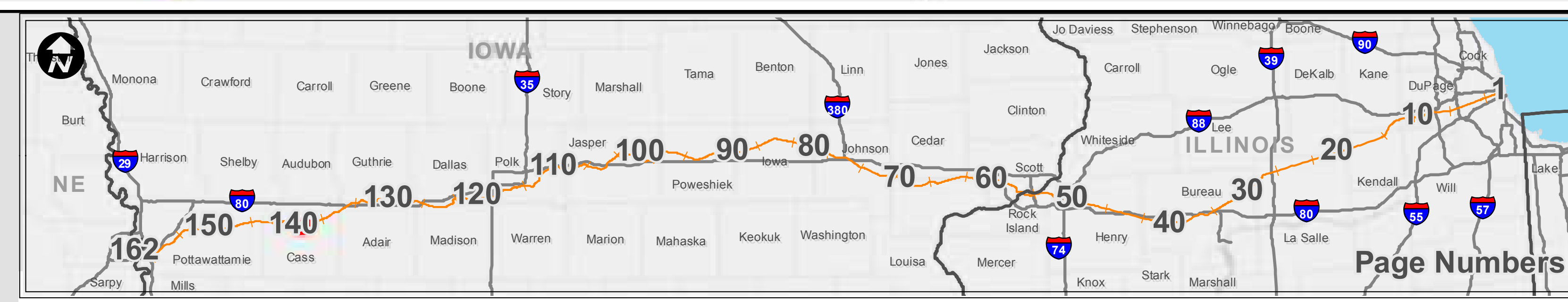

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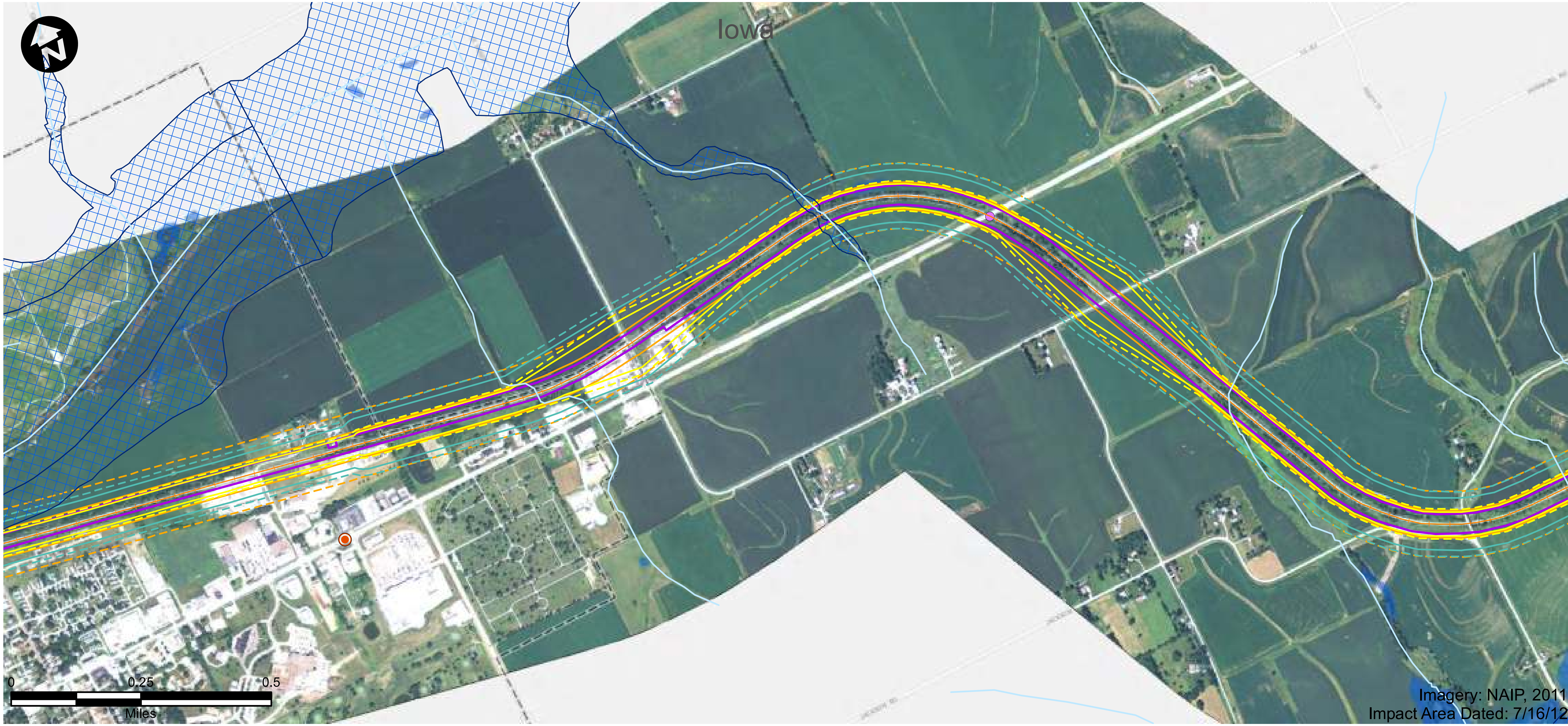

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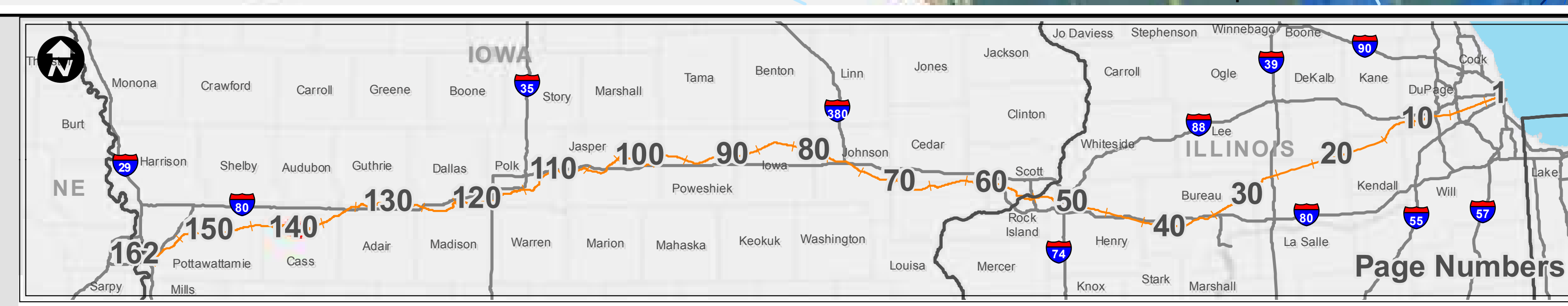

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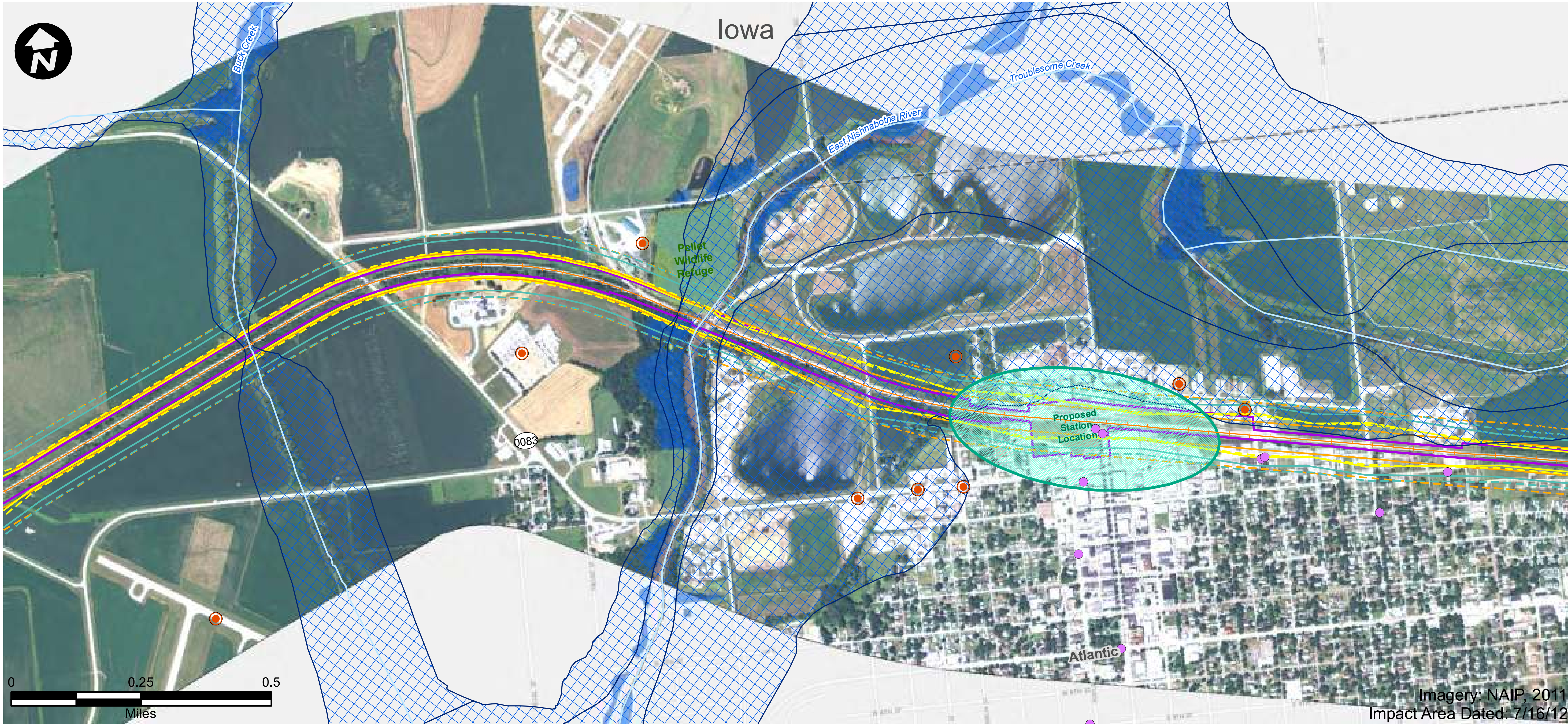
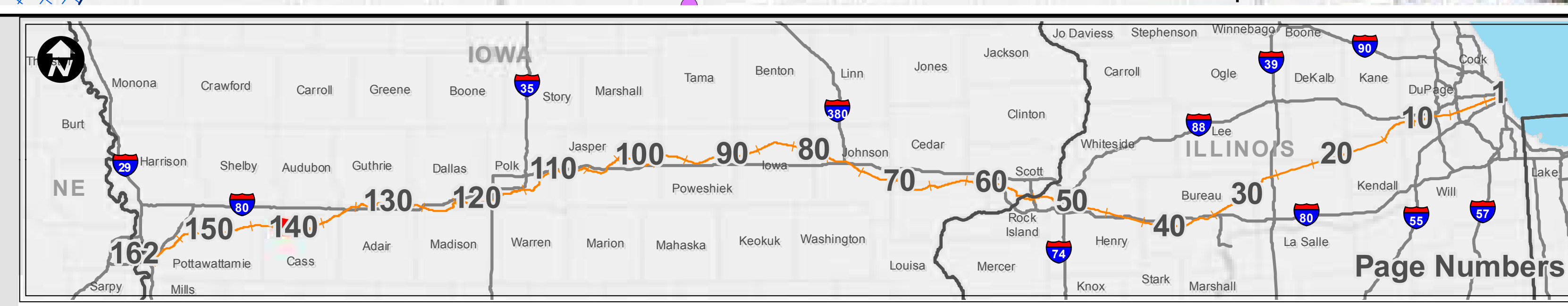


- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
- Hazardous Material Sites
- Omaha & IA Trails
- Parks
- IA State Recreational Land
- Recreation Area
- Existing Severe Level Noise
- Future Severe Level Noise
- Existing Moderate Level Noise
- Future Moderate Level Noise
- Existing Vibration Contours
- Future Vibration Contours
- NWI Wetland *(PAB~, PEM~, PFO, and PSS~)*
- NWI Lake or Pond
- 100-Year Floodplain
- USFWS Land
- IA Prairies
- IA Forest Stands
- IA Wildlife Management Areas
- IL State Natural Area
- IL County Forest Preserves
- Topeka Shiner Critical Habitat
- City Boundary
- County Border



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Route Alternative
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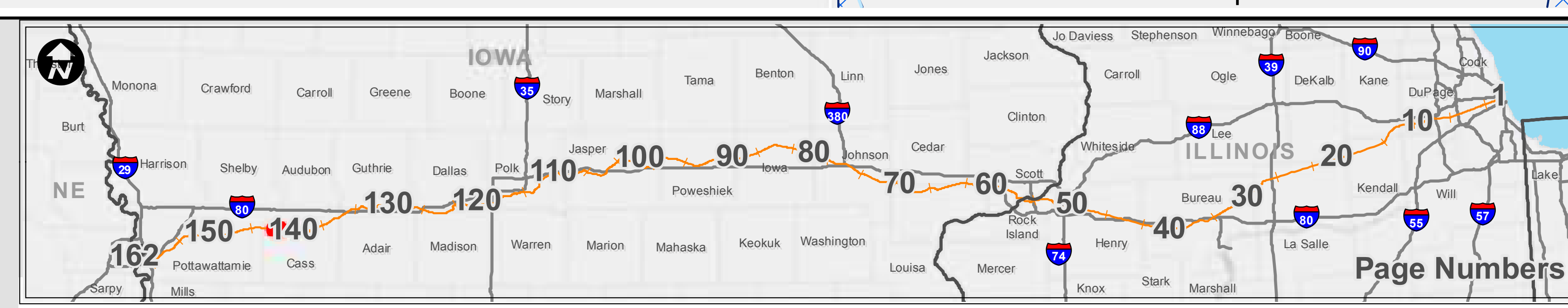
City Boundary
County Border



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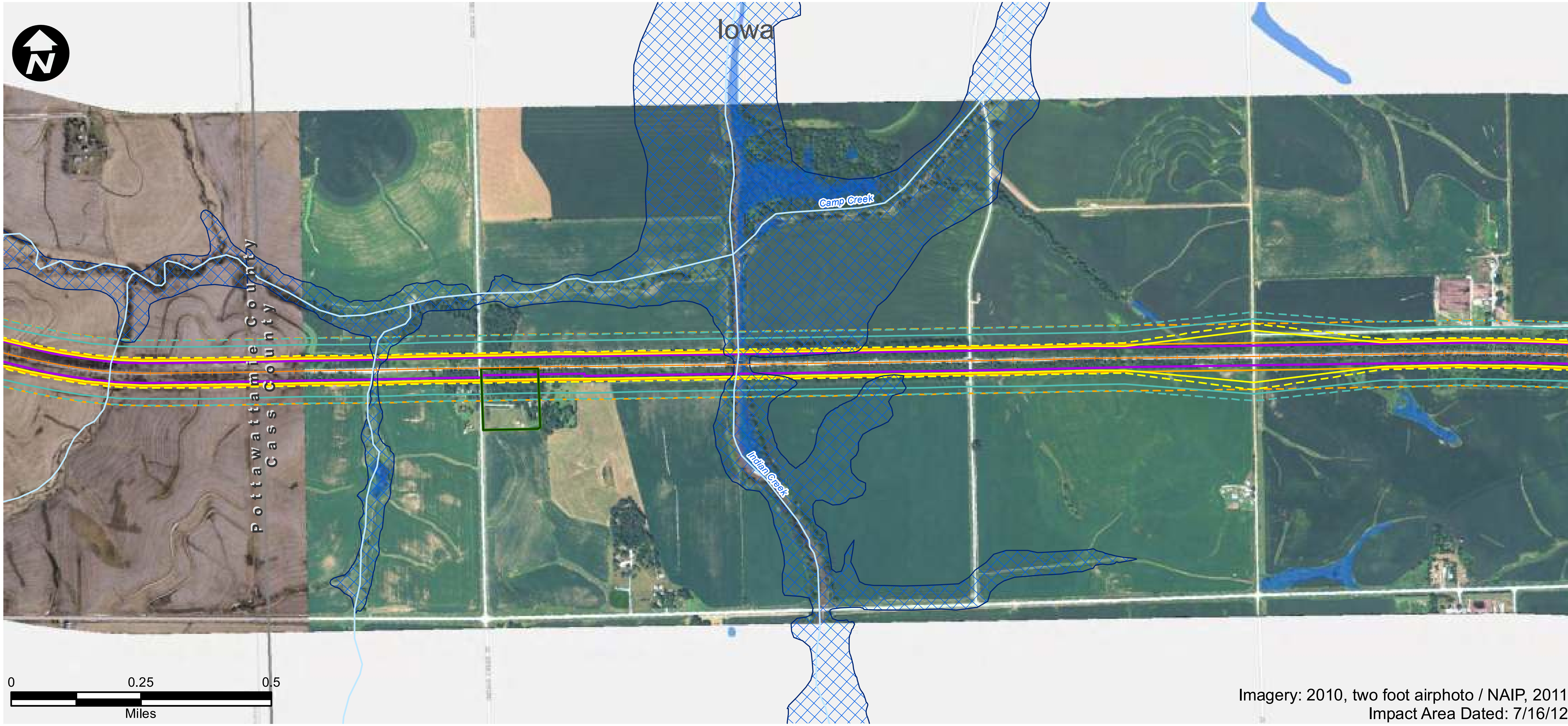

- Route Alternative
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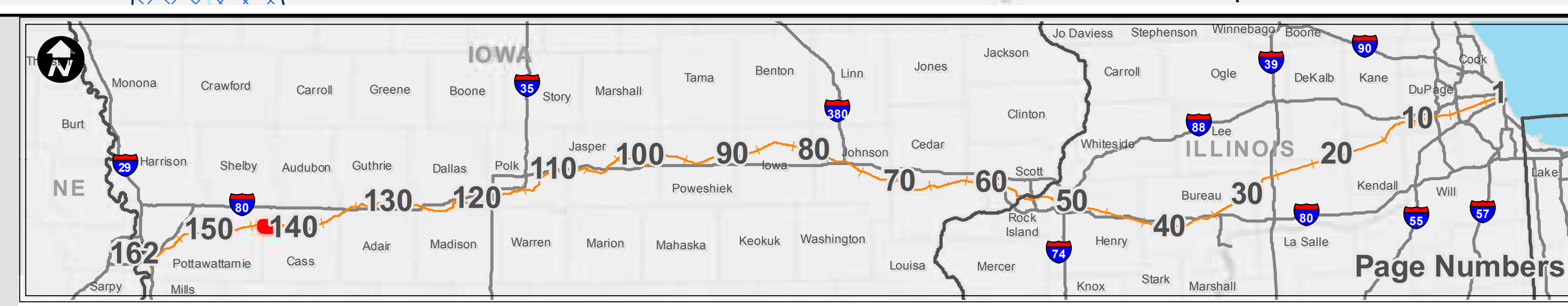

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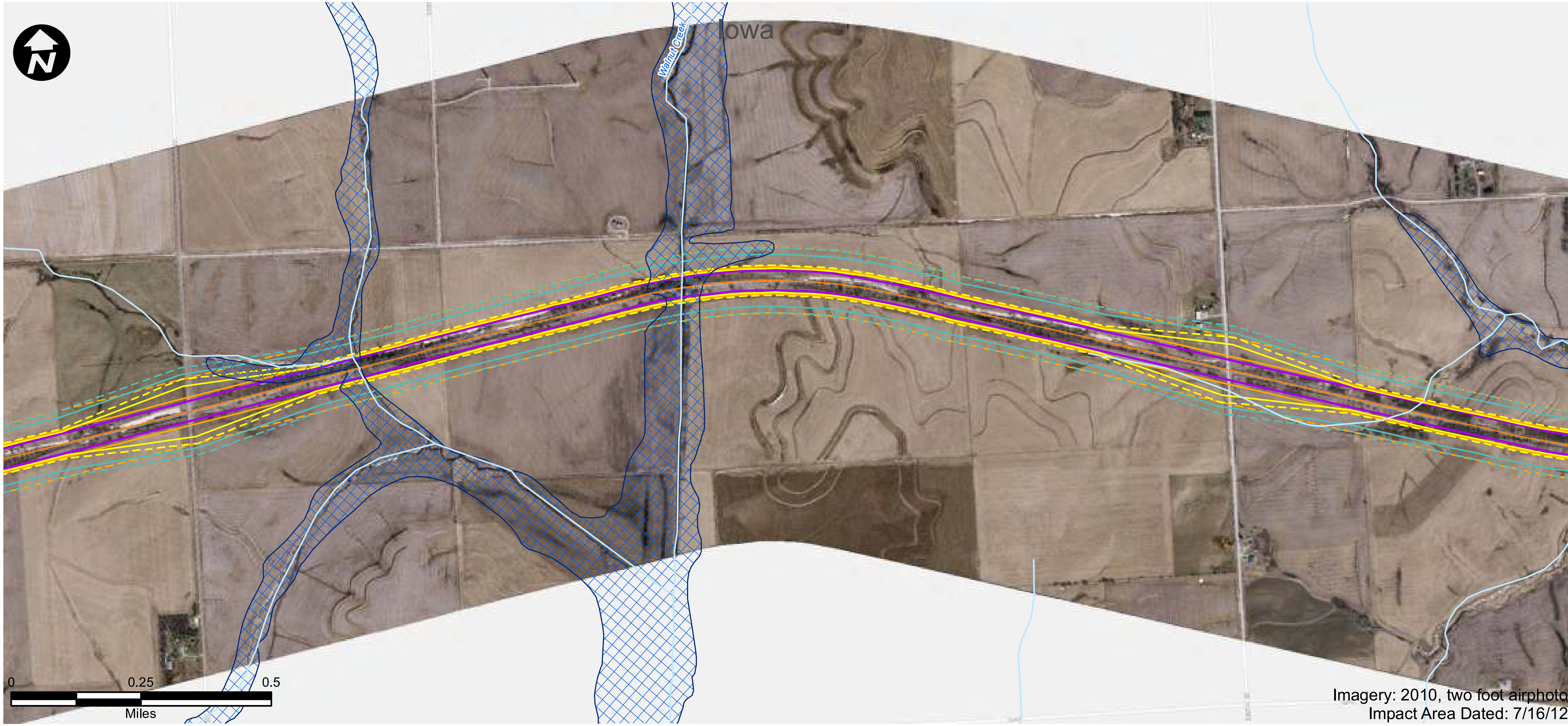

Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land
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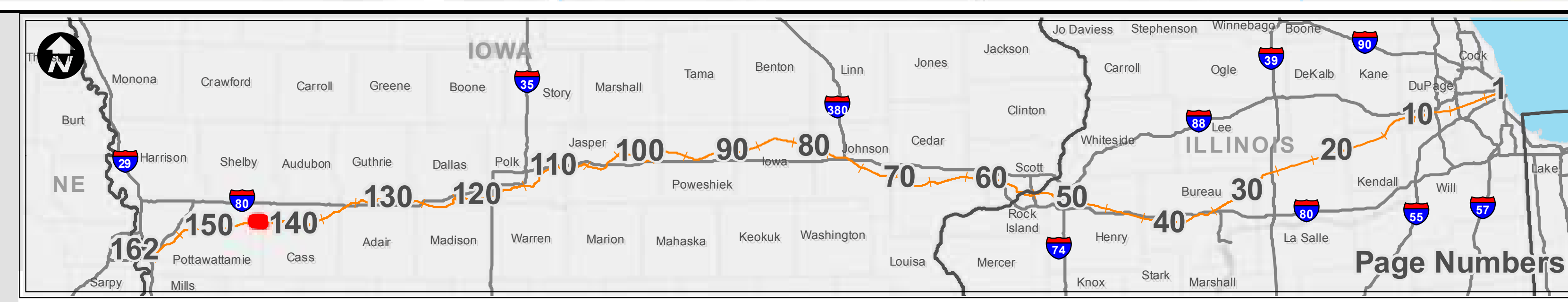

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- Route Alternative
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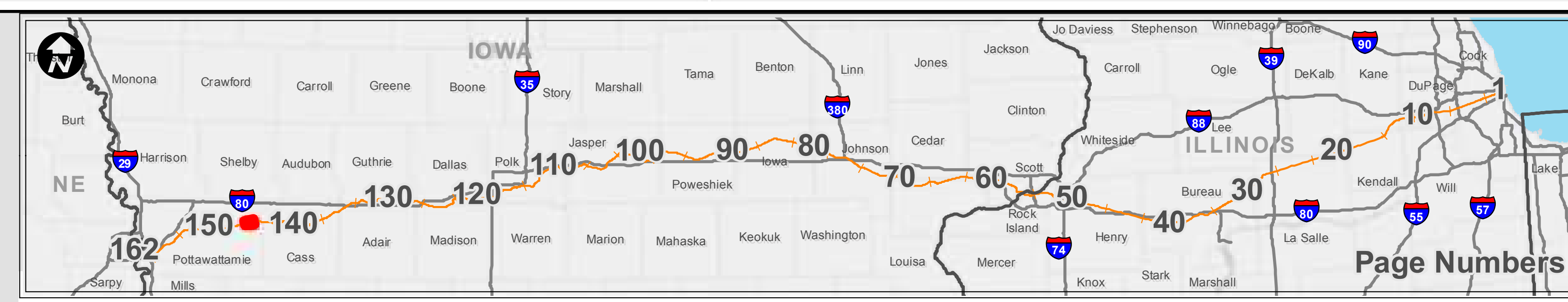

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- Route Alternative
- Potential Impact Area
- Streams
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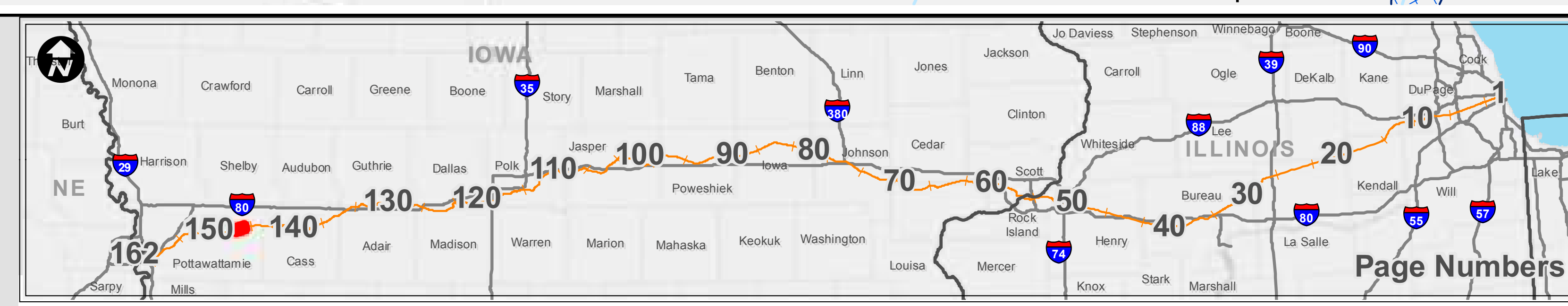

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Route Alternative
Potential Impact Area
Streams
Historic Sites
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Recreation Area
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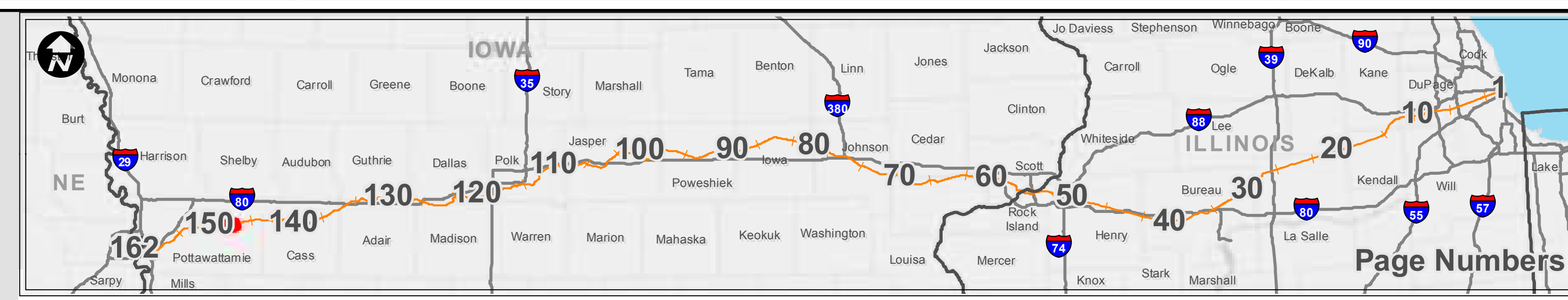

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Route Alternative
Potential Impact Area
Streams
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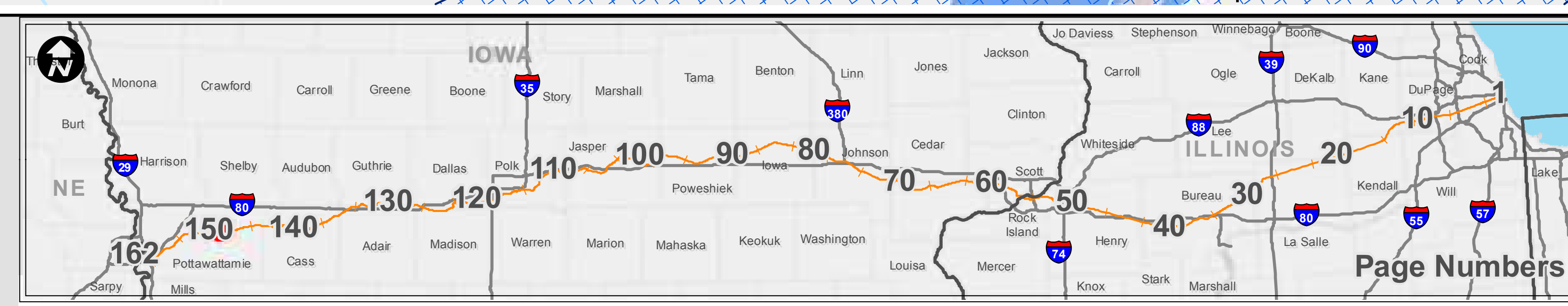

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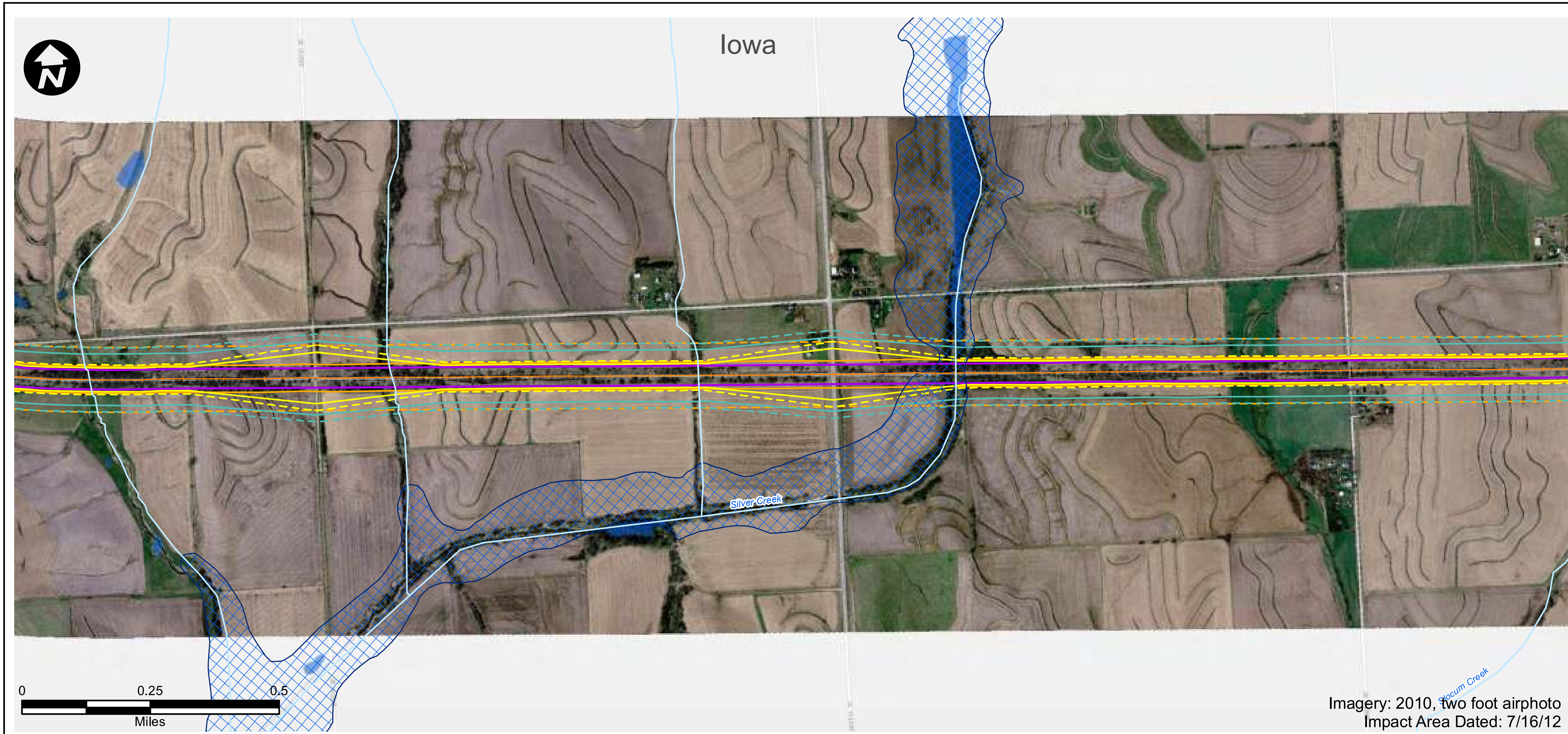

Route Alternative
Potential Impact Area
Streams
Historic Sites
National Priority List Sites
Hazardous Material Sites
Omaha & IA Trails
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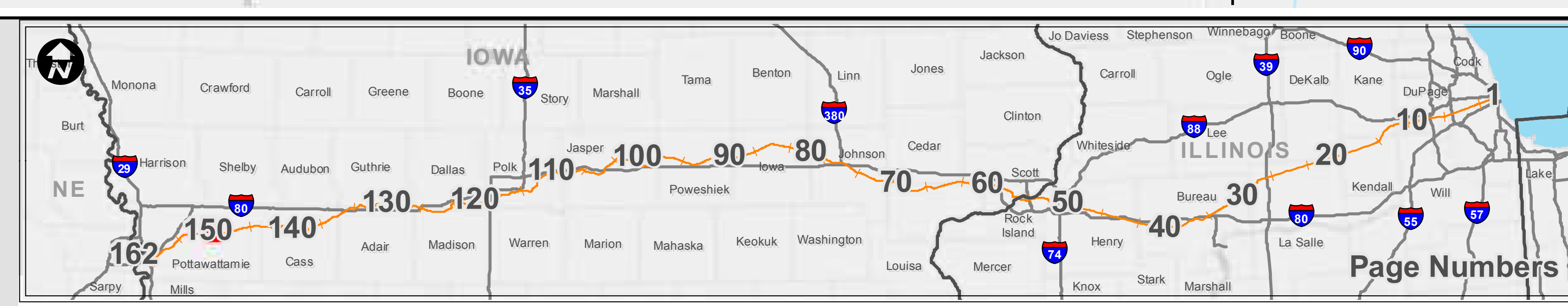

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- Route Alternative
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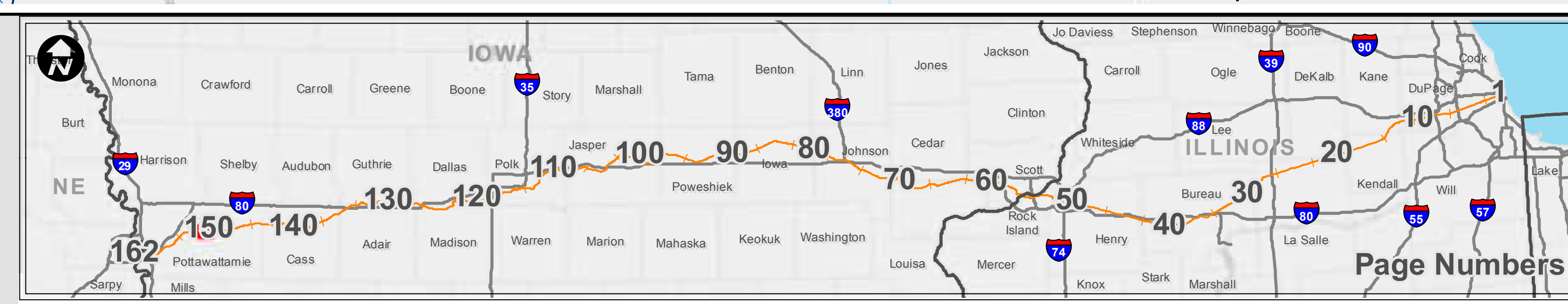

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- Route Alternative
- Potential Impact Area
- Streams
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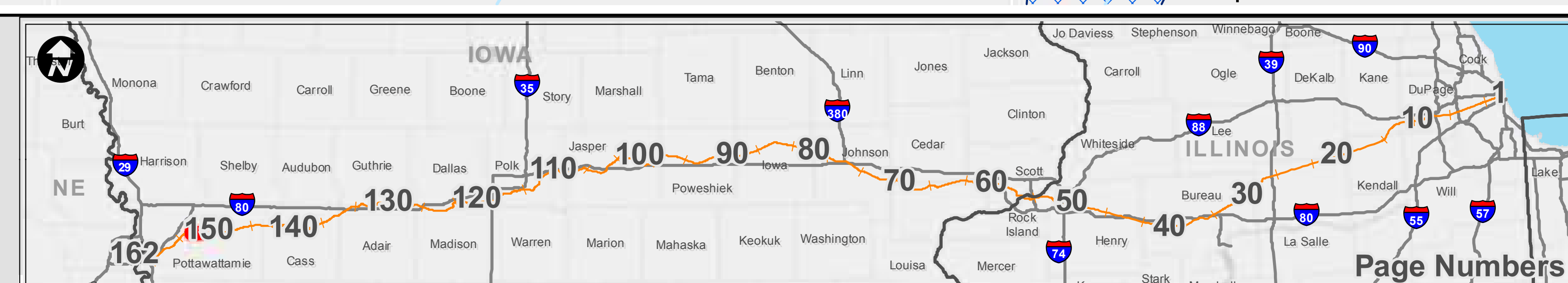
- County Border



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- Route Alternative
- Potential Impact Area
- Streams
- Historic Sites
- National Priority List Sites
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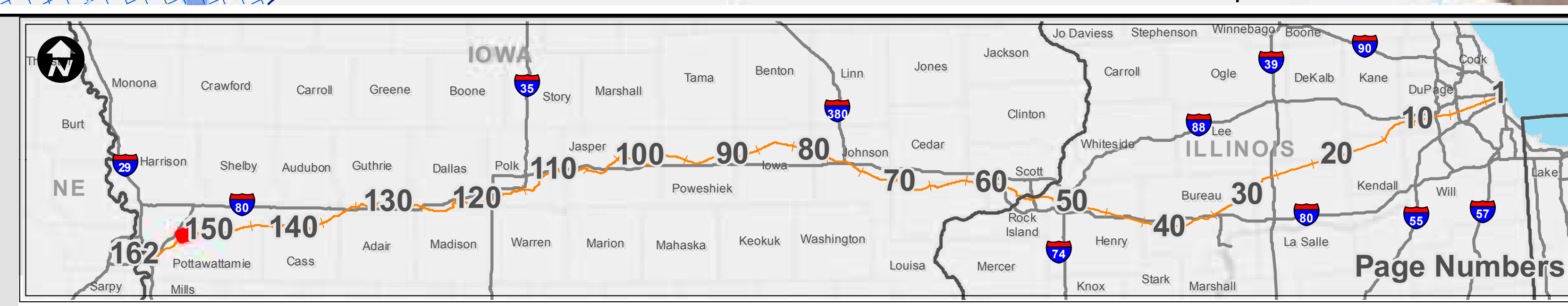
- City Boundary
- County Border



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Route Alternative
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Streams
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Existing Severe Level Noise
Future Severe Level Noise
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Future Moderate Level Noise
Existing Vibration Contours
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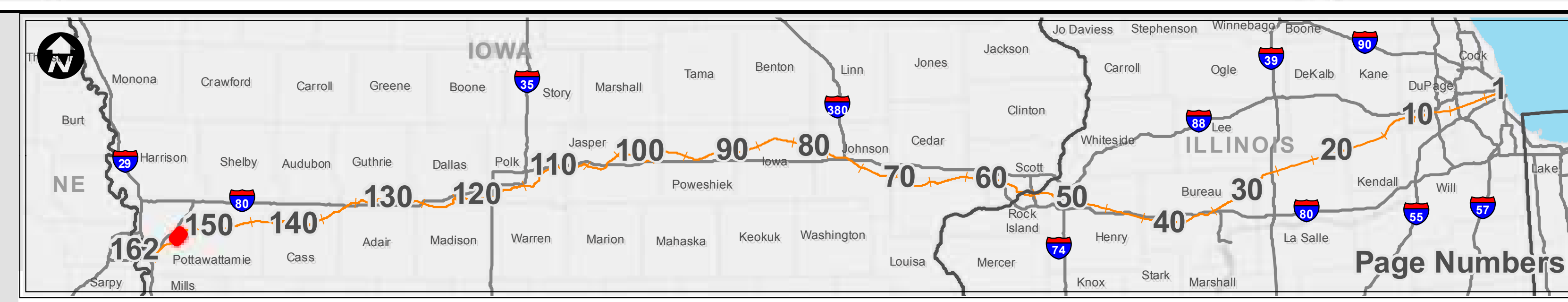
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



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Route Alternative
Potential Impact Area
Streams
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Existing Severe Level Noise
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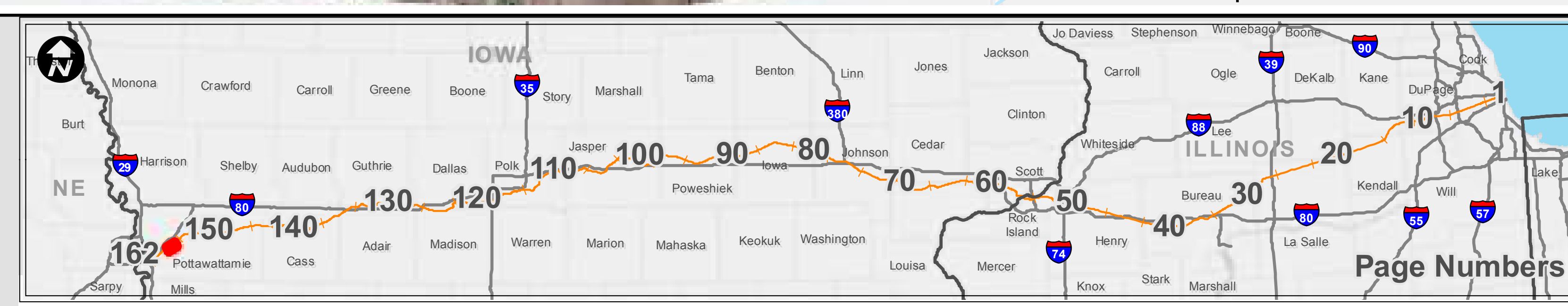
City Boundary
County Border



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- Route Alternative
- Potential Impact Area
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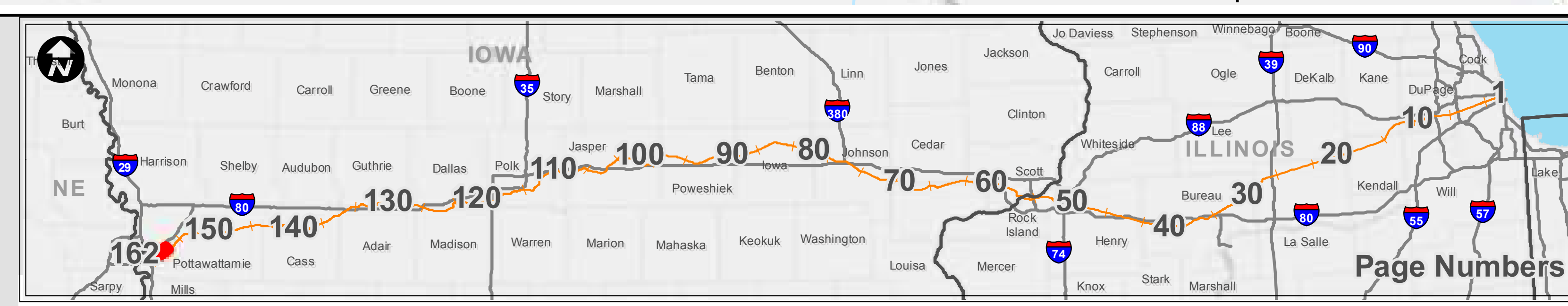

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Route Alternative
Potential Impact Area
Streams
Historic Sites
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Future Severe Level Noise
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Topeka Shiner Critical Habitat
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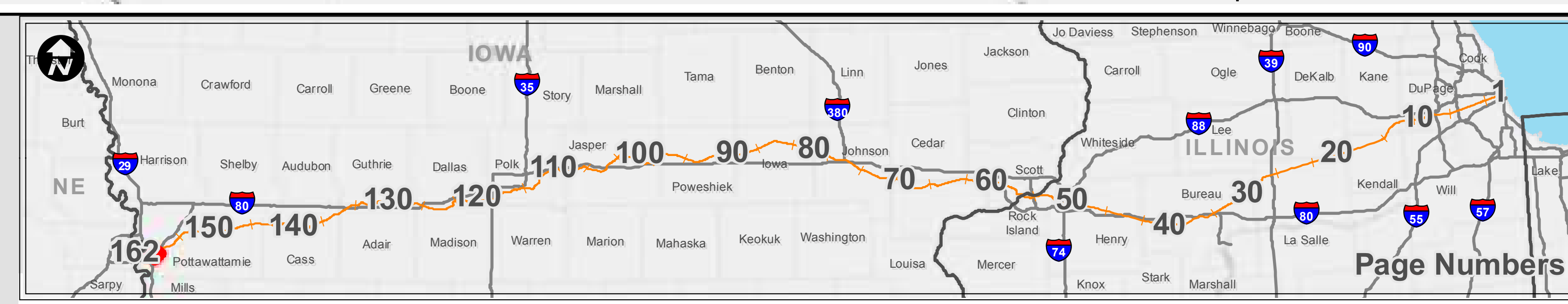

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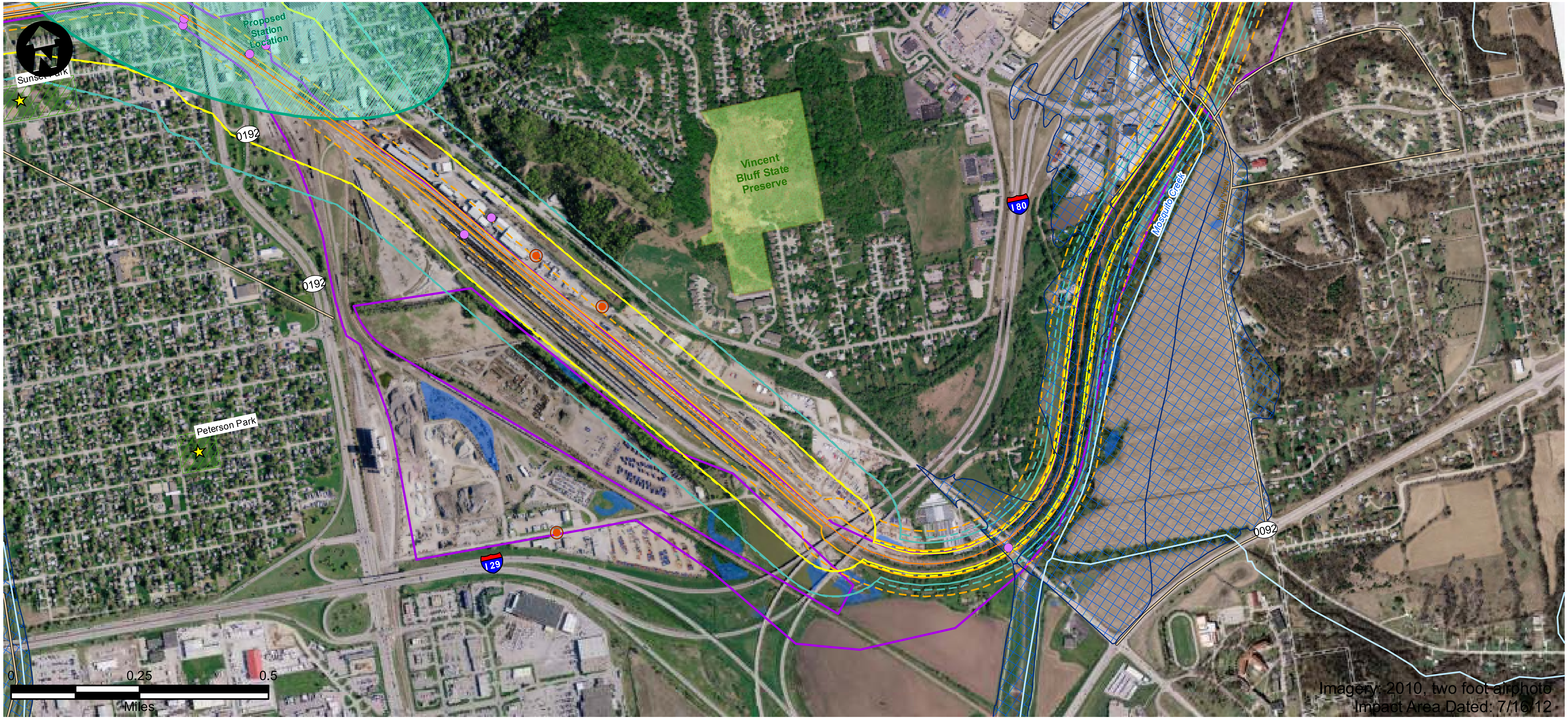

Route Alternative	Recreation Area
Potential Impact Area	Existing Severe Level Noise
Streams	Future Severe Level Noise
Historic Sites	Existing Moderate Level Noise
National Priority List Sites	Future Moderate Level Noise
Hazardous Material Sites	Existing Vibration Contours
Omaha & IA Trails	Future Vibration Contours
Parks	NWI Wetland (PAB~, PEM~, PFO, and PSS~)
IA State Recreational Land	NWI Lake or Pond
	100-Year Floodplain

USFWS Land
IA Prairies
IA Forest Stands
IA Wildlife Management Areas
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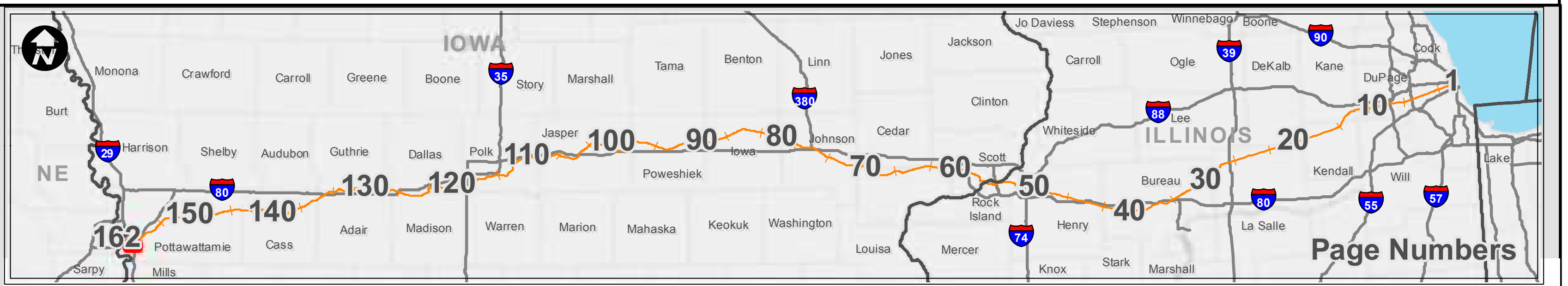

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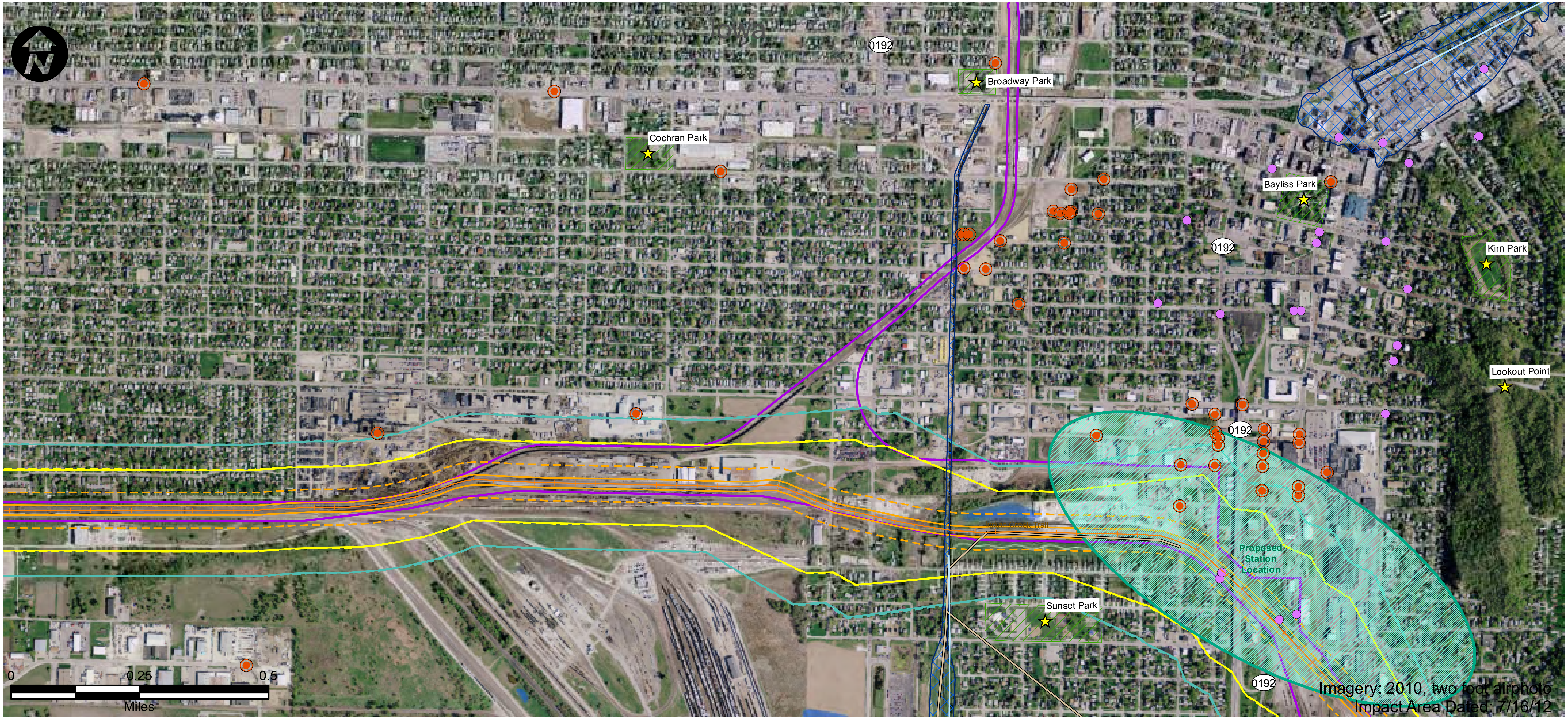

Route Alternative
Potential Impact Area
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Omaha & IA Trails
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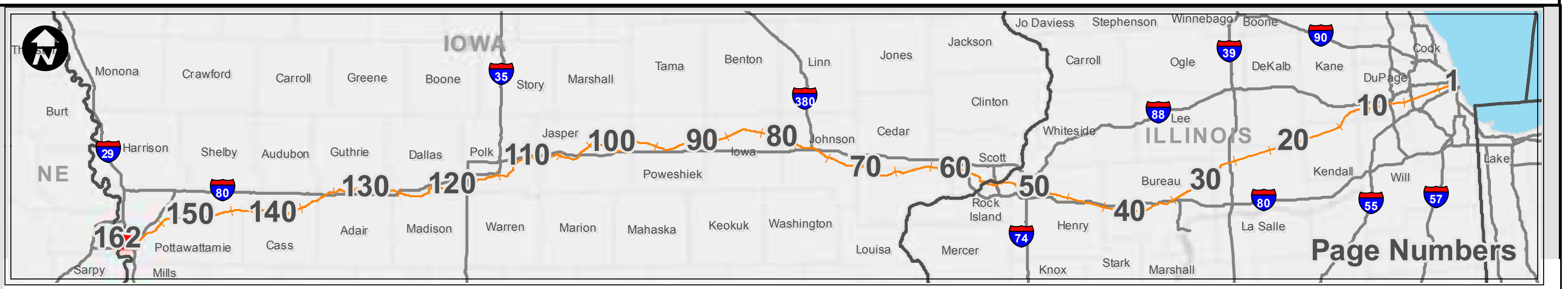

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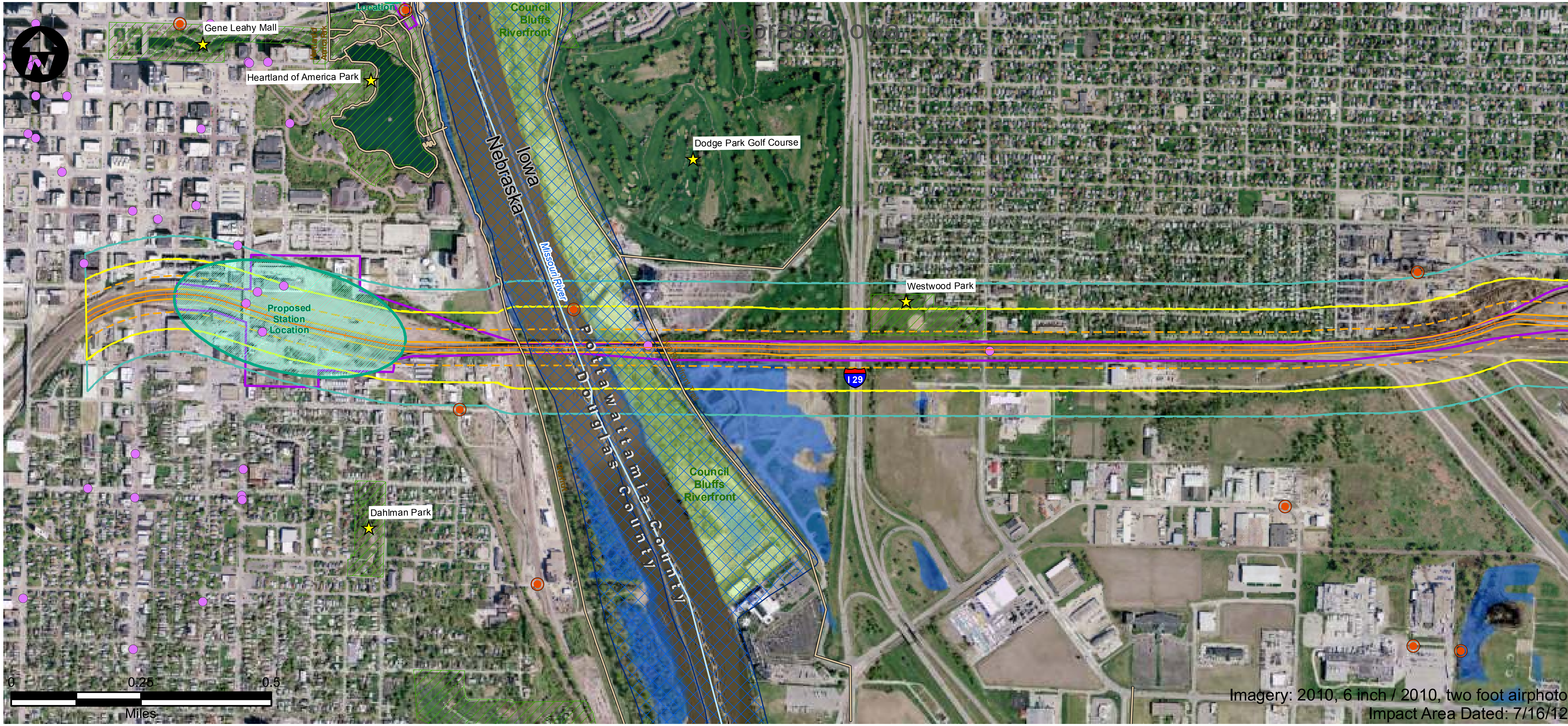

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Potential Impact Area
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Omaha & IA Trails
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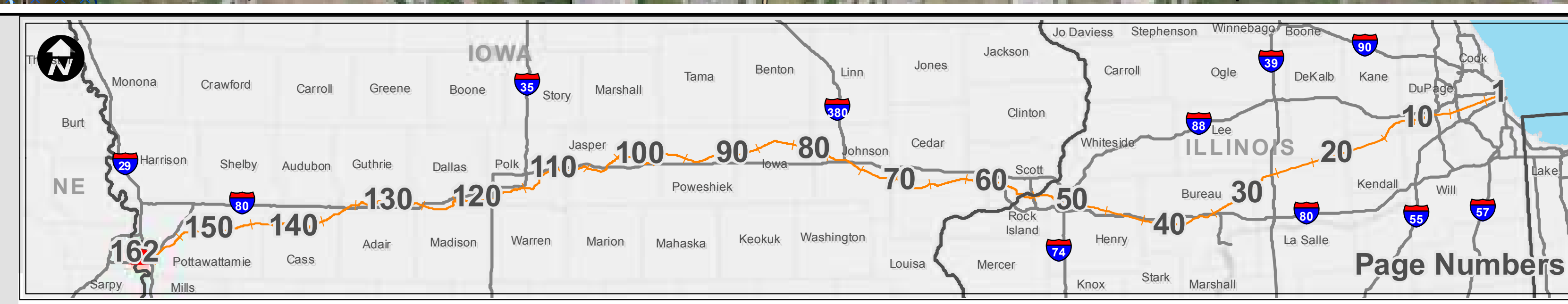

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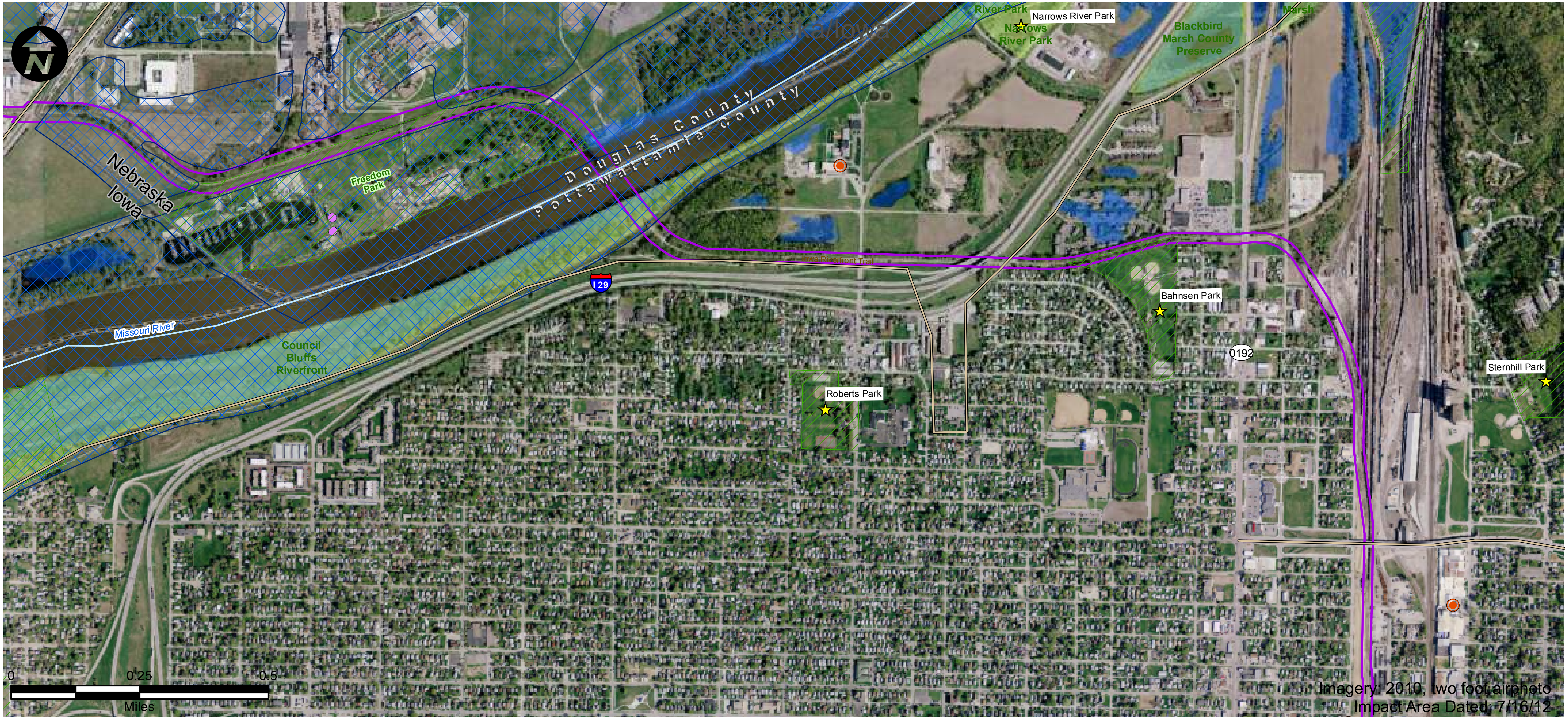

Route Alternative
Potential Impact Area
Streams
Historic Sites
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Hazardous Material Sites
Omaha & IA Trails
Parks
IA State Recreational Land

Recreation Area
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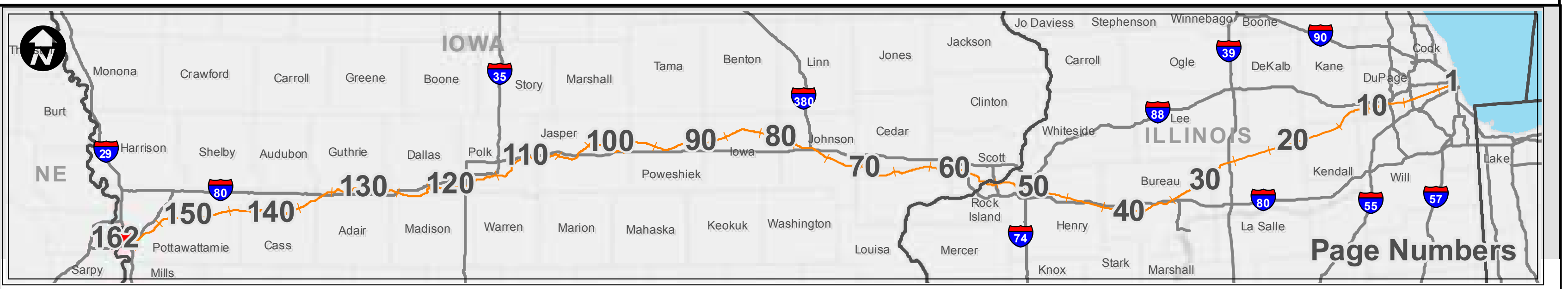

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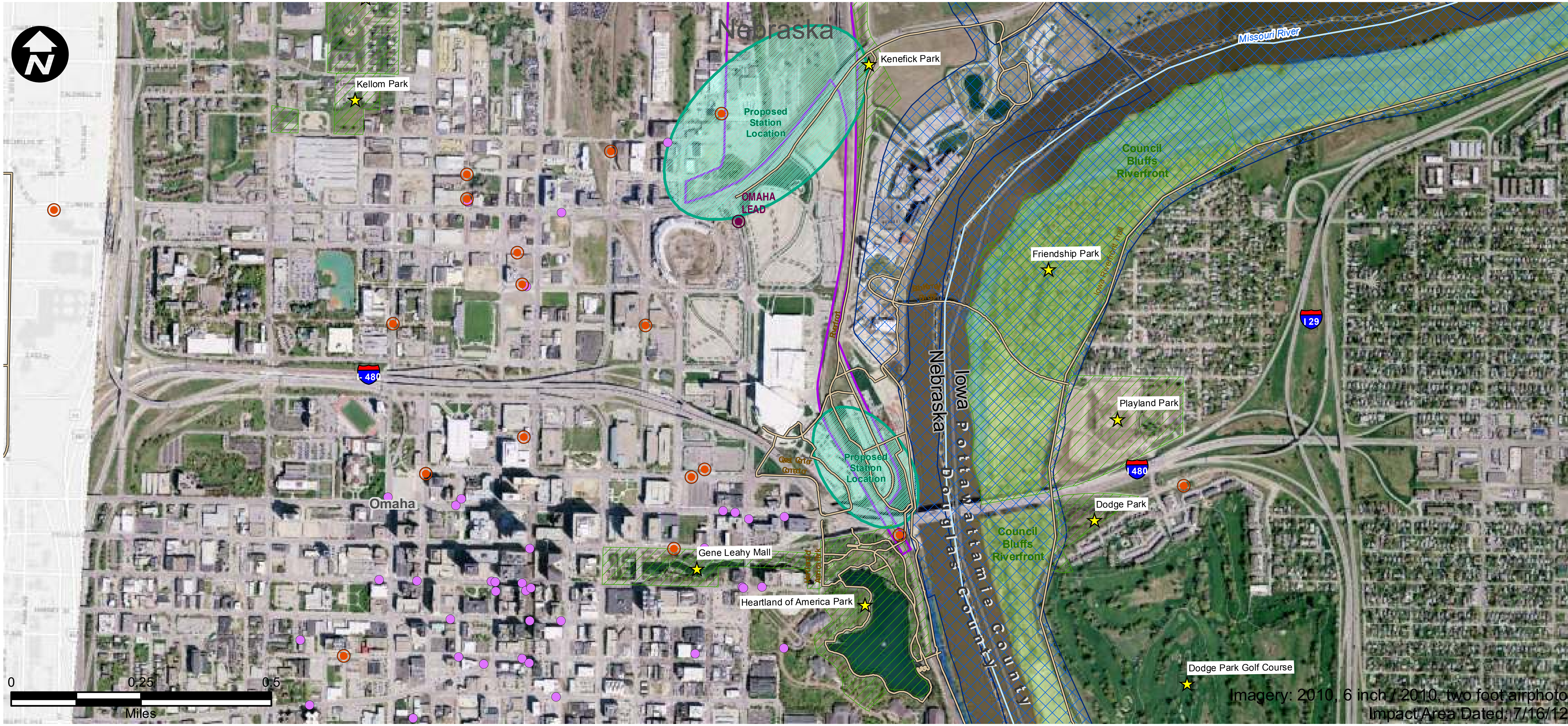

Route Alternative
Potential Impact Area
Streams
Historic Sites
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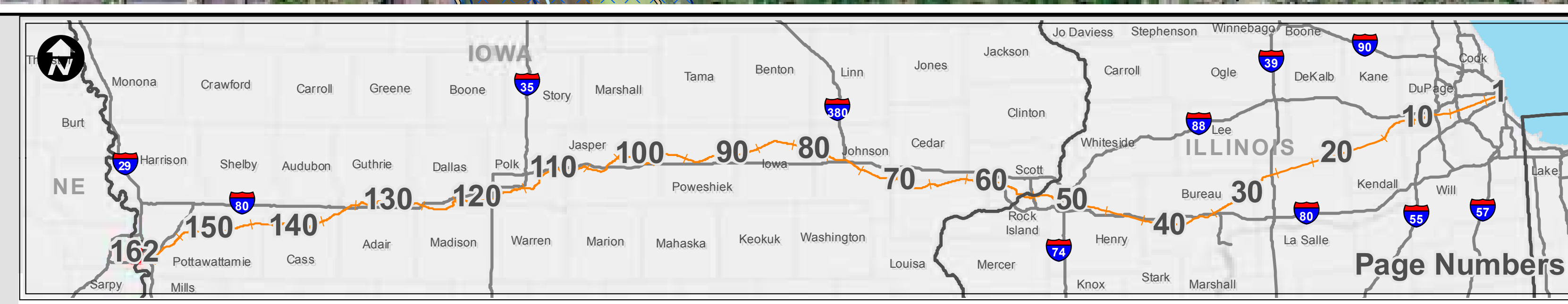
NWI Wetland *(PAB~, PEM~, PFO, and PSS~)*
NWI Lake or Pond
100-Year Floodplain
USFWS Land
IA Prairies
IA Forest Stands
IA Wildlife Management Areas
IL State Natural Area
IL County Forest Preserves
Topeka Shiner Critical Habitat
City Boundary
County Border



Iowa Department of Transportation

Potential Impact Area

Chicago to Council Bluffs - Omaha
Regional Passenger Rail System Planning Study

DATE
October 2012

FIGURE
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APPENDIX C

SOCIOECONOMIC ENVIRONMENT

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Table 1. Population Changes of Counties Intersected within the Study Area

Census Geography	Population			Percent Population Change		
	1970	2000	2010	1970-2000	1970-2010	2000-2010
United States	203,211,926	281,421,906	308,745,538	38.5%	51.9%	9.7%
State of Illinois	11,113,976	12,419,293	12,830,632	11.7%	15.4%	3.3%
State of Iowa	2,824,376	2,926,324	3,046,355	3.6%	7.9%	4.1%
State of Nebraska	1,483,493	1,711,263	1,826,341	15.4%	23.1%	6.7%
Illinois Counties within the Study Area						
Cook	5,492,369	5,376,848	5,194,675	-2.1%	-5.4%	-3.4%
DuPage	491,882	904,054	916,924	83.8%	86.4%	1.4%
Kane	251,005	404,119	515,269	61.0%	105.3%	27.5%
Kendall	26,374	54,544	114,736	106.8%	335.0%	110.4%
DeKalb	71,654	88,969	105,160	24.2%	46.8%	18.2%
LaSalle	111,409	111,533	113,924	0.1%	2.3%	2.1%
Bureau	38,541	35,503	34,978	-7.9%	-9.2%	-1.5%
Henry	53,217	51,020	50,486	-4.1%	-5.1%	-1.0%
Rock Island	166,734	149,374	147,546	-10.4%	-11.5%	-1.2%
Iowa Counties within the Study Area						
Scott	142,687	158,668	165,224	11.2%	15.8%	4.1%
Muscatine	37,181	41,722	42,745	12.2%	15.0%	2.5%
Cedar	17,655	18,187	18,499	3.0%	4.8%	1.7%
Johnson	72,127	111,006	130,882	53.9%	81.5%	17.9%
Iowa	15,419	15,671	16,355	1.6%	6.1%	4.4%
Poweshiek	18,803	18,815	18,914	0.1%	0.6%	0.5%
Jasper	35,425	37,213	36,842	5.0%	4.0%	-1.0%
Polk	286,101	374,601	430,640	30.9%	50.5%	15.0%
Dallas	26,085	40,750	66,135	56.2%	153.5%	62.3%
Madison	11,558	14,019	15,679	21.3%	35.7%	11.8%
Guthrie	12,243	11,353	10,954	-7.3%	-10.5%	-3.5%
Adair	9,487	8,243	7,682	-13.1%	-19.0%	-6.8%
Cass	17,007	14,684	13,956	-13.7%	-17.9%	-5.0%
Pottawattamie	86,991	87,704	93,158	0.8%	7.1%	6.2%
Nebraska Counties within the Study Area						
Douglas	389,455	463,585	517,110	19.0%	32.8%	11.5%
County Totals						
	7,881,409	8,592,185	8,778,473	9.0%	11.4%	2.2%

U.S. Census Bureau, April 2010; U.S. Census Bureau, February, 1982.

Table 2. Population Changes of Illinois Cities and Villages within ¼-Mile of the Study Area

Census Geography	Population			Percent Population Change		
	1970	2000	2010	1970-2000	1970-2010	2000-2010
State of Illinois	11,113,976	12,419,293	12,830,632	11.7%	15.4%	3.3%
Illinois cities and villages within 1/4-mile of the Study Area						
Chicago, IL	3,369,357	2,896,016	2,695,598	-14.0%	-20.0%	-6.9%
Cicero, IL	67,058	85,616	83,891	27.7%	25.1%	-2.0%
Berwyn, IL	52,502	54,016	56,657	2.9%	7.9%	4.9%
Riverside, IL	10,357	8,895	8,875	-14.1%	-14.3%	-0.2%
Lyons, IL	11,124	10,255	10,729	-7.8%	-3.6%	4.6%
Brookfield, IL	20,284	9,078	18,978	-55.2%	-6.4%	109.1%
La Grange Park, IL	15,459	13,295	13,579	-14.0%	-12.2%	2.1%
La Grange, IL	17,814	15,608	15,550	-12.4%	-12.7%	-0.4%
Western Springs, IL	13,029	12,493	12,975	-4.1%	-0.4%	3.9%
Hinsdale, IL	15,918	17,349	16,816	9.0%	5.6%	-3.1%
Westmont, IL	8,832	24,554	24,685	178.0%	179.5%	0.5%
Clarendon Hills, IL	6,750	7,610	8,427	12.7%	24.8%	10.7%
Downers Grove, IL	32,544	48,724	47,833	49.7%	47.0%	-1.8%
Lisle, IL	5,329	21,182	22,390	297.5%	320.2%	5.7%
Naperville, IL	22,794	128,358	141,853	463.1%	522.3%	10.5%
Aurora, IL	74,389	142,990	197,899	92.2%	166.0%	38.4%
Montgomery, IL	3,278	5,471	18,438	66.9%	462.5%	237.0%
Oswego, IL	1,862	13,326	30,355	615.7%	1530.2%	127.8%
Yorkville, IL	2,049	6,189	16,921	202.0%	725.8%	173.4%
Plano, IL	4,664	5,633	10,856	20.8%	132.8%	92.7%
Sandwich, IL	5,056	6,509	7,421	28.7%	46.8%	14.0%
Somonauk, IL	1,112	1,295	1,893	16.5%	70.2%	46.2%
Leland, IL	743	970	977	30.6%	31.5%	0.7%
Earlville, IL	1,410	1,778	1,701	26.1%	20.6%	-4.3%
Mendota, IL	6,902	7,272	7,372	5.4%	6.8%	1.4%
Arlington, IL	250	211	193	-15.6%	-22.8%	-8.5%
Malden, IL	262	343	362	30.9%	38.2%	5.5%
Princeton, IL	6,959	7,501	7,660	7.8%	10.1%	2.1%
Wyanet, IL	1,005	1,028	991	2.3%	-1.4%	-3.6%
Sheffield, IL	1,038	946	926	-8.9%	-10.8%	-2.1%
Mineral, IL	286	272	237	-4.9%	-17.1%	-12.9%
Annawan, IL	787	868	878	10.3%	11.6%	1.2%
Atkinson, IL	1,053	1,001	972	-4.9%	-7.7%	-2.9%
Geneseo, IL	5,840	6,480	6,586	11.0%	12.8%	1.6%
Colona, IL	1,293	5,173	5,099	300.1%	294.4%	-1.4%
Carbon Cliff, IL	1,369	1,689	2,134	23.4%	55.9%	26.3%
Silvis, IL	5,907	3,482	7,479	-41.1%	26.6%	114.8%
East Moline, IL	20,956	20,333	21,302	-3.0%	1.7%	4.8%
Moline, IL	46,237	43,768	43,483	-5.3%	-6.0%	-0.7%
Rock Island, IL	50,166	39,684	39,018	-20.9%	-22.2%	-1.7%
Totals						
	3,914,024	3,677,261	3,609,989	-6.0%	-7.8%	-1.8%

U.S. Census Bureau, April 2010; U.S. Census Bureau, February, 1982.

Table 3. Population Changes of Iowa and Nebraska Cities and Villages within ¼-Mile of the Study Area

Census Geography	Population			Percent Population Change		
	1970	2000	2010	1970-2000	1970-2010	2000-2010
State of Iowa	2,824,376	2,926,324	3,046,355	3.6%	7.9%	4.1%
Iowa and Nebraska Cities and Villages within 1/4-mile of the Study Area						
Davenport, IA	98,469	98,359	99,685	-0.1%	1.2%	1.3%
Walcott, IA	989	1,528	1,629	54.5%	64.7%	6.6%
Stockton, IA	222	182	197	-18.0%	-11.3%	8.2%
Durant, IA	1,472	1,677	1,832	13.9%	24.5%	9.2%
Wilton, IA	1,873	2,829	2,802	51.0%	49.6%	-1.0%
Atalissa, IA	244	283	311	16.0%	27.5%	9.9%
West Liberty, IA	2,296	3,332	3,736	45.1%	62.7%	12.1%
Iowa City, IA	46,850	62,220	67,862	32.8%	44.8%	9.1%
University Heights, IA	1,265	987	1,051	-22.0%	-16.9%	6.5%
Coralville, IA	6,130	15,123	18,907	146.7%	208.4%	25.0%
Tiffin, IA	299	975	1,947	226.1%	551.2%	99.7%
Oxford, IA	666	705	807	5.9%	21.2%	14.5%
Marengo, IA	2,235	2,535	2,528	13.4%	13.1%	-0.3%
Ladora, IA	321	287	283	-10.6%	-11.8%	-1.4%
Victor, IA	949	952	893	0.3%	-5.9%	-6.2%
Brooklyn, IA	1,410	1,367	1,468	-3.0%	4.1%	7.4%
Malcom, IA	388	352	287	-9.3%	-26.0%	-18.5%
Grinnell, IA	8,402	9,105	9,218	8.4%	9.7%	1.2%
Kellogg, IA	607	606	599	-0.2%	-1.3%	-1.2%
Newton, IA	15,619	15,579	15,254	-0.3%	-2.3%	-2.1%
Lambs Grove, IA	239	225	172	-5.9%	-28.0%	-23.6%
Colfax, IA	2,293	2,223	2,093	-3.1%	-8.7%	-5.8%
Mitchellville, IA	1,341	1,715	2,254	27.9%	68.1%	31.4%
Altoona, IA	2,883	10,345	14,541	258.8%	404.4%	40.6%
Pleasant Hill, IA	1,535	5,070	8,785	230.3%	472.3%	73.3%
Des Moines, IA	201,404	198,682	203,433	-1.4%	1.0%	2.4%
West Des Moines, IA	16,441	46,403	56,609	182.2%	244.3%	22.0%
Van Meter, IA	464	866	1,016	86.6%	119.0%	17.3%
Earlham, IA	974	1,298	1,450	33.3%	48.9%	11.7%
De Soto, IA	369	1,009	1,050	173.4%	184.6%	4.1%
Dexter, IA	652	689	611	5.7%	-6.3%	-11.3%
Stuart, IA	1,354	1,712	1,648	26.4%	21.7%	-3.7%
Menlo, IA	391	365	353	-6.6%	-9.7%	-3.3%
Casey, IA	561	478	426	-14.8%	-24.1%	-10.9%
Adair, IA	750	839	781	11.9%	4.1%	-6.9%
Anita, IA	1,101	1,049	972	-4.7%	-11.7%	-7.3%
Wiota, IA	171	149	116	-12.9%	-32.2%	-22.1%
Atlantic, IA	7,306	7,257	7,112	-0.7%	-2.7%	-2.0%
Hancock, IA	228	207	196	-9.2%	-14.0%	-5.3%
McClelland, IA	146	129	151	-11.6%	3.4%	17.1%
Council Bluffs, IA	60,348	58,268	62,230	-3.4%	3.1%	6.8%
Omaha, NE	346,929	390,007	408,958	12.4%	17.9%	4.9%
Totals						
	491,657	557,961	597,295	13.5%	21.5%	7.0%

U.S. Census Bureau, April 2010; U.S. Census Bureau, February, 1982.

Table 4. 2010 Industry Sectors for Study Area Counties

Census Geography	Agriculture	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing	Information	Finance, Insurance, and Real Estate and Rental Housing	Professional, Scientific, Management, Administrative and Waste Management Services	Educational Services, Health Care and Social Assistance	Other Services, Except Public Administration	Public Administration
State of Illinois	1.1%	6.0%	13.0%	3.4%	10.8%	5.9%	2.3%	7.8%	10.8%	21.6%	4.8%	3.8%
State of Iowa	4.1%	6.3%	15.0%	3.3%	11.5%	4.8%	2.2%	7.7%	6.6%	23.5%	4.3%	3.2%
Study Area Illinois Counties												
Cook	0.2%	5.4%	11.3%	3.1%	9.8%	6.3%	2.6%	8.9%	13.2%	21.3%	4.9%	3.8%
DuPage	0.2%	5.5%	12.5%	5.0%	10.7%	5.4%	2.7%	9.9%	13.7%	19.7%	4.7%	2.3%
Kane	0.5%	7.4%	17.5%	4.4%	11.6%	5.2%	2.5%	7.4%	12.1%	17.8%	4.1%	2.2%
Kendall	0.6%	7.5%	13.4%	3.4%	12.1%	6.5%	3.0%	8.4%	10.4%	19.2%	4.1%	4.3%
DeKalb	3.4%	6.5%	31.7%	3.4%	11.5%	4.3%	0.8%	4.0%	4.8%	15.8%	4.1%	3.2%
LaSalle	3.4%	7.9%	15.2%	3.1%	13.7%	6.7%	1.5%	4.2%	6.4%	20.0%	5.1%	3.7%
Bureau	5.8%	6.0%	16.4%	4.6%	15.5%	7.4%	1.6%	4.7%	4.5%	19.7%	5.0%	2.2%
Henry	3.3%	8.4%	14.4%	3.9%	13.0%	6.6%	2.1%	6.2%	6.7%	19.5%	4.1%	5.1%
Rock Island	1.1%	5.0%	16.9%	3.3%	11.4%	6.0%	1.9%	5.3%	8.3%	21.1%	5.6%	4.7%
Study Area Iowa Counties												
Scott	1.0%	5.6%	16.2%	3.6%	12.0%	5.3%	2.2%	6.7%	8.2%	20.7%	5.0%	4.3%
Muscatine	2.9%	6.0%	30.9%	1.9%	10.7%	4.7%	1.0%	4.8%	6.8%	18.4%	3.0%	2.4%
Cedar	5.8%	8.8%	16.2%	3.7%	9.3%	5.7%	2.6%	3.7%	6.2%	24.6%	4.2%	3.8%
Johnson	1.2%	4.4%	7.1%	1.9%	11.0%	3.2%	2.0%	5.2%	7.1%	41.4%	3.0%	1.9%
Iowa	6.3%	8.3%	21.8%	3.3%	11.0%	4.1%	1.9%	2.7%	4.2%	22.4%	3.9%	2.0%
Poweshiek	6.2%	5.7%	16.3%	2.4%	9.7%	3.5%	2.4%	6.6%	3.5%	30.1%	3.9%	1.1%
Jasper	3.3%	5.9%	17.9%	4.0%	10.9%	4.4%	3.2%	8.0%	7.2%	19.5%	5.7%	3.7%
Polk	1.0%	6.3%	8.0%	3.5%	11.3%	4.4%	2.9%	16.9%	8.9%	20.0%	4.3%	4.2%
Dallas	2.1%	7.1%	8.4%	3.5%	10.6%	3.9%	2.6%	21.6%	8.9%	18.9%	3.7%	3.3%
Madison	4.0%	13.5%	5.5%	2.3%	13.5%	5.1%	3.3%	14.9%	8.1%	17.8%	4.6%	2.7%
Guthrie	10.6%	9.4%	10.6%	3.6%	9.3%	6.3%	2.7%	11.5%	3.9%	18.5%	6.9%	3.2%
Adair	13.9%	9.2%	16.5%	3.6%	9.3%	6.0%	0.6%	7.0%	2.5%	19.1%	4.2%	5.6%
Cass	8.6%	8.3%	13.1%	2.3%	13.6%	4.8%	2.1%	5.0%	5.3%	22.4%	5.2%	1.5%
Pottawattamie	2.5%	7.7%	9.8%	3.4%	12.7%	8.0%	2.1%	9.7%	7.0%	20.7%	4.8%	3.0%
Study Area Nebraska Counties												
Douglas	263,173	1,695	0.6%	16,504	6.3%	22,935	8.7%	8,517	3.2%	30,269	11.5%	13,947

U.S. Census Bureau, American Community Survey, 2010

Table 5. 2010 Employment Status for Study Area Counties

Geography	In Labor Force	Employed	Unemployed	Unemployment Rate
State of Illinois	6,654,049	6,062,848	569,744	8.6%
State of Iowa	1,642,493	1,553,594	86,487	5.3%
Study Area Illinois Counties				
Cook	2,708,191	2,438,989	267,681	9.9%
DuPage	505,560	470,105	35,091	6.9%
Kane	264,462	243,846	20,481	7.7%
Kendall	57,090	53,143	3,750	6.6%
DeKalb	31,329	28,636	2,683	8.6%
LaSalle	90,115	54,468	5,718	6.3%
Bureau	18,220	16,862	1,346	7.4%
Henry	25,470	24,077	1,336	5.2%
Rock Island	75,387	69,399	5,850	7.8%
Study Area Iowa Counties				
Scott	86,251	81,233	4,705	5.5%
Muscatine	22,755	20,849	1,832	8.1%
Cedar	10,588	10,187	396	3.7%
Johnson	75,817	72,565	3,194	4.2%
Iowa	9,226	8,912	314	3.4%
Poweshiek	10,548	9,974	559	5.3%
Jasper	18,643	17,613	1,023	5.5%
Polk	239,251	225,897	12,849	5.4%
Dallas	34,647	33,340	1,217	3.5%
Madison	8,444	8,086	353	4.2%
Guthrie	5,663	5,458	205	3.6%
Adair	4,027	3,844	183	4.5%
Cass	7,454	7,111	343	4.6%
Pottawattamie	50,284	46,954	3,286	6.5%
Study Area Nebraska Counties				
Douglas	281,214	263,173	17,320	6.2%

U.S. Census Bureau, American Community Survey,
2006-2010 American Community Survey 5-Year Estimates

Table 6. 2010 Per Capita Income for Study Area Counties

Census Geography	2010 Per Capita Income	Percent of National Average
United States	26,059	NA
State of Illinois	27,325	104.9%
State of Iowa	24,883	95.5%
Illinois Counties within the Study Area		
Cook	29,335	112.6%
DuPage	35,302	135.5%
Kane	28,266	108.5%
Kendall	29,938	114.9%
DeKalb	22,258	85.4%
LaSalle	24,156	92.7%
Bureau	24,537	94.2%
Henry	25,515	97.9%
Rock Island	24,566	94.3%
Iowa Counties within the Study Area		
Scott	27,281	104.7%
Muscatine	23,756	91.2%
Cedar	24,742	94.9%
Johnson	26,942	103.4%
Iowa	26,721	102.5%
Poweshiek	27,334	104.9%
Jasper	26,942	103.4%
Polk	27,466	105.4%
Dallas	32,156	123.4%
Madison	27,337	104.9%
Guthrie	27,334	104.9%
Adair	23,497	90.2%
Cass	21,787	83.6%
Pottawattamie	23,108	88.7%
Nebraska Counties within the Study Area		
Douglas	28,092	107.8%

*U.S. Census Bureau, American Community Survey,
2010 American Community Survey 1-Year Estimates*

APPENDIX D

TITLE VI AND EJ

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Table 1. 2010 Study Area County Minority Population

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Some Other Race	Two or More Races	Total Minorities		Raw % Greater than State Average	Total % Above Statewide Average	Pot. EJ Population (Y/N)
									Total	%			
State of Illinois	12,745,359	9,136,680	1,860,305	24,729	571,537	3,290	927,604	221,214	3,608,679	28.3%	-	-	-
State of Iowa	3,016,267	2,773,410	82,682	9,825	50,363	961	48,535	50,491	242,857	8.1%	-	-	-
State of Nebraska	1,799,125	1,587,857	77,986	15,651	29,624	1,209	49,026	37,772	211,268	11.7%	-	-	-
Study Area Illinois Counties													
Cook	***5,172,848***	***2,799,307***	***1,303,321***	***10,361***	***316,649***	***1,299***	***657,091***	***84,820***	***2,373,541***	***45.9%***	***17.6%***	***62.1%***	***Y***
DuPage	911,481	732,256	40,452	1,937	91,222	280	29,592	15,742	179,225	19.7%	-8.7%	-30.6%	N
Kane	502,628	375,143	27,972	865	16,390	67	72,342	9,849	127,485	25.4%	-2.9%	-10.4%	N
Kendall	105,602	90,183	4,993	84	3,075	0	4,132	3,135	15,419	14.6%	-13.7%	-48.4%	N
DeKalb	104,026	88,513	6,264	173	2,518	83	4,477	1,998	15,513	14.9%	-13.4%	-47.3%	N
LaSalle	113,789	105,982	1,601	143	604	0	3,266	2,283	7,897	6.9%	-21.4%	-75.5%	N
Bureau	35,083	33,557	258	112	251	0	637	268	1,526	4.3%	-24.0%	-84.6%	N
Henry	50,477	47,781	762	176	136	22	1,035	565	2,696	5.3%	-23.0%	-81.1%	N
Rock Island	147,524	120,440	13,090	432	2,386	16	7,407	3,753	27,084	18.4%	-10.0%	-35.2%	N
Study Area Iowa Counties													
Scott	***162,184***	***141,115***	***11,119***	***396***	***2,945***	***0***	***2,129***	***4,480***	***21,069***	***13.0%***	***4.9%***	***61.3%***	***Y***
Muscatine	42,501	39,391	608	70	320	0	1,434	678	3,110	7.3%	-0.7%	-9.1%	N
Cedar	18,414	17,970	8	28	41	0	107	260	444	2.4%	-5.6%	-70.1%	N
Johnson	***126,994***	***109,894***	***5,534***	***270***	***6,685***	***12***	***2,018***	***2,581***	***17,100***	***13.5%***	***5.4%***	***67.2%***	***Y***
Iowa	16,353	15,996	51	20	15	0	45	226	357	2.2%	-5.9%	-72.9%	N
Poweshiek	19,012	18,105	249	3	212	9	124	310	907	4.8%	-3.3%	-40.7%	N
Jasper	37,050	35,907	470	133	130	0	118	292	1,143	3.1%	-5.0%	-61.7%	N
Polk	***419,301***	***358,859***	***23,696***	***978***	***14,589***	***93***	***11,267***	***9,819***	***60,442***	***14.4%***	***6.4%***	***79.0%***	***Y***
Dallas	61,714	56,949	761	19	1,384	0	1,765	836	4,765	7.7%	-0.3%	-4.1%	N
Madison	15,488	15,203	44	0	5	0	35	201	285	1.8%	-6.2%	-77.1%	N
Guthrie	11,040	10,759	39	29	40	0	56	117	281	2.5%	-5.5%	-68.4%	N
Adair	7,779	7,611	28	17	33	0	0	90	168	2.2%	-5.9%	-73.2%	N
Cass	13,969	13,647	162	17	11	0	18	114	322	2.3%	-5.7%	-71.4%	N
Pottawattamie	91,928	86,132	1,280	247	524	30	2,259	1,453	5,793	6.3%	-1.7%	-21.7%	N
Study Area Nebraska Counties													
Douglas	***505,545***	***397,810***	***56,736***	***2,593***	***11,875***	***462***	***21,005***	***15,064***	***107,735***	***21.3%***	***9.6%***	***81.5%***	***Y***

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 2. 2010 Illinois Study Area City and Village Minority Population

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Some Other Race	Two or More Races	Total Minorities		% Above Statewide Average	Pot. EJ Population (Y/N)
								Total	%		
State of Illinois	12,745,359	9,136,680	1,860,305	24,729	571,537	927,604	221,214	3,608,679	28.3%	-	-
Illinois Cities Within 1/4 Mile of the Study Area											
Chicago	***2,703,466***	***1,153,408***	***919,776***	***6,148***	***145,463***	***434,539***	***44,132***	***1,551,071***	***57.4%***	***102.6%***	***Y***
Cicero	***83,332***	***25,124***	***2,956***	***311***	***399***	***52,354***	***2,188***	***58,261***	***69.9%***	***146.9%***	***Y***
Berwyn	***55,584***	***30,498***	***3,217***	***221***	***895***	***19,694***	***1,059***	***25,103***	***45.2%***	***59.5%***	***Y***
Riverside	8,737	7,363	33	18	358	856	109	1,377	15.8%	-44.3%	N
Lyons	10,530	8,738	343	140	310	844	155	1,793	17.0%	-39.9%	N
Brookfield	18,807	16,956	282	4	304	972	289	1,856	9.9%	-65.1%	N
La Grange Park	13,387	12,299	582	0	205	263	38	1,089	8.1%	-71.3%	N
La Grange	15,430	14,291	631	0	174	109	225	1,139	7.4%	-73.9%	N
Western Springs	12,657	12,421	34	0	73	65	64	237	1.9%	-93.4%	N
Hinsdale	16,663	15,283	102	8	955	77	208	1,359	8.2%	-71.2%	N
Westmont	24,494	17,384	1,997	150	3,233	1,175	555	7,116	29.1%	2.6%	N
Clarendon Hills	8,275	7,286	98	16	609	165	101	991	12.0%	-57.7%	N
Downers Grove	47,938	42,898	1,426	27	2,389	920	278	5,044	10.5%	-62.8%	N
Lisle	22,288	17,332	1,228	11	2,757	561	399	4,964	22.3%	-21.3%	N
Naperville	140,838	109,928	6,095	313	19,417	2,531	2,554	30,942	22.0%	-22.4%	N
Aurora	***190,437***	***108,857***	***19,985***	***595***	***12,125***	***43,102***	***5,773***	***81,645***	***42.9%***	***51.4%***	***Y***
Montgomery	15,957	11,632	1,005	31	735	2,035	519	4,331	27.1%	-4.1%	N
Oswego	27,719	23,631	1,718	8	991	570	801	4,098	14.8%	-47.8%	N
Yorkville	15,065	13,865	355	0	239	368	238	3,604	23.9%	-15.5%	N
Plano	9,472	7,390	369	0	17	1,260	436	2,091	22.1%	-22.0%	N
Sandwich	7,707	7,301	0	0	29	350	27	406	5.3%	-81.4%	N
Somonauk	2,007	1,803	40	8	0	80	76	204	10.2%	-64.1%	N
Leland	777	769	0	5	0	3	0	9	1.2%	-95.9%	N
Earlville	1,728	1,662	0	0	0	23	43	66	3.8%	-86.5%	N
Mendota	7,274	6,143	92	0	12	981	46	1,131	15.5%	-45.1%	N
Arlington	191	177	0	0	0	14	0	14	7.3%	-74.1%	N
Malden	374	359	0	0	8	0	7	15	4.0%	-85.8%	N
Princeton	7,884	7,607	56	66	23	59	73	281	3.6%	-87.4%	N
Wyanet	1,118	1,072	4	0	32	2	8	46	4.1%	-85.5%	N
Sheffield	983	980	0	0	0	3	0	3	0.3%	-98.9%	N

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Some Other Race	Two or More Races	Total Minorities		% Above Statewide Average	Pot. EJ Population (Y/N)
								Total	%		
Mineral	239	234	0	0	0	0	5	5	2.1%	-92.6%	N
Annawan	936	889	30	6	4	7	0	47	5.0%	-82.3%	N
Atkinson	939	929	0	10	0	0	0	10	1.1%	-96.2%	N
Geneseo	6,476	6,082	12	0	0	192	190	394	6.1%	-78.5%	N
Colona	4,974	4,618	123	0	0	185	48	360	7.2%	-74.4%	N
Carbon Cliff	2,126	1,750	219	0	5	88	64	377	17.7%	-37.4%	N
Silvis	7,435	6,223	279	11	168	444	310	1,218	16.4%	-42.1%	N
East Moline	21,370	15,266	2,720	152	628	1,966	638	6,118	28.6%	1.1%	N
Moline	43,331	36,019	1,760	120	1,103	3,293	1,036	7,321	16.9%	-40.3%	N
Rock Island	38,817	28,393	7,570	86	302	1,280	1,186	1,186	3.1%	-89.2%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 3. 2010 Iowa and Nebraska Study Area City and Village Minority Population

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Some Other Race	Two or More Races	Total Minorities		% Above Statewide Average	Potential EJ Population (Y/N)
								Total	%		
State of Iowa	3,016,267	2,773,410	82,682	9,825	50,363	48,535	50,491	242,857	8.1%	-	-
State of Nebraska	1,799,125	1,587,857	77,986	15,651	29,624	49,026	37,772	211,268	11.7%	-	-
Iowa Cities and Villages within 1/4 mile of the Study Area											
Davenport	***98,325***	***80,787***	***10,234***	***264***	***2,183***	***1,674***	***3,183***	***17,584***	***17.9%***	***122.1%***	***Y***
Walcott	1,570	1,493	34	4	5	10	24	77	4.9%	-39.1%	N
Stockton	276	239	0	10	0	0	27	37	13.4%	66.5%	N
Durant	1,907	1,855	0	0	9	15	28	52	2.7%	-66.1%	N
Wilton	*2,801*	2,766	0	0	0	0	35	35	1.2%	-84.5%	N
Atalissa	470	468	0	0	0	0	2	36	7.7%	-4.9%	N
West Liberty	***3,659***	***3,091***	***179***	***20***	***27***	***223***	***119***	***568***	***15.5%***	***92.8%***	***Y***
Iowa City	***66,758***	***56,740***	***2,886***	***212***	***4,444***	***998***	***1,478***	***10,046***	***15.0%***	***86.9%***	***Y***
University Heights	1,111	1,040	15	0	31	20	5	74	6.7%	-17.3%	N
Coralville	***18,186***	***14,037***	***1,905***	***24***	***1,492***	***282***	***446***	***4,161***	***22.9%***	***184.2%***	***Y***
Tiffin	1,986	1,824	50	0	67	0	45	163	8.2%	1.9%	N
Oxford	737	727	0	0	10	0	0	10	1.4%	-83.1%	N
Marengo	2,546	2,461	0	0	0	9	76	86	3.4%	-58.0%	N
Ladora	213	211	2	0	0	0	0	2	0.9%	-88.3%	N
Victor	801	801	0	0	0	0	0	0	0.0%	-100.0%	N
Brooklyn	1,322	1,307	4	0	5	0	6	15	1.1%	-85.9%	N
Malcom	295	285	0	3	0	7	0	10	3.4%	-57.9%	N
Grinnell	9,265	8,442	228	0	189	126	280	280	3.0%	-62.5%	N
Kellogg	601	586	8	7	0	0	0	15	2.5%	-69.0%	N
Newton	15,371	14,941	115	32	86	20	177	431	2.8%	-65.2%	N
Lambs Grove	212	212	0	0	0	0	0	0	0.0%	-100.0%	N
Colfax	2,743	2,708	5	9	0	6	15	35	1.3%	-84.2%	N
Mitchellville	2,529	2,267	137	11	3	4	107	263	10.4%	29.2%	N
Altoona	13,757	13,010	167	34	163	251	132	771	5.6%	-30.4%	N
Pleasant Hill	8,100	7,526	285	0	144	68	77	574	7.1%	-12.0%	N
Des Moines	***202,095***	***157,640***	***19,539***	***739***	***8,826***	***8,887***	***6,464***	***44,604***	***22.1%***	***174.1%***	***Y***
West Des Moines	55,807	49,853	1,881	91	2,297	773	912	6,103	10.9%	35.8%	N
Van Meter	1,199	1,163	4	0	7	0	25	36	3.0%	-62.7%	N
Earlham	1,845	1,830	6	0	0	0	9	15	0.8%	-89.9%	N
De Soto	929	897	14	4	2	0	12	32	3.4%	-57.2%	N
Dexter	601	601	0	0	0	0	0	0	0.0%	-100.0%	N
Stuart	1,649	1,649	0	0	0	0	0	0	0.0%	-100.0%	N

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Some Other Race	Two or More Races	Total Minorities		% Above Statewide Average	Potential EJ Population (Y/N)
								Total	%		
Menlo	412	406	0	0	6	0	0	6	1.5%	-81.9%	N
Casey	455	450	0	0	0	0	5	5	1.1%	-86.4%	N
Adair	862	828	0	12	0	0	22	34	3.9%	-51.0%	N
Anita	1,049	1,044	0	0	4	0	1	6	0.6%	-92.9%	N
Wiota	147	147	0	0	0	0	0	0	0.0%	-100.0%	N
Atlantic	7,078	6,812	138	13	7	18	90	304	4.3%	-46.7%	N
Hancock	179	172	0	5	0	0	2	8	4.5%	-44.5%	N
McClelland	214	214	0	0	0	0	0	0	0.0%	-100.0%	N
Council Bluffs	61,340	56,201	1,166	194	486	2,173	1,120	5,163	8.4%	4.5%	N
Nebrask Cities within 1/4 mile of the Study Area											
Omaha	***407,334***	***310,064***	***53,251***	***2,457***	***8,639***	***20,252***	***12,671***	***97,316***	***23.9%***	***103.5%***	***Y***

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

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Table 4. 2010 Estimated County Population Below the Poverty Level

Census Geography	Total 2010 Population for whom poverty status is determined	2010 Estimated Population Below the Poverty Level		Potential EJ Population (Y/N)
		Total	Percent	-
State of Illinois	12,439,981	1,572,048	12.6%	-
State of Iowa	2,916,252	338,263	11.6%	-
State of Nebraska	1,744,704	206,227	11.8%	-
Illinois Counties within the Study Area				
Cook	5,096,774	778,340	15.3%	N
DuPage	897,226	50,996	5.7%	N
Kane	496,506	45,352	9.1%	N
Kendall	104,845	4,130	3.9%	N
DeKalb	95,675	14,003	14.6%	N
LaSalle	112,080	12,133	10.8%	N
Bureau	34,746	3,854	11.1%	N
Henry	49,511	5,133	10.4%	N
Rock Island	143,134	17,642	12.3%	N
Iowa Counties within the Study Area				
Scott	158,970	20,533	12.9%	N
Muscatine	41,977	5,759	13.7%	N
Cedar	18,232	1,308	7.2%	N
Johnson	118,453	21,506	18.2%	N
Iowa	15,885	1,425	9.0%	N
Poweshiek	17,119	1,916	11.2%	N
Jasper	34,772	4,278	12.3%	N
Polk	411,095	42,417	10.3%	N
Dallas	61,206	4,131	6.7%	N
Madison	15,201	1,340	8.8%	N
Guthrie	10,772	776	7.2%	N
Adair	7,693	817	10.6%	N
Cass	13,541	1,846	13.6%	N
Pottawattamie	89,370	10,806	12.1%	N
Nebraska Counties within the Study Area				
Douglas	494,701	64,849	13.1%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Notes: Population for poverty status is not determined for institutionalized persons, persons in military group quarters, persons in college dormitories and unrelated individuals under 15 years old.*

Table 5. 2010 Estimated Study Area Illinois City and Village Population Below the Poverty Level

Census Geography	Total 2010 Population for whom poverty status is determined	2010 Estimated Population Below the Poverty Level		Total % Above Statewide Average	Potential EJ Population (Y/N)
		Total	Percent	-	-
State of Illinois	12,439,981	1,572,048	12.6%	-	-
Illinois cities and villages within 1/4 mile of the Study Area					
Chicago	***2,656,413***	***556,416***	***20.9%***	***65.8%***	***Y***
Cicero	82,846	13,975	16.9%	33.5%	N
Berwyn	55,335	7,403	13.4%	5.9%	N
Riverside	8,737	207	2.4%	-81.3%	N
Lyons	10,453	749	7.2%	-43.3%	N
Brookfield	18,647	1,190	6.4%	-49.5%	N
La Grange Park	13,262	415	3.1%	-75.2%	N
La Grange	15,107	619	4.1%	-67.6%	N
Western Springs	12,637	318	2.5%	-80.1%	N
Hinsdale	16,627	251	1.5%	-88.1%	N
Westmont	23,545	1,810	7.7%	-39.2%	N
Clarendon Hills	8,275	213	2.6%	-79.6%	N
Downers Grove	46,880	1,517	3.2%	-74.4%	N
Lisle	22,102	800	3.6%	-71.4%	N
Naperville	138,290	4,675	3.4%	-73.2%	N
Aurora	188,966	22,570	11.9%	-5.5%	N
Montgomery	15,866	721	4.5%	-64.0%	N
Oswego	27,590	1,180	4.3%	-66.2%	N
Yorkville	14,637	451	3.1%	-75.6%	N
Plano	9,453	655	6.9%	-45.2%	N
Sandwich	7,560	416	5.5%	-56.5%	N
Somonauk	1,997	211	10.6%	-16.4%	N
Leland	777	81	10.4%	-17.5%	N
Earlville	1,724	205	11.9%	-5.9%	N
Mendota	6,974	777	11.1%	-11.8%	N
Arlington	191	21	11.0%	-13.0%	N
Malden	374	28	7.5%	-40.8%	N
Princeton	7,784	1,107	14.2%	12.5%	N
Wyanet	1,115	153	13.7%	8.6%	N
Sheffield	977	137	14.0%	11.0%	N
Mineral	239	12	5.0%	-60.3%	N
Annawan	936	63	6.7%	-46.7%	N
Atkinson	931	114	12.2%	-3.1%	N
Geneseo	6,476	323	5.0%	-60.5%	N
Colona	4,950	681	13.8%	8.9%	N
Carbon Cliff	***2,117***	***635***	***30.0%***	***137.4%***	***Y***
Silvis	7,435	882	11.9%	-6.1%	N
East Moline	19,890	3,344	16.8%	33.0%	N
Moline	430,412	4,164	1.0%	-92.3%	N
Rock Island	36,598	5,751	15.7%	24.3%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 6. 2010 Estimated Study Area Iowa and Nebraska City and Village Population Below the Poverty Level

Census Geography	Total 2010 Population for whom poverty status is determined	2010 Estimated Population Below the Poverty Level		Total % Above Statewide Average	Potential EJ Population (Y/N)
		Total	Percent	-	-
State of Iowa	2,916,252	338,263	11.6%	-	-
State of Nebraska	1,744,704	206,227	11.8%	-	-
Iowa cities and villages within 1/4 mile of the Study Area					
Davenport	***95,446***	***16,920***	***17.7%***	***52.8%***	***Y***
Walcott	1,570	87	5.5%	-52.2%	N
Stockton	269	23	8.6%	-26.3%	N
Durant	1,907	239	12.5%	8.0%	N
Wilton	2,792	200	7.2%	-38.2%	N
Atalissa	***462***	***163***	***35.3%***	***204.2%***	***Y***
West Liberty	3,659	425	11.6%	0.1%	N
Iowa City	***59,771***	***16,492***	***27.6%***	***137.9%***	***Y***
University Heights	***1,111***	***202***	***18.2%***	***56.8%***	***Y***
Coralville	17,059	2,415	14.2%	22.0%	N
Tiffin	1,977	12	0.6%	-94.8%	N
Oxford	737	88	11.9%	2.9%	N
Marengo	***2,542***	***504***	***19.8%***	***70.9%***	***Y***
Ladora	***210***	***39***	***18.6%***	***60.1%***	***Y***
Victor	801	48	6.0%	-48.3%	N
Brooklyn	1,300	193	14.8%	28.0%	N
Malcom	295	36	12.2%	5.2%	N
Grinnell	7,423	1,251	16.9%	45.3%	N
Kellogg	601	100	16.6%	43.4%	N
Newton	14,651	2,432	16.6%	43.1%	N
Lambs Grove	212	0	0.0%	-100.0%	N
Colfax	2,725	369	13.5%	16.7%	N
Mitchellville	1,784	280	15.7%	35.3%	N
Altoona	13,593	703	5.2%	-55.4%	N
Pleasant Hill	7,872	448	5.7%	-50.9%	N
Des Moines	196,947	32,079	16.3%	40.4%	N
West Des Moines	54,239	3,321	6.1%	-47.2%	N
Van Meter	1,199	41	3.4%	-70.5%	N
Earlham	1,834	112	6.1%	-47.4%	N
De Soto	929	91	9.8%	-15.6%	N
Dexter	601	52	8.7%	-25.4%	N
Stuart	1,649	130	7.9%	-32.0%	N
Menlo	390	35	9.0%	-22.6%	N
Casey	450	40	8.9%	-23.4%	N
Adair	862	55	6.4%	-45.0%	N
Anita	979	102	10.4%	-10.2%	N
Wiota	144	10	6.9%	-40.1%	N
Atlantic	6,793	1,040	15.3%	32.0%	N
Hancock	179	11	6.1%	-47.0%	N
McClelland	214	33	15.4%	32.9%	N
Council Bluffs	59,101	8,987	15.2%	31.1%	N
Nebraska cities and villages within 1/4 mile of the Study Area					
Omaha, NE	397,878	61,053	15.3%	29.8%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates
*Notes: *Population for poverty status is not determined for institutionalized persons, persons in military group quarters, persons in college dormitories and unrelated individuals under 15 years old.*

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Table 7. 2010 Population by Race of Station Census Tracts in Illinois

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Some Other Race	Two or More Races	Total Minorities		Total % Above Citywide Average	Potential EJ Population (Y/N)
									Total	%		
State of Illinois	12,745,359	9,136,680	1,860,305	24,729	571,537	3,290	927,604	221,214	3,608,679	28.3%	-	-
Chicago Union Station												
City of Chicago	2,703,466	1,153,408	919,776	6,148	145,463	1,013	434,539	44,132	1,551,071	57.4%	-	-
Census Tract 2819	3,791	2,120	441	0	1,092	0	35	103	1,671	44.1%	-23.2%	N
Geneseo												
City of Geneseo	6,476	6,082	12	0	0	0	192	190	394	6.1%	-	-
Census Tract 303	7,060	6,666	12	0	0	14	178	190	394	5.6%	-8.3%	N
La Grange Road												
City of La Grange	15,430	14,291	631	0	174	0	109	225	1,139	7.4%	-	-
Census Tract 8195	***2,926***	***2,240***	***519***	***0***	***47***	***0***	***51***	***69***	***686***	***23.4%***	***217.6%***	***Y***
Mendota												
City of Medota	7,274	6,143	92	0	12	0	981	46	1,131	15.5%	-	-
Census Tract 9619	4,035	3,782	92	0	0	0	124	37	253	6.3%	-59.7%	N
Moline												
City of Moline	43,331	36,019	1,760	120	1,103	9	3,293	1,036	7,321	16.9%	-	-
Census Tract 223	***1,840***	***1,222***	***95***	***5***	***0***	***0***	***446***	***72***	***618***	***33.6%***	***98.8%***	***Y***
Naperville												
City of Naperville	140,838	109,928	6,095	313	19,417	32	2,531	2,554	30,942	22.0%	-	-
Census Tract 8461.03	5,606	4,732	101	26	524	0	120	103	874	15.6%	-29.0%	N
Plano												
City of Plano	9,472	7,390	369	0	17	9	1,260	436	2,091	22.1%	-	-
Census Tract 8905	12,310	10,130	369	0	17	0	1,342	452	2,180	17.7%	-19.8%	N
Princeton												
City of Princeton	7,884	7,607	56	66	23	4	59	73	281	3.6%	-	-
Census Tract 9649	2,772	2,663	30	43	8	0	0	28	109	3.9%	10.3%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 8. 2010 Population by Race of Station Census Tracts in Iowa

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Some Other Race	Two or More Races	Total Minorities		Total % Above Citywide Average	Potential EJ Population *(Y/N)*
									Total	%		
State of Iowa	3,016,267	2,773,410	82,682	9,825	50,363	961	48,535	50,491	242,857	8.1%	-	-
Atlantic												
City of Atlantic	7,078	6,812	138	13	7	38	18	90	304	4.3%	-	-
Census Tract 1905	***3,316***	***3,085***	***129***	***13***	***0***	***0***	***18***	***71***	***231***	***7.0%***	***62.19%***	***Y***
Census Tract 1904	3,834	3,799	9	0	7	0	0	19	35	0.9%	-78.75%	N
Grinnell												
City of Grinnell	9,265	8,442	228	0	189	21	126	280	844	9.1%	-	-
Census Tract 3704	4,046	3,889	39	0	35	0	0	83	157	3.9%	-57.4%	N
Iowa City												
City of Iowa City	66,758	56,740	2,886	212	4,444	28	998	1,478	10,046	15.0%	-	-
Census Tract 16	7,385	6,495	178	48	461	0	36	167	890	12.1%	-19.9%	N
Census Tract 17	2,923	2,690	6	0	27	0	91	109	233	8.0%	-47.0%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 9. 2010 Estimated Population Below the Poverty Level of Station Census Tracts in Illinois

Census Geography	Total 2010 Population for whom poverty status is determined	2010 Estimated Population Below the Poverty Level		Raw % Greater than City Average	Total % Above City Average	Potential EJ Population (Y/N)
		Total	%			
State of Illinois	12,439,981	1,572,048	12.6%	-	-	-
Chicago Union Station						
City of Chicago	2,656,413	556,416	20.9%	-	-	-
Census Tract 2819	3,791	539	14.2%	1.6%	-32.1%	N
Geneseo						
City of Geneseo	6,476	323	5.0%	-	-	-
Census Tract 303	7,060	334	4.7%	-0.3%	-5.1%	N
La Grange Road						
City of La Grange	15,107	619	4.1%	-	-	-
Census Tract 8195	***2,749***	***250***	***9.1%***	***5.0%***	***121.9%***	***Y***
Mendota						
City of Mendota	6,974	777	11.1%	-	-	-
Census Tract 9619	4,020	437	10.9%	-0.3%	-2.4%	N
Moline						
City of Moline	430,412	4,164	1.0%	-	-	-
Census Tract 223	***1,840***	***506***	***27.5%***	***26.5%***	***2742.5%***	***Y***
Naperville						
City of Naperville	138,290	4,675	3.4%	-	-	-
Census Tract 8461.03	4,761	234	4.9%	1.5%	45.4%	N
Plano						
City of Plano	9,453	655	6.9%	-	-	-
Census Tract 8905	12,271	674	5.5%	-1.4%	-20.7%	N
Princeton						
City of Princeton	7,784	1,107	14.2%	-	-	-
Census Tract 9649	2,763	370	13.4%	-0.8%	-5.8%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 10. 2010 Estimated Population Below the Poverty Level of Station Census Tracts in Iowa

Census Geography	Total 2010 Population for whom poverty status is determined	2010 Estimated Population Below the Poverty Level		Raw % Greater than City Average	Total % Above City Average	Potential EJ Population (Y/N)
		Total	%			
State of Iowa	2,916,252	338,263	11.6%	-	-	-
Atlantic						
City of Atlantic	6,793	1,040	15.3%	-	-	-
Census Tract 1905	***3,316***	***801***	***24.2%***	***12.6%***	***108.25%***	***Y***
Census Tract 1904	3,549	239	6.7%	-4.9%	-41.94%	N
Grinnell						
City of Grinnell	7,423	1,251	16.9%	-	-	-
Census Tract 3704	***3,862***	***1,028***	***26.6%***	***9.8%***	***57.9%***	***Y***
Iowa City						
City of Iowa City	59,771	16,492	27.6%	-	-	-
Census Tract 16	***7,043***	***5,032***	***71.4%***	***43.9%***	***158.9%***	***Y***
Census Tract 17	2,908	340	11.7%	-15.9%	-57.6%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 11. 2010 Minority Population with Impacted Census Tracts in Des Moines Iowa

Census Geography	Total Population	White	Black	American Indian/ Alaska Native	Asian	Some Other Race	Two or More Races	Total Minorities		Total % Above Citywide Average	Pot. EJ Population (Y/N)
								Total	%		
State of Iowa	3,016,267	2,773,410	82,682	9,825	50,363	48,535	50,491	242,857	8.1%	-	-
City of Des Moines	202,095	157,640	19,539	739	8,826	8,887	6,464	44,604	22.1%	-	N
Impacted Polk County Census Tracts											
52	3,413	2,553	313	58	79	163	247	906	26.5%	20.3%	N
53	2,637	2,048	165	0	136	217	71	589	22.3%	1.2%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates

Table 12. 2010 Population Below the Poverty Level with Impacted Census Tracts in Des Moines Iowa

Census Geography	Total 2010 Population for whom poverty status is determined	2010 Estimated Population Below the Poverty Level		Total % Above Citywide Average	Pot. EJ Population (Y/N)
		Total	Percent		
City of Des Moines	196,947	32,079	16.3%	-	-
Impacted Polk County Census Tracts					
52	***3,362***	***1,711***	**50.9%**	***212.5%***	***Y***
53	2,628	340	12.9%	-20.8%	N

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates
*Notes: *Population for poverty status is not determined for institutionalized persons, persons in military group quarters, persons in college dormitories and unrelated individuals under 15 years old.*

Table 13. 2010 English Proficiency within Potentially Impacted Cities and Villages with Substantial Minority Populations

Census Geography	Speak English Well	Speak English less than Well
Illinois Cities Within 1/4 Mile of the Study Area with Substantial Minority Populations		
Chicago	83.4%	16.6%
Cicero	56.9%	43.1%
Aurora	78.4%	21.6%
Iowa Cities and Villages within 1/4 mile of the Study Area with Substantial Minority Populations		
Davenport	96.7%	3.3%
West Liberty	76.0%	24.0%
Iowa City	95.8%	4.2%
Coralville	95.2%	4.8%
Des Moines	91.6%	8.4%
Nebraska Cities within 1/4 mile of the Study Area with Substantial Minority Populations		
Omaha	93.4%	6.6%

Source: U.S. Census Bureau, 2006-2010, American Community Survey, 5-year estimates
*Notes: *Population 5 years and older.*

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APPENDIX E

NOISE AND VIBRATION

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Reference Vibration Curve Adjustment Factors

Table 1
Reference Vibration Curve Adjustment Factors (Existing Use)

Reference Curve Assumptions:			
Vehicle Type:	Locomotive Powered Passenger or Freight		
Speed (mph):	50		
Track:	Continuously Welded Rail (CWR)		
Geology:	Normal soil, inefficient at transmitting vibration		
Traffic Condition A (Chicago to Aurora):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	60		
Track:	CWR (same as reference case)		
Geology:	Till	149,704	Linear Ft
	Sand/Gravel/Sed	31,583	Linear Ft
	Total	181,287	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	1.6	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	8.3	dB, weighted average over section	
Total Adjustments:	9.8	dB	
Traffic Condition B (Aurora to Wyanet):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	70		
Track:	CWR (same as reference case)		
Geology:	Till	299,141	Linear Ft
	Sand/Gravel/Sed	105,188	Linear Ft
	Total	404,329	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	2.9	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	7.4	dB, weighted average over section	
Total Adjustments:	10.3	dB	

Table 1 (continued)

Traffic Condition C (Wyanet to Silvis):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	118,423	Linear Ft
	Sand/Gravel/Sed	110,877	Linear Ft
	Total	229,300	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:		-3.1	dB, calc. per FTA guidance
Track:		0	dB
Geology:		10	dB, for till (efficient soil)
		0	dB, for sand/gravel/sediment (inefficient soil)
		5.2	dB, weighted average over section
Total Adjustments:		2.1	dB
Traffic Condition D (Silvis to Rock Island):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	5		
Track:	CWR (same as reference case)		
Geology:	Till	41,934	Linear Ft
	Sand/Gravel/Sed	14,437	Linear Ft
	Total	56,371	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:		-20.0	dB, calc. per FTA guidance
Track:		0	dB
Geology:		10	dB, for till (efficient soil)
		0	dB, for sand/gravel/sediment (inefficient soil)
		7.4	dB, weighted average over section
Total Adjustments:		-12.6	dB
Traffic Condition E (Rock Island to Iowa City):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	268,415	Linear Ft
	Total	268,415	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:		-3.1	dB, calc. per FTA guidance
Track:		0	dB
Geology:		10	dB, for till (efficient soil)
		0	dB, for sand/gravel/sediment (inefficient soil)
		0.0	dB, weighted average over section
Total Adjustments:		-3.1	dB

Table 1 (continued)

Traffic Condition F (Iowa City):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	5		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	14,129	Linear Ft
	Total	14,129	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-20.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-20.0	dB	
Traffic Condition G (Iowa City to E. Des Moines):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	589,517	Linear Ft
	Total	589,517	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-3.1	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-3.1	dB	
Traffic Condition H (Des Moines):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	10		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	73,699	Linear Ft
	Total	73,699	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-14.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-14.0	dB	

Table 1 (continued)

Traffic Condition I (W. Des Moines to Council Bluffs):

Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	653,157	Linear Ft
	Total	653,157	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-3.1	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-3.1	dB	

Traffic Condition J (Council Bluffs to Omaha):

Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	10		
Track:	CWR (same as reference case)		
Geology:	Till	16,353	Linear Ft
	Sand/Gravel/Sed	86,094	Linear Ft
	Total	102,447	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-14.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	1.6	dB, weighted average over section	
Total Adjustments:	-12.4	dB	

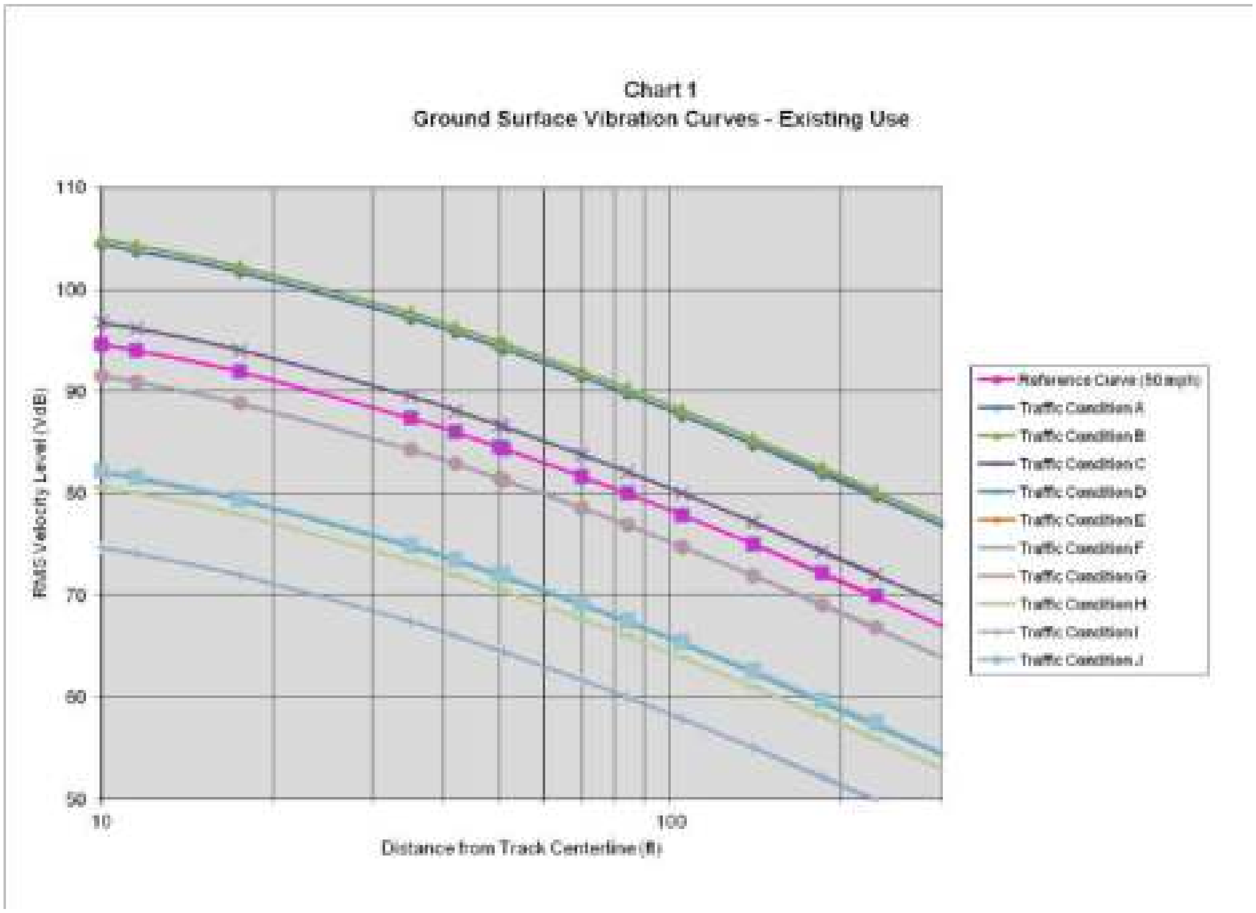
Chart 1
Ground Surface Vibration Curves - Existing Use
110
100
90
80
70
60
50
RMS Velocity Level (VdB)
10
100
Distance from Track Centerline (ft)
Reference Curve (50 mph)
Traffic Condition A
Traffic Condition B
Traffic Condition C
Traffic Condition D
Traffic Condition E
Traffic Condition F
Traffic Condition G
Traffic Condition H
Traffic Condition I
Traffic Condition J

Table 2
Reference Vibration Curve Adjustment Factors (Future No-build Condition)

Reference Curve Assumptions:			
Vehicle Type:	Locomotive Powered Passenger or Freight		
Speed (mph):	50		
Track:	Continuously Welded Rail (CWR)		
Geology:	Normal soil, inefficient at transmitting vibration		
Traffic Condition A (Chicago to Aurora):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	60		
Track:	CWR (same as reference case)		
Geology:	Till	149,704	Linear Ft
	Sand/Gravel/Sed	31,583	Linear Ft
	Total	181,287	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	1.6	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	8.3	dB, weighted average over section	
Total Adjustments:	9.8	dB	
Traffic Condition B (Aurora to Wyanet):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	70		
Track:	CWR (same as reference case)		
Geology:	Till	299,141	Linear Ft
	Sand/Gravel/Sed	105,188	Linear Ft
	Total	404,329	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	2.9	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	7.4	dB, weighted average over section	
Total Adjustments:	10.3	dB	

Table 2 (continued)

Traffic Condition C (Wyanet to Silvis):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	118,423	Linear Ft
	Sand/Gravel/Sed	110,877	Linear Ft
	Total	229,300	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:		-3.1	dB, calc. per FTA guidance
Track:		0	dB
Geology:		10	dB, for till (efficient soil)
		0	dB, for sand/gravel/sediment (inefficient soil)
		5.2	dB, weighted average over section
Total Adjustments:		2.1	dB
Traffic Condition D (Silvis to Rock Island):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	5		
Track:	CWR (same as reference case)		
Geology:	Till	41,934	Linear Ft
	Sand/Gravel/Sed	14,437	Linear Ft
	Total	56,371	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:		-20.0	dB, calc. per FTA guidance
Track:		0	dB
Geology:		10	dB, for till (efficient soil)
		0	dB, for sand/gravel/sediment (inefficient soil)
		7.4	dB, weighted average over section
Total Adjustments:		-12.6	dB
Traffic Condition E (Rock Island to Iowa City):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	268,415	Linear Ft
	Total	268,415	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:		-3.1	dB, calc. per FTA guidance
Track:		0	dB
Geology:		10	dB, for till (efficient soil)
		0	dB, for sand/gravel/sediment (inefficient soil)
		0.0	dB, weighted average over section
Total Adjustments:		-3.1	dB

Table 2 (continued)

Traffic Condition F (Iowa City):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	5		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	14,129	Linear Ft
	Total	14,129	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-20.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-20.0	dB	
Traffic Condition G (Iowa City to E. Des Moines):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	589,517	Linear Ft
	Total	589,517	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-3.1	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-3.1	dB	
Traffic Condition H (Des Moines):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	10		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	73,699	Linear Ft
	Total	73,699	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-14.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-14.0	dB	

Table 2 (continued)

Traffic Condition I (W. Des Moines to Council Bluffs):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	35		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	653,157	Linear Ft
	Total	653,157	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-3.1	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-3.1	dB	
Traffic Condition J (Council Bluffs to Omaha):			
Train Type:	Locomotive Powered Freight (no existing passenger trains)		
Speed (mph):	10		
Track:	CWR (same as reference case)		
Geology:	Till	16,353	Linear Ft
	Sand/Gravel/Sed	86,094	Linear Ft
	Total	102,447	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-14.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	1.6	dB, weighted average over section	
Total Adjustments:	-12.4	dB	

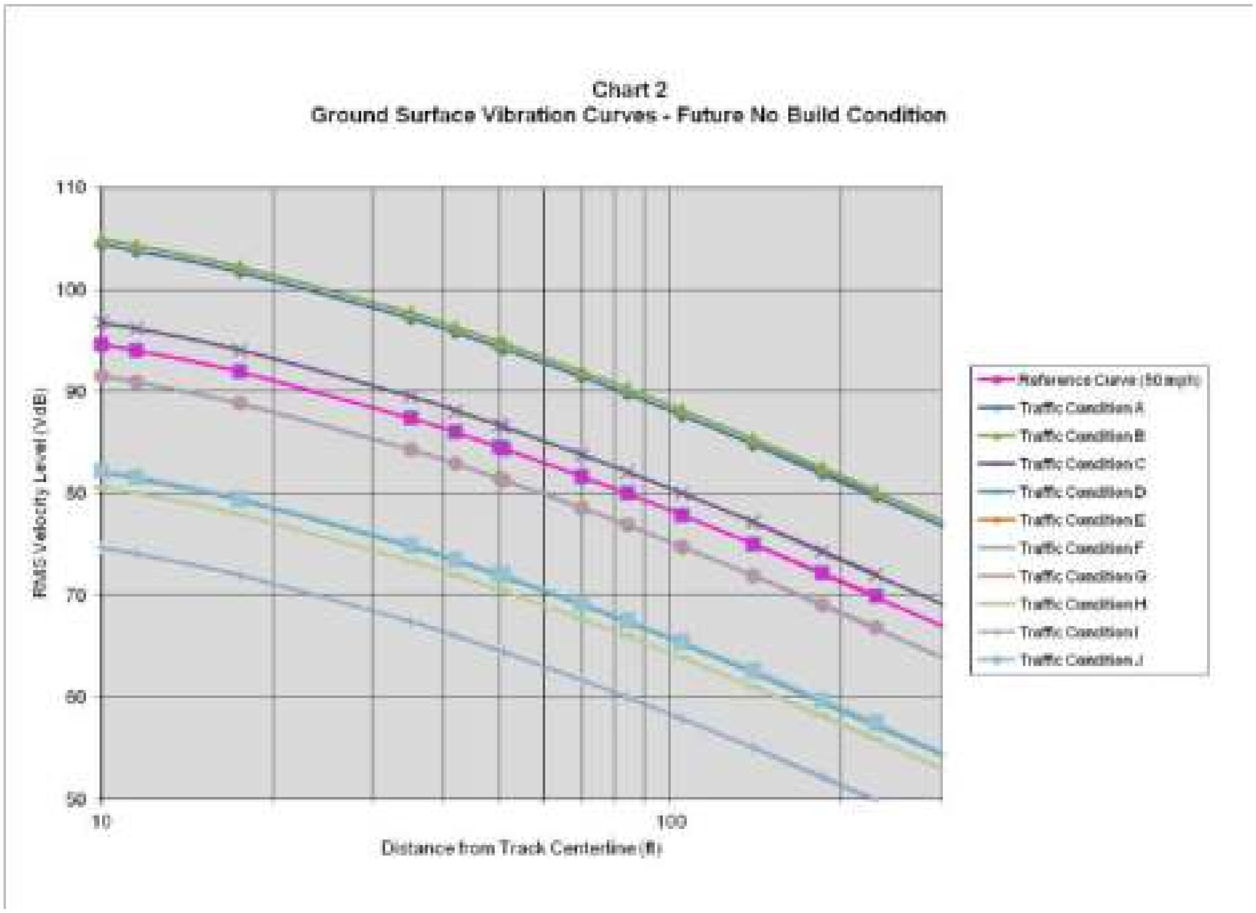
Chart 2
Ground Surface Vibration Curves - Future No Build Condition
110
100
90
80
70
60
50
10
100
RMS Velocity Level (VdB)
Distance from Track Centerline (ft)
Reference Curve (50 mph)
Traffic Condition A
Traffic Condition B
Traffic Condition C
Traffic Condition D
Traffic Condition E
Traffic Condition F
Traffic Condition G
Traffic Condition H
Traffic Condition I
Traffic Condition J

Table 3
Reference Vibration Curve Adjustment Factors (Future Build Condition)

Reference Curve Assumptions:			
Vehicle Type:	Locomotive Powered Passenger or Freight		
Speed (mph):	50		
Track:	Continuously Welded Rail (CWR)		
Geology:	Normal soil, inefficient at transmitting vibration		
Traffic Condition A (Chicago to Aurora):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	60		
Track:	CWR (same as reference case)		
Geology:	Till	149,704	Linear Ft
	Sand/Gravel/Sed	31,583	Linear Ft
	Total	181,287	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	1.6	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	8.3	dB, weighted average over section	
Total Adjustments:	9.8	dB	
Traffic Condition B (Aurora to Wyanet):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	100		
Track:	CWR (same as reference case)		
Geology:	Till	299,141	Linear Ft
	Sand/Gravel/Sed	105,188	Linear Ft
	Total	404,329	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	6.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	7.4	dB, weighted average over section	
Total Adjustments:	13.4	dB	

Table 3 (continued)

Traffic Condition C (Wyanet to Silvis):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	100		
Track:	CWR (same as reference case)		
Geology:	Till	118,423	Linear Ft
	Sand/Gravel/Sed	110,877	Linear Ft
	Total	229,300	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	6.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	5.2	dB, weighted average over section	
Total Adjustments:	11.2	dB	
Traffic Condition D (Silvis to Rock Island):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	40		
Track:	CWR (same as reference case)		
Geology:	Till	41,934	Linear Ft
	Sand/Gravel/Sed	14,437	Linear Ft
	Total	56,371	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-1.9	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	7.4	dB, weighted average over section	
Total Adjustments:	5.5	dB	
Traffic Condition E (Rock Island to Iowa City):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	100		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	268,415	Linear Ft
	Total	268,415	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	6.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	6.0	dB	

Table 3 (continued)

Traffic Condition F (Iowa City):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	40		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	14,129	Linear Ft
	Total	14,129	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-1.9	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-1.9	dB	
Traffic Condition G (Iowa City to E. Des Moines):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	100		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	589,517	Linear Ft
	Total	589,517	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	6.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	6.0	dB	
Traffic Condition H (Des Moines):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	40		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	73,699	Linear Ft
	Total	73,699	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-1.9	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	-1.9	dB	

Table 3 (continued)

Traffic Condition I (W. Des Moines to Council Bluffs):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	100		
Track:	CWR (same as reference case)		
Geology:	Till	0	Linear Ft
	Sand/Gravel/Sed	653,157	Linear Ft
	Total	653,157	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	6.0	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	0.0	dB, weighted average over section	
Total Adjustments:	6.0	dB	
Traffic Condition J (Council Bluffs to Omaha):			
Train Type:	Locomotive Powered Freight and Passenger		
Speed (mph):	40		
Track:	CWR (same as reference case)		
Geology:	Till	16,353	Linear Ft
	Sand/Gravel/Sed	86,094	Linear Ft
	Total	102,447	Linear Ft
Reference Curve Adjustment Factors:			
Increased Speed:	-1.9	dB, calc. per FTA guidance	
Track:	0	dB	
Geology:	10	dB, for till (efficient soil)	
	0	dB, for sand/gravel/sediment (inefficient soil)	
	1.6	dB, weighted average over section	
Total Adjustments:	-0.3	dB	

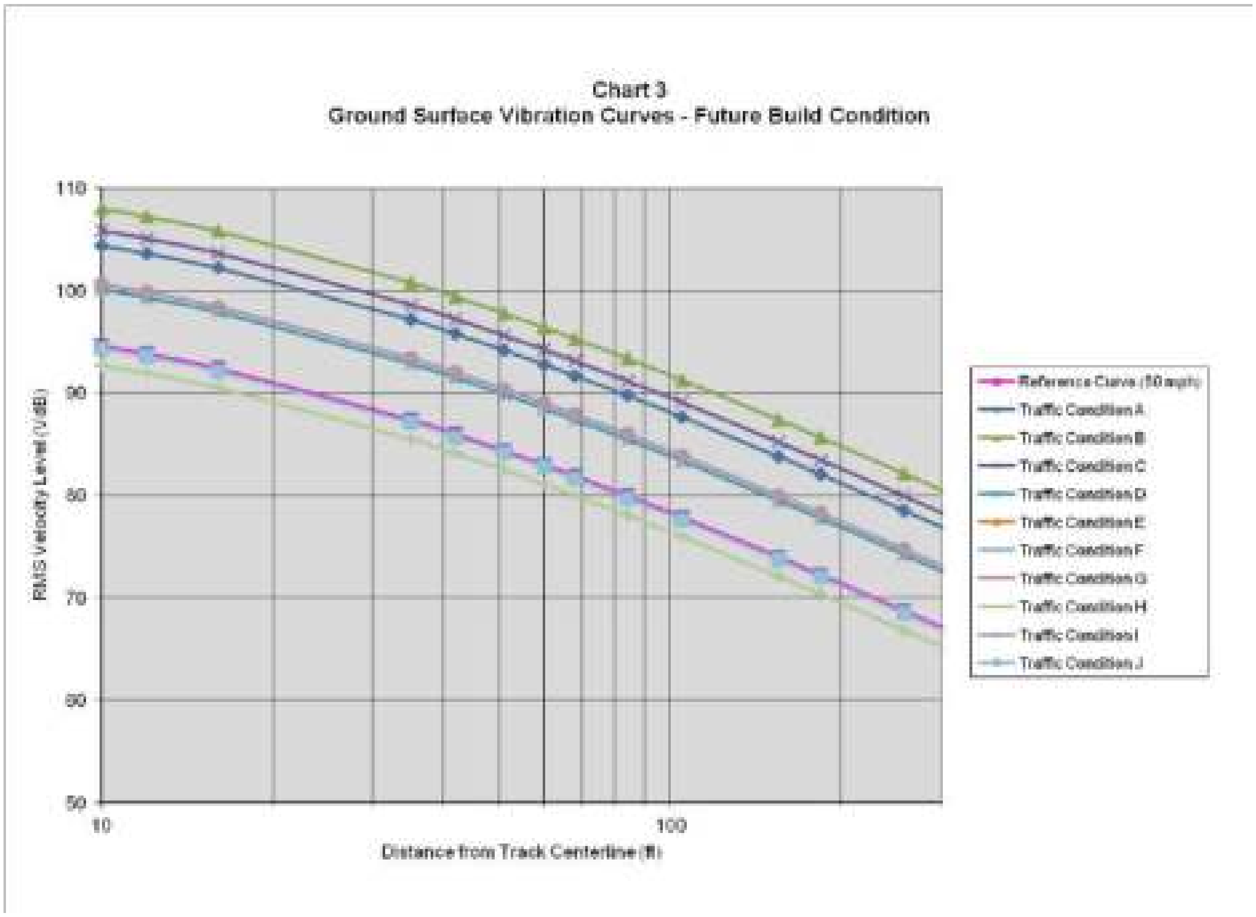
Chart 3
Ground Surface Vibration Curves - Future Build Condition
RMS Velocity Level (VdB)
110
100
90
80
70
60
50
10
100
Distance from Track Centerline (ft)
Reference Curve (50 mph)
Traffic Condition A
Traffic Condition B
Traffic Condition C
Traffic Condition D
Traffic Condition E
Traffic Condition F
Traffic Condition G
Traffic Condition H
Traffic Condition I
Traffic Condition J

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APPENDIX F

AIR QUALITY

Past planning documents identified a “Chicago to Omaha” corridor, so for the purposes of this appendix, the corridor reference will remain as previously designated; however, the project name includes “Council Bluffs” in the title.

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Chicago to Omaha Intercity Passenger Rail Service Cook County — Estimate of Diverted Trips

Build Alternative	Quantity	Source:
Total Annual Ridership	1,922,816	AECOM updates (April 2013)
New Trips from induced growth	190,944	AECOM updates (April 2013)
Amount of Diverted Trips	1,731,872	AECOM updates (April 2013)
Auto Diverted Trips	1,366,329	Travel diverted to rail from auto
Bus Diverted Trips	324,680	Travel diverted to rail from bus
Air Diverted Trips	40,864	Travel diverted to rail from air

Auto		
Auto miles one way	16.6	miles - Google Earth Pro
Nationwide % passenger cars	60.3%	Percent[a]
Nationwide % passenger trucks	39.7%	Percent[a]
Average passenger car energy intensity	3,538	Btu/passenger mile
Average passenger truck energy intensity	3,663	Btu/passenger mile
Average passengers per car	1.55	passengers/vehicle[a]
Average passengers per truck	1.84	passengers/vehicle[a]
Total diverted auto passenger miles per year	22,681,000	passenger-miles/year
Annual diverted auto fuel consumption	81,370	MMBtu/yr
Gasoline heating value	130,000	Btu/gal - USEPA AP-42 Appendix A
Annual auto fuel consumption diverted	625,923	gallons per year
Annual auto miles diverted	13,621,915	miles per year
Bus		
Intercity passenger bus energy intensity[a]	4,242	Btu/passenger mile
One-way distance	16.6	miles - Google Earth Pro
Total diverted bus passenger miles per year	5,389,680	passenger-miles/year
Annual diverted bus fuel consumption	22,863	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual diverted bus fuel consumption	166,883	gallons per year
Train		
Intercity passenger train energy intensity[a]	2,435	Btu/passenger mile
One-way distance	17	miles
Total new train passenger miles per year	31,918,744	passenger-miles/year
Annual new passenger train fuel consumption	77,722	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual new passenger train fuel consumption	567,315	gallons per year
Air		
Air transportation energy intensity[a]	2,826	Btu/passenger mile
One-way distance	17	miles - Google Earth Pro
Total diverted air passenger miles per year	678,335	passenger-miles/year
Jet fuel heating value	135,000	Btu/gal[a]
Jet fuel density	6.60	lb/gal
Annual air fuel consumption diverted	1,917	MMBtu/yr
Annual air fuel consumption diverted	14,200	gal/yr
Annual air fuel consumption diverted	42,548	kg/yr

[a] US Department of Energy Transportation Energy Data Book: Edition 30-2011.

Emission Calculations

	Additional Passenger Train Emissions			Automobile Emissions Diverted			Airline Emissions Diverted			Bus Emissions Diverted			
Pollutant	Emission Factor[1],[4] (g/gal) (lb/gal) CO2	Emissions Added (lb/yr)	Emissions Added (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[3],[4] (g/kg) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Net Change (ton/yr)
Hydrocarbons	5.8	7,248	3.62	0.4272	12,817	6.41	0.7	66	0.03	0.1581	4,742	2.37	-5.19
Carbon monoxide (CO)	38.1	47,609	23.80	3.3467	100,415	50.21	4.4	413	0.21	1.2706	38,122	19.06	-45.67
Nitrogen oxides (NO_x)	131	163,697	81.85	3.4469	103,421	51.71	14.1	1,323	0.66	1.2978	38,940	19.47	10.01
PM_{10}	3.4	4,249	2.12	0.1698	5,095	2.55				0.0644	1,931	0.97	-1.39
$PM_{2.5}$	3.298	4,121	2.06	0.1411	4,234	2.12				0.0545	1,637	0.82	-0.87
SO_2[5]	0.096	120	0.06	0.0071	213	0.11	0.4	38	0.02	0.0024	72	0.04	-0.10
Carbon dioxide[4] (CO_2)	22.377	12,694,806	6,347.40	17.681	11,066,946	5,533.47	21.098	299,588	150	22.377	3,734,349	1,867.17	-1,203.04

[1] Except CO2, emission factors from EPA document EPA420-F-09-025; Emission Factors for Locomotives; Dated April 2009. Emission factors are projected calendar year 2015 emission factors for passenger/commuter locomotives (Tier 4).

[2] Emission factors from data output from EPA Moves2010b model run for 2015.

[3] Except CO2, emission factors from US Department of Transportation Federal Highway Administration document "Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level; Final Report; April 2005". Emission factors are projected for 2015.

[4] CO2 Emission factors from US Department of Transportation Energy Information Administration Voluntary Reporting of Greenhouse Gases Program - Coefficients webpage. Emission factors are in units of lb/gal.

[5] Train SO_2 emission factor calculated based on 15 ppm (weight basis) diesel fuel sulfur content:
(15 ppm S/1,000,000) x (7.05 lb/gal) x (454 g/lb) x (2 lb SO2/lb S) = 0.096 g/gal

Note: The Chicago nonattainment area for Hydrocarbons, Nitrogen Oxides, and $PM_{2.5}$ includes the Cook, DuPage, Kane and Kendall Counties.

Chicago to Omaha Intercity Passenger Rail Service Cook County — Estimate of Diverted Trips

Build Alternative	Quantity	Source:
Total Annual Ridership	1,922,816	AECOM updates (April 2013)
New Trips from induced growth	190,944	AECOM updates (April 2013)
Amount of Diverted Trips	1,731,872	AECOM updates (April 2013)
Auto Diverted Trips	1,366,329	Travel diverted to rail from auto
Bus Diverted Trips	324,680	Travel diverted to rail from bus
Air Diverted Trips	40,864	Travel diverted to rail from air

Auto		
Auto miles one way	4	miles - Google Earth Pro
Nationwide % passenger cars	60.3%	Percent[a]
Nationwide % passenger trucks	39.7%	Percent[a]
Average passenger car energy intensity	3,538	Btu/passenger mile
Average passenger truck energy intensity	3,663	Btu/passenger mile
Average passengers per car	1.55	passengers/vehicle[a]
Average passengers per truck	1.84	passengers/vehicle[a]
Total diverted auto passenger miles per year	5,465,000	passenger-miles/year
Annual diverted auto fuel consumption	19,606	MMBtu/yr
Gasoline heating value	130,000	Btu/gal - USEPA AP-42 Appendix A
Annual auto fuel consumption diverted	150,815	gallons per year
Annual auto miles diverted	3,282,208	miles per year
Bus		
Intercity passenger bus energy intensity[a]	4,242	Btu/passenger mile
One-way distance	4	miles - Google Earth Pro
Total diverted bus passenger miles per year	1,298,718	passenger-miles/year
Annual diverted bus fuel consumption	5,509	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual diverted bus fuel consumption	40,213	gallons per year
Train		
Intercity passenger train energy intensity[a]	2,435	Btu/passenger mile
One-way distance	4	miles
Total new train passenger miles per year	7,691,264	passenger-miles/year
Annual new passenger train fuel consumption	18,728	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual new passenger train fuel consumption	136,702	gallons per year
Air		
Air transportation energy intensity[a]	2,826	Btu/passenger mile
One-way distance	4	miles - Google Earth Pro
Total diverted air passenger miles per year	163,454	passenger-miles/year
Jet fuel heating value	135,000	Btu/gal[a]
Jet fuel density	6.60	lb/gal
Annual air fuel consumption diverted	462	MMBtu/yr
Annual air fuel consumption diverted	3,422	gal/yr
Annual air fuel consumption diverted	10,253	kg/yr

[a] US Department of Energy Transportation Energy Data Book: Edition 30-2011.

Emission Calculations

	Additional Passenger Train Emissions			Automobile Emissions Diverted			Airline Emissions Diverted			Bus Emissions Diverted			
Pollutant	Emission Factor[1],[4] (g/gal) (lb/gal) CO2	Emissions Added (lb/yr)	Emissions Added (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[3],[4] (g/kg) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Net Change (ton/yr)
Hydrocarbons	5.8	1,746	0.87	0.4272	3,088	1.54	0.7	16	0.01	0.1581	14	0.01	-0.69
Carbon monoxide (CO)	38.1	11,472	5.74	3.3467	24,195	12.10	4.4	99	0.05	1.2706	0	-	-6.41
Nitrogen oxides (NO_x)	131	39,445	19.72	3.4469	24,919	12.46	14.1	319	0.16	1.2978	7	0.00	7.10
PM_{10}	3.4	1,024	0.51	0.1698	1,228	0.61		0		0.0644	0	0.00	-0.10
$PM_{2.5}$	3.298	993	0.50	0.1411	1,020	0.51		0		0.0545	924	0.46	-0.48
SO_2[5]	0.096	29	0.01	0.0071	51	0.03	0.4	9	0.00	0.0024	0	0.00	-0.02
Carbon dioxide[4] (CO_2)	22.377	3,058,989	1,529.49	17.681	11,066,946	5,533.47	21.098	72,190	36	22.377	899,843	449.92	-4,489.99

[1] Except CO2, emission factors from EPA document EPA420-F-09-025; Emission Factors for Locomotives; Dated April 2009. Emission factors are projected calendar year 2015 emission factors

[2] Emission factors from data output from EPA Moves2010b model run for 2015.

[3] Except CO2, emission factors from US Department of Transportation Federal Highway Administration document "Assessing the Effects of Freight Movement on Air Quality at the National and

[4] CO2 Emission factors from US Department of Transportation Energy Information Administration Voluntary Reporting of Greenhouse Gases Program - Coefficients webpage. Emission factors

[5] Train SO_2 emission factor calculated based on 15 ppm (weight basis) diesel fuel sulfur content:

Note: The Chicago nonattainment area for PM_{10} includes the Lyons Township only which is located in Cook County.

Chicago to Omaha Intercity Passenger Rail Service DuPage County		Estimate of Diverted Trips
Build Alternative	**Quantity**	**Source:**
Total Annual Ridership	1,922,816	AECOM updates (April 2013)
New Trips from induced growth	190,944	AECOM updates (April 2013)
Amount of Diverted Trips	1,731,872	AECOM updates (April 2013)
Auto Diverted Trips	1,366,329	Travel diverted to rail from auto
Bus Diverted Trips	324,680	Travel diverted to rail from bus
Air Diverted Trips	40,864	Travel diverted to rail from air

Auto		
Auto miles one way	18.3	miles - Google Earth Pro
Nationwide % passenger cars	60.3%	Percent[a]
Nationwide % passenger trucks	39.7%	Percent[a]
Average passenger car energy intensity	3,538	Btu/passenger mile
Average passenger truck energy intensity	3,663	Btu/passenger mile
Average passengers per car	1.55	passengers/vehicle[a]
Average passengers per truck	1.84	passengers/vehicle[a]
Total diverted auto passenger miles per year	25,004,000	passenger-miles/year
Annual diverted auto fuel consumption	89,704	MMBtu/yr
Gasoline heating value	130,000	Btu/gal - USEPA AP-42 Appendix A
Annual auto fuel consumption diverted	690,031	gallons per year
Annual auto miles diverted	15,017,079	miles per year
Bus		
Intercity passenger bus energy intensity[a]	4,242	Btu/passenger mile
One-way distance	18.3	miles - Google Earth Pro
Total diverted bus passenger miles per year	5,941,635	passenger-miles/year
Annual diverted bus fuel consumption	25,204	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual diverted bus fuel consumption	183,974	gallons per year
Train		
Intercity passenger train energy intensity[a]	2,435	Btu/passenger mile
One-way distance	18	miles
Total new train passenger miles per year	35,187,532	passenger-miles/year
Annual new passenger train fuel consumption	85,682	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual new passenger train fuel consumption	625,413	gallons per year
Air		
Air transportation energy intensity[a]	2,826	Btu/passenger mile
One-way distance	18	miles - Google Earth Pro
Total diverted air passenger miles per year	747,803	passenger-miles/year
Jet fuel heating value	135,000	Btu/gal[a]
Jet fuel density	6.60	lb/gal
Annual air fuel consumption diverted	2,113	MMBtu/yr
Annual air fuel consumption diverted	15,654	gal/yr
Annual air fuel consumption diverted	46,906	kg/yr

[a] US Department of Energy Transportation Energy Data Book: Edition 30-2011.

Emission Calculations

	Additional Passenger Train Emissions			Automobile Emissions Diverted			Airline Emissions Diverted			Bus Emissions Diverted			
Pollutant	Emission Factor[1],[4] (g/gal) (lb/gal) CO2	Emissions Added (lb/yr)	Emissions Added (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[3],[4] (g/kg) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Net Change (ton/yr)
Hydrocarbons	5.8	7,990	3.99	0.4272	14,130	7.07	0.7	72	0.04	0.1581	5,228	2.61	-5.72
Carbon monoxide (CO)	38.1	52,485	26.24	3.3467	110,700	55.35	4.4	455	0.23	1.2706	42,027	21.01	-50.35
Nitrogen oxides (NO_x)	131	180,461	90.23	3.4469	114,013	57.01	14.1	1,458	0.73	1.2978	42,928	21.46	11.03
PM_{10}	3.4	4,684	2.34	0.1698	5,617	2.81		0		0.0644	2,129	1.06	-1.53
$PM_{2.5}$	3.298	4,543	2.27	0.1411	4,668	2.33		0		0.0545	1,804	0.90	-0.96
SO_2[5]	0.096	132	0.07	0.0071	235	0.12	0.4	41	0.02	0.0024	79	0.04	-0.11
Carbon dioxide[4] (CO_2)	22.377	13,994,876	6,997.44	17.681	11,066,946	5,533.47	21.098	330,268	165	22.377	4,116,783	2,058.39	-759.56

[1] Except CO2, emission factors from EPA document EPA420-F-09-025; Emission Factors for Locomotives; Dated April 2009. Emission factors are projected calendar year 2015 emission factors for passenger/commuter locomotives (Tier 4).

[2] Emission factors from data output from EPA Moves2010b model run for 2015.

[3] Except CO2, emission factors from US Department of Transportation Federal Highway Administration document "Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level; Final Report; April 2005". Emission factors are projected for 2015.

[4] CO2 Emission factors from US Department of Transportation Energy Information Administration Voluntary Reporting of Greenhouse Gases Program - Coefficients webpage. Emission factors are in units of lb/gal.

[5] Train SO_2 emission factor calculated based on 15 ppm (weight basis) diesel fuel sulfur content:
(15 ppm S/1,000,000) x (7.05 lb/gal) x (454 g/lb) x (2 lb SO2/lb S) = 0.096 g/gal

Note: The Chicago nonattainment area for Hydrocarbons, Nitrogen Oxides, and $PM_{2.5}$ includes the Cook, DuPage, Kane and Kendall Counties.

Chicago to Omaha Intercity Passenger Rail Service Kane County			Estimate of Diverted Trips
Build Alternative	**Quantity**	**Source:**	
Total Annual Ridership	1,922,816	AECOM updates (April 2013)	
New Trips from induced growth	190,944	AECOM updates (April 2013)	
Amount of Diverted Trips	1,731,872	AECOM updates (April 2013)	
Auto Diverted Trips	1,366,329	Travel diverted to rail from auto	
Bus Diverted Trips	324,680	Travel diverted to rail from bus	
Air Diverted Trips	40,864	Travel diverted to rail from air	

Auto		
Auto miles one way	6.2	miles - Google Earth Pro
Nationwide % passenger cars	60.3%	Percent[a]
Nationwide % passenger trucks	39.7%	Percent[a]
Average passenger car energy intensity	3,538	Btu/passenger mile
Average passenger truck energy intensity	3,663	Btu/passenger mile
Average passengers per car	1.55	passengers/vehicle[a]
Average passengers per truck	1.84	passengers/vehicle[a]
Total diverted auto passenger miles per year	8,471,000	passenger-miles/year
Annual diverted auto fuel consumption	30,390	MMBtu/yr
Gasoline heating value	130,000	Btu/gal - USEPA AP-42 Appendix A
Annual auto fuel consumption diverted	233,769	gallons per year
Annual auto miles diverted	5,087,573	miles per year
Bus		
Intercity passenger bus energy intensity[a]	4,242	Btu/passenger mile
One-way distance	6.2	miles - Google Earth Pro
Total diverted bus passenger miles per year	2,013,013	passenger-miles/year
Annual diverted bus fuel consumption	8,539	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual diverted bus fuel consumption	62,330	gallons per year
Train		
Intercity passenger train energy intensity[a]	2,435	Btu/passenger mile
One-way distance	6	miles
Total new train passenger miles per year	11,921,459	passenger-miles/year
Annual new passenger train fuel consumption	29,029	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual new passenger train fuel consumption	211,889	gallons per year
Air		
Air transportation energy intensity[a]	2,826	Btu/passenger mile
One-way distance	6	miles - Google Earth Pro
Total diverted air passenger miles per year	253,354	passenger-miles/year
Jet fuel heating value	135,000	Btu/gal[a]
Jet fuel density	6.60	lb/gal
Annual air fuel consumption diverted	716	MMBtu/yr
Annual air fuel consumption diverted	5,304	gal/yr
Annual air fuel consumption diverted	15,892	kg/yr

[a] US Department of Energy Transportation Energy Data Book: Edition 30-2011.

Emission Calculations

	Additional Passenger Train Emissions			Automobile Emissions Diverted			Airline Emissions Diverted			Bus Emissions Diverted			
Pollutant	Emission Factor[1],[4] (g/gal) (lb/gal) CO2	Emissions Added (lb/yr)	Emissions Added (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[3],[4] (g/kg) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Net Change (ton/yr)
Hydrocarbons	5.8	2,707	1.35	0.4272	4,787	2.39	0.7	25	0.01	0.1581	1,771	0.89	-1.94
Carbon monoxide (CO)	38.1	17,782	8.89	3.3467	37,503	18.75	4.4	154	0.08	1.2706	14,238	7.12	-17.06
Nitrogen oxides (NO_x)	131	61,140	30.57	3.4469	38,626	19.31	14.1	494	0.25	1.2978	14,543	7.27	3.74
PM_{10}	3.4	1,587	0.79	0.1698	1,903	0.95		0		0.0644	721	0.36	-0.52
$PM_{2.5}$	3.298	1,539	0.77	0.1411	1,581	0.79		0		0.0545	611	0.31	-0.33
SO_2[5]	0.096	45	0.02	0.0071	80	0.04	0.4	14	0.01	0.0024	27	0.01	-0.04
Carbon dioxide[4] (CO_2)	22.377	4,741,433	2,370.72	17.681	11,066,946	5,533.47	21.098	111,894	56	22.377	1,394,757	697.38	-3,916.08

[1] Except CO2, emission factors from EPA document EPA420-F-09-025; Emission Factors for Locomotives; Dated April 2009. Emission factors are projected calendar year 2015 emission factors for passenger/commuter locomotives (Tier 4).

[2] Emission factors from data output from EPA Moves2010b model run for 2015.

[3] Except CO2, emission factors from US Department of Transportation Federal Highway Administration document "Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level; Final Report; April 2005". Emission factors are projected for 2015.

[4] CO2 Emission factors from US Department of Transportation Energy Information Administration Voluntary Reporting of Greenhouse Gases Program - Coefficients webpage. Emission factors are in units of lb/gal.

[5] Train SO_2 emission factor calculated based on 15 ppm (weight basis) diesel fuel sulfur content:
(15 ppm S/1,000,000) x (7.05 lb/gal) x (454 g/lb) x (2 lb SO2/lb S) = 0.096 g/gal

Note: The Chicago nonattainment area for Hydrocarbons, Nitrogen Oxides, and $PM_{2.5}$ includes the Cook, DuPage, Kane and Kendall Counties.

Chicago to Omaha Intercity Passenger Rail Service Kendall County			Estimate of Diverted Trips
Build Alternative	**Quantity**	**Source:**	
Total Annual Ridership	1,922,816	AECOM updates (April 2013)	
New Trips from induced growth	190,944	AECOM updates (April 2013)	
Amount of Diverted Trips	1,731,872	AECOM updates (April 2013)	
Auto Diverted Trips	1,366,329	Travel diverted to rail from auto	
Bus Diverted Trips	324,680	Travel diverted to rail from bus	
Air Diverted Trips	40,864	Travel diverted to rail from air	

Auto		
Auto miles one way	14.5	miles - Google Earth Pro
Nationwide % passenger cars	60.3%	Percent[a]
Nationwide % passenger trucks	39.7%	Percent[a]
Average passenger car energy intensity	3,538	Btu/passenger mile
Average passenger truck energy intensity	3,663	Btu/passenger mile
Average passengers per car	1.55	passengers/vehicle[a]
Average passengers per truck	1.84	passengers/vehicle[a]
Total diverted auto passenger miles per year	19,812,000	passenger-miles/year
Annual diverted auto fuel consumption	71,077	MMBtu/yr
Gasoline heating value	130,000	Btu/gal - USEPA AP-42 Appendix A
Annual auto fuel consumption diverted	546,746	gallons per year
Annual auto miles diverted	11,898,831	miles per year
Bus		
Intercity passenger bus energy intensity[a]	4,242	Btu/passenger mile
One-way distance	14.5	miles - Google Earth Pro
Total diverted bus passenger miles per year	4,707,853	passenger-miles/year
Annual diverted bus fuel consumption	19,971	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual diverted bus fuel consumption	145,772	gallons per year
Train		
Intercity passenger train energy intensity[a]	2,435	Btu/passenger mile
One-way distance	15	miles
Total new train passenger miles per year	27,880,831	passenger-miles/year
Annual new passenger train fuel consumption	67,890	MMBtu/yr
Diesel fuel heating value	137,000	Btu/gal - USEPA AP-42 Appendix A
Annual new passenger train fuel consumption	495,546	gallons per year
Air		
Air transportation energy intensity[a]	2,826	Btu/passenger mile
One-way distance	15	miles - Google Earth Pro
Total diverted air passenger miles per year	592,522	passenger-miles/year
Jet fuel heating value	135,000	Btu/gal[a]
Jet fuel density	6.60	lb/gal
Annual air fuel consumption diverted	1,674	MMBtu/yr
Annual air fuel consumption diverted	12,403	gal/yr
Annual air fuel consumption diverted	37,166	kg/yr

[a] US Department of Energy Transportation Energy Data Book: Edition 30-2011.

Emission Calculations

	Additional Passenger Train Emissions			Automobile Emissions Diverted			Airline Emissions Diverted			Bus Emissions Diverted			
Pollutant	Emission Factor[1],[4] (g/gal) (lb/gal) CO2	Emissions Added (lb/yr)	Emissions Added (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[3],[4] (g/kg) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Net Change (ton/yr)
Hydrocarbons	5.8	6,331	3.17	0.4272	11,196	5.60	0.7	57	0.03	0.1581	4,142	2.07	-4.53
Carbon monoxide (CO)	38.1	41,587	20.79	3.3467	87,713	43.86	4.4	361	0.18	1.2706	33,300	16.65	-39.89
Nitrogen oxides (NO_x)	131	142,988	71.49	3.4469	90,339	45.17	14.1	1,156	0.58	1.2978	34,014	17.01	8.74
PM_{10}	3.4	3,711	1.86	0.1698	4,451	2.23		0		0.0644	1,687	0.84	-1.21
$PM_{2.5}$	3.298	3,600	1.80	0.1411	3,698	1.85		0		0.0545	1,430	0.71	-0.76
SO_2[5]	0.096	105	0.05	0.0071	186	0.09	0.4	33	0.02	0.0024	63	0.03	-0.09
Carbon dioxide[4] (CO_2)	22.377	11,088,836	5,544.42	17.681	11,066,946	5,533.47	21.098	261,688	131	22.377	3,261,932	1,630.97	-1,750.86

[1] Except CO2, emission factors from EPA document EPA420-F-09-025; Emission Factors for Locomotives; Dated April 2009. Emission factors are projected calendar year 2015 emission factors for passenger/commuter locomotives (Tier 4).

[2] Emission factors from data output from EPA Moves2010b model run for 2015.

[3] Except CO2, emission factors from US Department of Transportation Federal Highway Administration document "Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level; Final Report; April 2005". Emission factors are projected for 2015.

[4] CO2 Emission factors from US Department of Transportation Energy Information Administration Voluntary Reporting of Greenhouse Gases Program - Coefficients webpage. Emission factors are in units of lb/gal.

[5] Train SO_2 emission factor calculated based on 15 ppm (weight basis) diesel fuel sulfur content:
(15 ppm S/1,000,000) x (7.05 lb/gal) x (454 g/lb) x (2 lb SO2/lb S) = 0.096 g/gal

Note: The Chicago nonattainment area for Hydrocarbons, Nitrogen Oxides, and $PM_{2.5}$ includes the Cook, DuPage, Kane and Kendall Counties.

Build Alternative Emission Calculations - 2040

Pollutant	Additional passenger train emissions			Automobile Emissions Diverted			Airline Emissions Diverted			Bus Emissions Diverted			Net Change (ton/yr)
	Emission Factor[1],[4] (g/gal) (lb/gal) CO2	Emissions Added (lb/yr)	Emissions Added (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[3],[4] (g/kg) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	Emission Factor[2] (g/mile) (lb/gal) CO2	Emissions Diverted (lb/yr)	Emissions Diverted (ton/yr)	
Hydrocarbons	5.8	218,302	109.15	0.4272	365,219	182.61	0.7	1,677	0.84	0.1581	135,129	67.56	-141.86
Carbon monoxide (CO)	38.1	1,434,020	717.01	3.3467	2,861,230	1,430.62	4.4	10,544	5.27	1.2706	1,086,255	543.13	-1,262.00
Nitrogen oxides (NO_x)	131	4,930,620	2,465.31	3.4469	2,946,874	1,473.44	14.1	33,788	16.89	1.2978	1,109,551	554.78	420.20
PM_{10}	3.4	127,970	63.99	0.1698	145,180	72.59				0.0644	55,034	27.52	-36.12
$PM_{2.5}$	3.298	124,131	62.07	0.1411	120,644	60.32				0.0545	46,635	23.32	-21.57
SO_2[5]	0.096	3,614	1.81	0.0071	6,082	3.04	0.4	959	0.48	0.0024	2,045	1.02	-2.74
Carbon dioxide[4] (CO_2)	22.377	382,373,667	191,186.83	17.681	315,341,859	157,670.93	21.098	7,652,118	3,826	22.377	106,406,455	53,203.23	-23,513.38

[1] Except CO2, emission factors from EPA document EPA420-F-09-025; Emission Factors for Locomotives; Dated April 2009. Emission factors are projected calendar year 2015 emission factors for passenger/commuter locomotives (Tier 4).

[2] Emission factors from data output from EPA Moves2010b model run for 2015.

[3] Except CO2, emission factors from US Department of Transportation Federal Highway Administration document "Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level; Final Report; April 2005". Emission factors are projected for 2015.

[4] CO2 Emission factors from US Department of Transportation Energy Information Administration Voluntary Reporting of Greenhouse Gases Program - Coefficients webpage. Emission factors are in units of lb/gal.

[5] Train SO_2 emission factor calculated based on 15 ppm (weight basis) diesel fuel sulfur content: (15 ppm S/1,000,000) x (7.05 lb/gal) x (454 g/lb) x (2 lb SO2/lb S) = 0.096 g/gal

Chicago to Omaha Intercity Passenger Rail Service - Estmate of Diverted Trips - 2040

Build Alternative		Quantity	Source
Total Annual Ridership		1,922,816	AECOM Ridership Forecast 9/17/12
New Trips from induced growth		190,944	AECOM Ridership Forecast 9/17/12
Amount of Diverted Trips		1,731,900	AECOM Ridership Forecast 9/17/12
Auto Percent of Diverted Trips	78.9%	1,366,329	Passengers diverted to rail from auto
Bus Percent of Diverted Trips	18.7%	324,680	Passengers diverted to rail from bus
Air Percent of Diverted Trips	2.4%	40,864	Passengers diverted to rail from air
Auto			
Auto miles one way		473	miles - Google Earth Pro
Nationwide % passenger cars		60.3%	Percent[a]
Nationwide % passenger trucks		39.7%	Percent[a]
Average passenger car energy intensity		3,538	Btu/passenger mile
Average passenger truck energy intensity		3,663	Btu/passenger mile
Average passengers per car		1.55	passengers/vehicle[a]
Average passengers per truck		1.84	passengers/vehicle[a]
Total diverted auto passenger miles per year		646,273,000	passenger-miles/year
Annual diverted auto fuel consumption		2,318,559	MMBtu/yr
Gasoline heating value		130,000	Btu/gal - USEPA AP-42 Appendix A
Annual auto fuel consumption diverted		17,835,069	gallons per year
Annual auto miles diverted		388,143,198	miles per year
Bus			
Intercity passenger bus energy intensity[a]		4,242	Btu/passenger mile
One-way distance		473	miles - Google Earth Pro
Total diverted bus passenger miles per year		153,573,406	passenger-miles/year
Annual diverted bus fuel consumption		651,458	MMBtu/yr
Diesel fuel heating value		137,000	Btu/gal - USEPA AP-42 Appendix A
Annual diverted bus fuel consumption		4,755,171	gallons per year
Train			
Intercity passenger train energy intensity[a]		2,435	Btu/passenger mile
One-way distance		500	miles
Total new train passenger miles per year		961,407,965	passenger-miles/year
Annual new passenger train fuel consumption		2,341,028	MMBtu/yr
Diesel fuel heating value		137,000	Btu/gal - USEPA AP-42 Appendix A
Annual new passenger train fuel consumption		17,087,799	gallons per year
Air			
Air transportation energy intensity[a]		2,826	Btu/passenger mile
One-way distance		424	miles - Google Earth Pro
Total diverted air passenger miles per year		17,326,147	passenger-miles/year
Jet fuel heating value		135,000	Btu/gal[a]
Jet fuel density		6.60	lb/gal
Annual air fuel consumption diverted		48,964	MMBtu/yr
Annual air fuel consumption diverted		362,694	gal/yr
Annual air fuel consumption diverted		1,086,776	kg/yr

[a] US Department of Energy Transportation Energy Data Book: Edition 30-2011.

APPENDIX G

HAZARDOUS WASTE AND WASTE DISPOSAL

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Table 1. Hazardous Material Sites (Non-NPL) – ILLINOIS

County	City/Town	Facility Name
Cook	Berwyn	Oswald Property
Cook	Chicago	Empire Hard Chrome Inc.
Cook	Chicago	Getex Corp
Cook	Chicago	US Plating Corp
Cook	Chicago	National Railroad Passenger Corp
Cook	Chicago	Freeport McMoron Chicago Rod Inc.
Cook	Chicago	Chilo Manufacturing & Plating Company
Cook	Chicago	Briskin Manufacturing Inc.
Cook	Chicago	Produce Terminal Cold Storage
Cook	Chicago	LC Formica, Inc.
Cook	Chicago	U.S. Customs House Firing Range
Cook	Chicago	Lakeside Lithography LLC
Cook	Cicero	Cicero Flexible Products Inc.
Cook	La Grange	Triangle Project #11 (Wendy's)
Cook	La Grange	Grayhill Inc.
Cook	La Grange	Triangle Project #7 (LaGrange Multi Tenants)
Cook	La Grange	Triangle Project #6 (Breen's Cleaners)
Cook	La Grange	Triangle Project #8 (First Bank Of America)
Cook	La Grange	Starkey Chemical Process Co
Cook	La Grange	Triangle Project #4 (LaGrange Family Care)
Cook	La Grange	Triangle Project #3 (Just Tires)
Cook	La Grange	Triangle Project #5 (Cassidy Tires)
Cook	La Grange	Breen Cleaners
Cook	La Grange	Triangle Project #1 (Textor Petroleum Co.)
Cook	South Holland	Armacell LLC
DuPage	Downers Grove	Pepperidge Farm Inc.
DuPage	Naperville	Meyer Material Co Naperville YD 8
DuPage	Naperville	Prairie Material Sales Inc.
Kane	Aurora	Hupp Inc. - Richards-Wilcox Div.
Kane	Aurora	Fiberbasin Inc.
Kane	Montgomery	Central States Industries Inc.
Kendall	Montgomery	Chicago Flameproof
Kendall	Oswego	Fox Metro Water Reclamation District
Kendall	Plano	Plano Metal Specialties Inc.
Dekalb	Sandwich	Ag Tech Svc Inc.
Dekalb	Somonauk	Duro Cast Inc.
LaSalle	Leland	Biltrite Metal Products Inc.
LaSalle	Mendota	HCC Inc.
LaSalle	Mendota	Meriden Grain Co
LaSalle	Earlville	Earlville Farmers' Coop
Bureau	Malden	Van Orin Cooperative Oil Co
Bureau	Princeton	Ingersoll-Rand Inc. L CN Closers Div.
Bureau	Princeton	Champion Facility
Bureau	Sheffield	Garfield Stier Co.
Bureau	Wyanet	D & B Morton Fertilizer Svc Inc.
Henry	Annawan	Patriot Renewable Fuels, LLC
Henry	Annawan	River Valley Cooperative - Annawan
Henry	Annawan	Cooperative Gas & Oil Company, Annawan
Henry	Atkinson	Atkinson Grain & Fertilizer, Inc.

County	City/Town	Facility Name
Henry	Geneseo	Geneseo STP
Henry	Geneseo	River Valley Cooperative - Geneseo
Henry	Geneseo	Co-Operative Gas And Oil Co. (Cb)
Rock Island	East Moline	McLaughlin Body Co
Rock Island	East Moline	CNH America LLC
Rock Island	Moline	Jacobs Wood & Forestry Service, Inc.
Rock Island	Moline	Enterprise Lofts
Rock Island	Moline	O'Rourke Building
Rock Island	Moline	John Deere Seeding & Cylinder
Rock Island	Moline	Williams White & Co
Rock Island	Moline	Berry Bearing Building
Rock Island	Moline	Quad City Die Casting
Rock Island	Moline	Washington Square Apartments
Rock Island	Moline	Skinner Block
Rock Island	Moline	Commspec Building
Rock Island	Moline	Wessel Pattern Company
Rock Island	Moline	George Evans Corp
Rock Island	Moline	Villareal Building
Rock Island	Moline	Moline Automotive Repair
Rock Island	Moline	Harrington Signal Inc.
Rock Island	Moline	River Bend Foodbank
Rock Island	Rock Island	McLaughlin Body Co
Rock Island	Rock Island	Quad City Industrial Center
Rock Island	Rock Island	R&O Specialties Inc.

Source: U.S. Environmental Protection Agency (USEPA), NPL website. Retrieved on May 31, 2012. *http://www.epa.gov/superfund/sites/npl/index.htm*

Table 2. Hazardous Material Sites (Non-NPL) – IOWA

County	City/Town	Facility Name[a]
Scott	Davenport	Tri-City Electric
Scott	Davenport	Tri City Communications
Scott	Davenport	Amazon Dry Goods
Scott	Davenport	Carleton Life Support Systems Inc.
Scott	Davenport	401 Brady
Scott	Davenport	Yankee Plastic Company
Scott	Davenport	422 Perry
Scott	Davenport	130 East 4th
Scott	Walcott	Twin State Inc. DBA Liqui Grow
Scott	Walcott	River Valley Cooperative - Walcott
Scott	Walcott	Central Petroleum Co
Muscatine	Atalissa	Cropmate Fertilizer Co
Muscatine	Atalissa	Crop Production Services 6004
Muscatine	West Liberty	West Liberty City of STP
Muscatine	West Liberty	West Liberty Foods
Muscatine	Wilton	River Valley Coop - Wilton Nh3
Cedar	Durant	River Valley Cooperative Durant Nh3
Cedar	Durant	Twin State Inc.
Cedar	Durant	Russelloy Foundry Inc.
Cedar	Durant	Durant Municipal Water Supply
Cedar	West Branch	Agvantage FS - Downey
Johnson	Oxford	Cedar Johnson Farm Service Elevator
Johnson	Coralville	Contigroup Companies Incorporated Wayne Feed Division
Johnson	Coralville	Edgewater Park
Johnson	Coralville	Consumers Coop LP
Johnson	Iowa City	Consumers Cooperative Society
Johnson	Iowa City	Mid-America Pipeline Co
Johnson	Iowa City	Land O'Lakes Feed Iowa City
Iowa	Marengo	Marengo FMGP
Iowa	Ladora	Prince Agri Products Incorporated
Iowa	Ladora	Farmer 4 County Coop. Assoc. Ladora
Poweshiek	Brooklyn	Rohrer Brothers, Inc. Brooklyn Nh3
Poweshiek	Malcom	ITWC
Poweshiek	Malcom	Heartland Co-Op Malcom South Nh3
Poweshiek	Malcom	Heartland Coop- Malcom
Jasper	Kellogg	Heartland Co-Op, Kellogg Main
Jasper	Newton	Maytag Appliances - NEMC
Polk	Altoona	Farmers Cooperative Company - Altoona Nh3
Polk	Altoona	Artistic Manufacturing Corp
Polk	Des Moines	Siegwerk USA Co East Facility
Polk	Des Moines	B W Johnson Manufacturing Co
Polk	Des Moines	Monaghan Corp
Polk	Des Moines	NER Data Prod
Polk	Des Moines	Bayer Cropscience LP
Polk	Mitchellville	Heartland Co-Op Mitchellville
Polk	Des Moines	Tuttle Street Landfill[a]
Polk	West Des Moines	Crandell Drum Site
Polk	Des Moines	Des Moines Vocational School[a]
Polk	Des Moines	Dychem[a]
Polk	Des Moines	Two Rivers Service Center

County	City/Town	Facility Name[a]
Polk	Des Moines	Bayer Cropscience LP
Polk	Des Moines	Greenstar
Polk	Des Moines	Emco Enterprises Inc.
Polk	Des Moines	Des Moines Barrel & Drum Co
Polk	Des Moines	Waste Management of Iowa Inc.
Dallas	Booneville	Heartland Co-Op Booneville
Dallas	Dexter	Heartland Co-Op Dexter
Madison	Earlham	Farmers Cooperative Company -1 - Earlham
Madison	Earlham	Farmers Cooperative Co - 2 - Earlham
Adair	Adair	Adair Feed & Grain
Adair	Adair	Pelgrow
Adair	Stuart	Stuart Pelgrow
Adair	Stuart	Westco Agronomy Company, LLC DBA Pelgrow Stuart
Cass	Atlantic	Atlantic Water Supply
Cass	Atlantic	Westco Agronomy Company, LLC DBAPelgrow Atl
Cass	Atlantic	Pelgrow
Cass	Atlantic	Westco Agronomy Company, LLC
Pottawattamie	Council Bluffs	PCDC-1103 S. 6th Street
Pottawattamie	Council Bluffs	King Property
Pottawattamie	Council Bluffs	CPH-1001 S. 6th Street
Pottawattamie	Council Bluffs	Whisler Property
Pottawattamie	Council Bluffs	Farm Service Company - Council Bluffs NH3
Pottawattamie	Council Bluffs	PCDC-1128 S. Main Street
Pottawattamie	Council Bluffs	Council Bluffs, City Of-1027 10th Avenue
Pottawattamie	Council Bluffs	Council Bluffs, City Of-700 Block Of 10th Avenue
Pottawattamie	Council Bluffs	Aquila Property
Pottawattamie	Council Bluffs	SMV Industries
Pottawattamie	Council Bluffs	PCDC-1110 S. Main Street
Pottawattamie	Council Bluffs	CPH-1026 S. 6th Street
Pottawattamie	Council Bluffs	Mid City-1234 4th Ave.
Pottawattamie	Council Bluffs	Tanner Industries, Inc.
Pottawattamie	Council Bluffs	Ready Mixed Concrete Co Council Bluffs Plant
Pottawattamie	Council Bluffs	Growmark Inc.
Pottawattamie	Council Bluffs	Union Pacific Railroad Co

Source: U.S. Environmental Protection Agency (USEPA), NPL website. Retrieved on May 31, 2012.
http://www.epa.gov/superfund/sites/npl/index.htm
And Iowa DOT database

Notes:

[a] *These non-NPL-listed sites are stated as being part of the Des Moines TED NPL (Superfund) site.*

Table 3. Hazardous Material Sites (Non-NPL) – NEBRASKA

County	City/Town	Facility Name[a]
Douglas	Omaha	Gould Incorporated[a]
Douglas	Omaha	BCI Inc.
Douglas	Omaha	Williams Pipeline Company
Douglas	Omaha	Drake-Williams Steel
Douglas	Omaha	Ready Mixed Concrete Co. 7th & Seward Plant
Douglas	Omaha	Former Economy Products Property
Douglas	Omaha	ASARCO Inc. Omaha Plant[a]

Source: U.S. Environmental Protection Agency (USEPA), NPL website. Retrieved on May 31, 2012. [*http://www.epa.gov/superfund/sites/npl/index.htm*](http://www.epa.gov/superfund/sites/npl/index.htm)

Notes:

[a] *These non-NPL-listed sites are stated as being part of the Omaha Lead NPL (Superfund) site.*

Table 4. Waste Water Treatment Facilities – STUDY AREA

State	County	City/Town	Facility Name
Illinois	DuPage	Downers Grove	Downers Grove Sanitary District
Illinois	Kendall	Oswego	Fox Metro Water Reclamation District
Iowa	Muscatine	West Liberty	West Liberty City Of Stp
Iowa	Johnson	Iowa City	Sunrise Mobile Home Village
Iowa	Johnson	Iowa City	University Of Iowa Ms4
Iowa	Johnson	University Heights	University Heights, City Of Ms4
Iowa	Johnson	Tiffin	Tiffin City Of Stp
Iowa	Johnson	Oxford	Oxford City Of Stp
Iowa	Johnson	Oxford	Parkview Mobile Home Court
Iowa	Iowa	Victor	Victor City Of Stp
Iowa	Poweshiek	Brooklyn	Brooklyn City Of Stp
Iowa	Poweshiek	Malcolm	Malcom City Of Stp
Iowa	Polk	Des Moines	State Of Iowa - General Services
Iowa	Polk	Des Moines	YMCA Men's Supportive Housing
Iowa	Polk	Des Moines	Titan Tire Corporation-FD-1
Iowa	Dallas	Van Meter	Van Meter City Of Stp
Iowa	Dallas	De Soto	Desoto City Of Stp
Iowa	Guthrie	Stuart	Stuart Municipal Utilities
Iowa	Guthrie	Casey	Casey, City Of Stp
Iowa	Adair	Adair	Adair City Of Stp
Iowa	Cass	Anita	Anita City Of Stp
Nebraska	-	-	-

Source: Iowa DOT database, EPA Facility Registry System, and Bing aerial photography

Table 5. Hazardous Material Sites (Non-NPL) Impacts – ILLINOIS

County	City/Town	Facility Name
Cook	Chicago	National Railroad Passenger Corp
Cook	Chicago	Produce Terminal Cold Storage
Kane	Montgomery	Central States Industries Inc.
Kendall	Plano	Plano Metal Specialties Inc.
Dekalb	Sandwich	Ag Tech Svc Inc.
Henry	Annawan	Patriot Renewable Fuels, LLC
Rock Island	East Moline	McLaughlin Body Co
Rock Island	Moline	Washington Square Apartments[a]
Rock Island	Moline	Moline Automotive Repair[a]
Rock Island	Moline	River Bend Foodbank[a]
Rock Island	Rock Island	McLaughlin Body Co
Rock Island	Rock Island	Quad City Industrial Center[a]
Rock Island	Rock Island	R&O Specialties Inc.

Source: U.S. Environmental Protection Agency (USEPA), NPL website. Retrieved on May 31, 2012. *http://www.epa.gov/superfund/sites/npl/index.htm*

Notes:

[a] *These sites are designated as "Brownfields"*

Table 6. Hazardous Material Sites (Non-NPL) Impacts – IOWA

County	City/Town	Facility Name[a]
Scott	Walcott	River Valley Cooperative - Walcott
Cedar	Durant	Twin State Inc.
Cedar	West Branch	Agvantage FS - Downey
Polk	Des Moines	Siegwerk USA Co East Facility
Polk	Des Moines	Monaghan Corp
Polk	Des Moines	Des Moines Barrel & Drum Co
Polk	Des Moines	Waste Management of Iowa Inc.
Dallas	Dexter	Heartland Co-Op Dexter
Madison	Earlham	Farmers Cooperative Company -1 - Earlham
Cass	Atlantic	Atlantic Water Supply
Pottawattamie	Council Bluffs	SMV Industries
Pottawattamie	Council Bluffs	West Iowa Tool & Die Inc.
Pottawattamie	Council Bluffs	Ready Mixed Concrete Co Council Bluffs Plant

Source: U.S. Environmental Protection Agency (USEPA), NPL website. Retrieved on May 31, 2012. *http://www.epa.gov/superfund/sites/npl/index.htm*
And Iowa DOT database

Notes:

[a] *These sites are designated as "Brownfields"*

Table 7. Hazardous Material Sites (Non-NPL) Impacts – NEBRASKA

County	City/Town	Facility Name[a]
Douglas	Omaha	Gould Incorporated[a]
Douglas	Omaha	ASARCO Inc. Omaha Plant[a]

Source: U.S. Environmental Protection Agency (USEPA), NPL website. Retrieved on May 31, 2012. http://www.epa.gov/superfund/sites/npl/index.htm

Notes:

[a] *Theses non-NPL-listed sites are stated as being part of the Omaha Lead NPL (Superfund) site.*

[b] *Theses non-NPL-listed sites are stated as being part of the Omaha Lead NPL (Superfund) site.*

Table 8. Leaking Underground Storage Tank (LUST) Impacts

State	County	City/Town	Facility Name
Illinois	Cook	Chicago	Burlington Northern Railroad – 1
Illinois	Cook	Cicero	Burlington Northern Railroad – 2
Illinois	Cook	La Grange	La Grange, Village of
Illinois	Kane	Aurora	Aurora East School Dist. No.131
Illinois	Kendall	Plano	Westwood Camping Ctr.
Illinois	La Salle	Mendota	Jim Davis Abons Michelson
Illinois	La Salle	Mendota	Buckman Iron & Metal
Illinois	La Salle	Mendota	Meriden Township
Illinois	Bureau	Princeton	Mair Oil Co.
Illinois	Bureau	Princeton	Advanced Asphalt
Illinois	Bureau	Princeton	Princeton, City of
Illinois	Bureau	Malden	Berlyn Township
Illinois	Bureau	(rural)	Burlington Northern Railroad
Illinois	Henry	Geneseo	Kittrell, Lorraine Estate of
Illinois	Rock Island	Moline	Renew Moline
Iowa	Iowa	Marengo	Iowa County Shop
Iowa	Polk	Des Moines	National Sheet Metal
Iowa	Polk	Des Moines	Gilcrest/Jewett Lumber Co
Iowa	Polk	Des Moines	Kemin Holdings LC - 1
Iowa	Polk	Des Moines	Kemin Holdings LC - 2
Iowa	Polk	Des Moines	Waste Management Of Iowa
Iowa	Polk	Des Moines	Capital DX
Iowa	Pottawattamie	Council Bluffs	Oil Products Co Inc.
Iowa	Pottawattamie	Council Bluffs	Clark Ready Mix Co
Iowa	Pottawattamie	Council Bluffs	Former Ia Southern RR Co.
Iowa	Pottawattamie	Council Bluffs	Auto Convoy
Nebraska	Douglas	Omaha	Jacobsen Fish Company
Nebraska	Douglas	Omaha	Thrifty Car Rental
Nebraska	Douglas	Omaha	10th Street Automotive
Nebraska	Douglas	Omaha	Thrifty Car Rental
Nebraska	Douglas	Omaha	US Sprint-Omaha
Nebraska	Douglas	Omaha	US Sprint
Nebraska	Douglas	Omaha	Don Halsey
Nebraska	Douglas	Omaha	Don Halsey

Source: Illinois EPA, Iowa DNR, and Nebraska NDEQ

Table 9. Waste Water Treatment Facilities Impacts

State	County	City/Town	Facility Name
Iowa	Polk	Des Moines	Titan Tire Corporation-FD-1

Source: Iowa DOT database, EPA Facility Registry System, and Bing aerial photography

APPENDIX H

CULTURAL RESOURCES

Table 1. Historic Resources within the Area of Potential Effects

NRHP Site Number[a]	County and State	Site Name	Site Type
	Cook, IL	Union Station--Chicago	Building
	Cook, IL	Bridge (Structure #016-6026) on Jackson Blvd	Bridge
1000868	Cook, IL	United States Post Office--Chicago	Building
78001128	Cook, IL	Schoenhofen Brewery Historic District	District
05001609	Cook, IL	Pilsen Historic District	District
04000870	Cook, IL	South Water Market Historic District	District
3000538	Cook, IL	Produce Terminal Cold Storage Company Building	Building
08001097	Cook, IL	Otis Elevator Company Factory Building	Building
	Cook, IL	Building at 19 N. Kensington - La Grange Village Historic District	Building
	Cook, IL	Building at 19 N. Catherine - La Grange Village Historic District	Building
	Cook, IL	Building at 20 N. Catherine - La Grange Village Historic District	Building
	Cook, IL	Building on Longcommon Rd. - Riverside Landscape Architecture District	Building
	Cook, IL	Water Tower, Well House and Pump House - Riverside Landscape Architecture District	Building
81000219	Cook, IL	Western Springs Water Tower	Building
74000755	Cook, IL	Shedd Park Fieldhouse	Building
82005019	Cook, IL	Berwyn Suburban Station	Building
82004912	Cook, IL	Grossdale Station	Building
69000055	Cook, IL	Riverside Landscape Architecture District	District
79000834	Cook, IL	La Grange Village Historic District	District
	Cook, IL	Stone Avenue Station	Building
08001098	DuPage, IL	Robbins Park Historic District	District
06000011	DuPage, IL	Downtown Hinsdale Historic District	District
	DuPage, IL	Building at 330 N. Loomis - Naperville Historic District	Building
	DuPage, IL	Building at 103 N. Loomis - Naperville Historic District	Building
77001516	DuPage, IL	Naperville Historic District	District
96000856	Kane, IL	LaSalle Street Auto Row Historic District	District
78001154	Kane, IL	Chicago, Burlington & Quincy Roundhouse and Locomotive Shop	Building
	Kane, IL	Chicago, Burlington & Quincy Railroad Depot	Building
	Kane, IL	Bridge (Structure #045-6002) on North Avenue	Bridge
93001238	Kendall, IL	Chicago, Burlington and Quincy Railroad Depot	Building
93001239	Kendall, IL	Plano Hotel	Building
79003159	DeKalb, IL	Sandwich City Hall	Building
	DeKalb, IL	Sandwich Public Library	Building
85000979	DeKalb, IL	Von KleinSmid Mansion	Building
	LaSalle, IL	Illinois Central Railroad Freight House	Building
	Bureau, IL	Bridge (Structure #006-9934) over TR 170B carrying BN RR	Bridge
78003433	Bureau and Henry, IL	Hennepin Canal Historic District	District

NRHP Site Number[a]	County and State	Site Name	Site Type
	Henry, IL	Bridge (Structure #037-3016) over Hennepin Canal	Bridge
	Henry, IL	Municipal Water Tank	Structure
	Rock Island, IL	Deere Building	Building
94000025	Rock Island, IL	LeClaire Hotel	Building
07000856	Rock Island, IL	Moline Downtown Commercial Historic District	District
	Rock Island, IL	Washington Square Apartments	Building
82002596	Rock Island, IL	Rock Island Lines Passenger Station	Building
69000057	Rock Island, IL	Rock Island Arsenal	District
04000175	Rock Island, IL	Lock and Dam No. 15 Historic District	District
	Scott, IA	City Market	Building
	Scott, IA	Automotive Garage	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	Hartmann, Friedrich, House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	Bahls, John, House	Building
	Scott, IA	Hahn, Wulff, House	Building
	Scott, IA	Ruch, John, House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	Schriebel, George, House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	Otten, John G., House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	Randolph, Joseph, House	Building
	Scott, IA	Ruhl, Lucas, House	Building
	Scott, IA	Heinz, Bonaventura, House (second)	Building

NRHP Site Number[a]	County and State	Site Name	Site Type
	Scott, IA	Littig Brothers/Mengel and Klindt/Eagle Brewery	Building
	Scott, IA	Worley, Philip, House	Building
	Scott, IA	Wupperman Block/I.O.O.F. Hall	Building
	Scott, IA	Old City Hall	Building
	Scott, IA	House	Building
	Scott, IA	Commercial Building	Building
	Scott, IA	House	Building
	Scott, IA	St. Mary's Roman Catholic Church Complex	Building
	Scott, IA	St. Mary's Roman Catholic Church Complex--Parish School	Building
	Scott, IA	St. Mary's Roman Catholic Church Complex--Rectory	Building
	Scott, IA	St. Mary's Roman Catholic Church Complex--Convent	Building
	Scott, IA	St. Mary's Roman Catholic Church Complex--St. Mary's Church	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	1906 Gaines Street, Duplex	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	American Telephone and Telegraph Company Building	Building
	Scott, IA	Chicago, Rock Island, and Pacific Railroad Elevated Track	Structure
	Scott, IA	Scott County Jail	Building
	Scott, IA	Apartment Building	Building
	Scott, IA	House	Building
	Scott, IA	Apartment Building	Building
	Scott, IA	Walker, Edna, House	Building
	Scott, IA	House	Building
	Scott, IA	Mueller, Christian, House	Building
	Scott, IA	House	Building
	Scott, IA	Kurmeier, Henry, House	Building
	Scott, IA	Mattrey, Dr. Henry, Stables	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	House	Building
	Scott, IA	Petersen, Lavinius W., House	Building
	Scott, IA	St. Anthony's Catholic Church Complex	Building

NRHP Site Number[a]	County and State	Site Name	Site Type
	Scott, IA	St. Anthony's Catholic Church Complex: St. Anthony's Rectory	Building
	Scott, IA	Davenport Paper Box Company	Building
	Scott, IA	Ewert and Richter Express and Storage Company (West Building)	Building
	Scott, IA	Ewert and Richter Express and Storage Company (East Building)	Building
	Scott, IA	Neu, Vincent J., Auto Dealership	Building
	Scott, IA	Halligan Coffee Company	Building
	Scott, IA	Chicago, Rock Island, and Pacific Railroad Elevated Rail Bed	Structure
	Scott, IA	Matthews Building	Building
	Scott, IA	National Biscuit Company	Building
	Scott, IA	Smith Brothers and Burdick Company	Building
83003656	Scott, IA	Hamburg Historic District	District
03001290	Scott, IA	Crescent Warehouse Historic District	District
84001538	Scott, IA	St. Anthony's Catholic Church Complex	District
84001558	Scott, IA	St. Mary's Roman Catholic Church Complex	District
	Muscatine, IA	Chicago, Rock Island, & Pacific Railroad - Wilton Depot	Building
	Muscatine, IA	Evans, P.R./Schafer Grain Company Elevator and Office	Building
	Muscatine, IA	Auto Garage	Building
	Muscatine, IA	Tire/Liquor Store	Building
	Muscatine, IA	Masonic Temple	Building
	Muscatine, IA	Masonic Temple/Schooley Furniture Store	Building
	Muscatine, IA	West Liberty Fire Station and City Hall	Building
	Muscatine, IA	Bakery Shop	Building
	Muscatine, IA	Agricultural Implement Store	Building
	Muscatine, IA	Burkhart, G., Building	Building
	Muscatine, IA	Jewelry Store	Building
	Muscatine, IA	Chesebrough Building	Building
	Muscatine, IA	Iowa State Bank and Trust Company	Building
02001035	Muscatine, IA	West Liberty Commercial District	District
	Cedar, IA	Downey Savings Bank	Building
	Johnson, IA	House	Building
	Johnson, IA	House	Building
	Johnson, IA	House	Building
	Johnson, IA	Prizler House	Building
	Johnson, IA	House	Building
	Johnson, IA	House	Building
	Johnson, IA	House	Building
	Johnson, IA	Powers, Jamie, House	Building
	Johnson, IA	House	Building
	Johnson, IA	House	Building
	Johnson, IA	Vogt House	Building
	Johnson, IA	Chicago, Rock Island, and Pacific Passenger Station	Building
	Johnson, IA	Brookland Park	Building

NRHP Site Number[a]	County and State	Site Name	Site Type
04001321	Johnson, IA	Melrose Historic District	District
73000732	Johnson, IA	South Summit Street District	District
	Iowa, IA	Pumphouse	Building
	Iowa, IA	Implement Building	Building
	Iowa, IA	Implement Storage Building	Building
	Iowa, IA	Lumber Yard Office	Building
	Iowa, IA	Wohnhaus	Building
	Iowa, IA	Taglöhner Haus	Building
	Iowa, IA	Wohnhaus and Küche	Building
	Iowa, IA	Apotheke and Doctor's Office	Building
	Iowa, IA	Wohnhaus	Building
	Iowa, IA	Wohnhaus and Woodshed/Wash House	Building
	Iowa, IA	Wohnhaus and Wash House	Building
	Iowa, IA	Wohnhaus and Küche	Building
	Iowa, IA	Homestead Store	Building
64500787	Iowa, IA	Amana Colonies	District
76000805	Poweshiek, IA	Chicago, Rock Island and Pacific Railroad-Grinnell Passenger Station	Building
	Poweshiek, IA	Brooklyn Hotel	Building
	Poweshiek, IA	Cass and Works Building	Building
	Poweshiek, IA	Cass and Works Building	Building
	Poweshiek, IA	Proctor Building	Building
	Poweshiek, IA	Herald Building	Building
	Poweshiek, IA	Herald Building	Building
	Poweshiek, IA	Bowers and McDonald Office Building	Building
	Poweshiek, IA	Seaman Building	Building
	Poweshiek, IA	Commercial Building	Building
	Poweshiek, IA	McIntosh Grocery	Building
91000384	Poweshiek, IA	Grinnell Historic Commercial District	District
82000410	Jasper, IA	Arthur, Thomas House	Building
	Polk, IA	Grocers Wholesale Company Warehouse	Building
	Polk, IA	Chicago, Rock Island & Pacific Railroad Bridge	Bridge
	Polk, IA	Municipal Court and Public Safety Building	Building
	Polk, IA	Des Moines Union Railway Company Bridge	Bridge
03001262	Polk, IA	Linden Heights Historic District	District
88001168	Polk, IA	Civic Center Historic District	District
	Dallas, IA	Archaeological Site 13DA299	Archaeological Site
	Adair, IA	Chicago, Rock Island and Pacific Railroad: Stuart Passenger Station	Building
	Adair, IA	Adair Viaduct	Bridge
	Cass, IA	Chicago, Rock Island, & Pacific Railroad Depot	Building
95000856	Pottawattamie, IA	Chicago, Rock Island & Pacific Railroad Passenger Depot	Building
74001110	Douglas, NE	Burlington Station	Building
91001759	Douglas, NE	Eggerss O'Flyng Building	Building
93000558	Douglas, NE	10th Street Viaduct	Bridge
96000769	Douglas, NE	Omaha Rail and Commerce Historic District	District
71000484	Douglas, NE	Union Passenger Terminal	Building

Sources:

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Illinois Historic Preservation Agency. September 2012. Architectural properties data for the Chicago to Omaha Corridor. Provided by Trey McGhee, Chief Information Officer, on September 14, 2012.

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Iowa State Historic Preservation Office. Architectural properties data for the Chicago to Omaha Corridor. Provided by Berry Bennett, Iowa Site Inventory Coordinator, on August 3, 2012 (shapefiles) and August 14, 2012 (database information).

Nebraska State Historical Society. July 2012. Archaeological sites and surveys data for the Chicago to Omaha Corridor. Provided by Trisha Nelson, Curator, Archaeology Collections, on July 17, 2012.

Nebraska State Historical Society. August 2012. Architectural properties data for the Chicago to Omaha Corridor. Provided by Patrick Haynes, Historic Resources Survey & Inventory Coordinator, on August 15, 2012.

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APPENDIX I

PARKS AND FEDERALLY OR STATE-LISTED NATURAL AREAS

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Table 1. Parks, Recreation Areas, and Natural Areas within the Study Area

Name	Type	City	County	State
Crown Academy	Recreation Area-School	Chicago	Cook	Illinois
Douglas Park	Park-City	Chicago	Cook	Illinois
Hawthorne Park	Park-City	Chicago	Cook	Illinois
Homan Playlot Park	Park-City	Chicago	Cook	Illinois
Jefferson Park	Park-City	Chicago	Cook	Illinois
Marshall Blvd	Park-City	Chicago	Cook	Illinois
Paderewski Elementary School	Recreation Area-School	Chicago	Cook	Illinois
Shedd Park	Park-City	Chicago	Cook	Illinois
Berguin Recreation and Field Park	Park-City	Berwyn	Cook	Illinois
Guthrie Park	Park-City	Riverside	Cook	Illinois
Zoo Woods Forest Preserve	Natural Area-County Forest Preserve	Riverside	Cook	Illinois
Kiwanis	Park-City	Brookfield	Cook	Illinois
Shawmut Park	Park-City	La Grange	Cook	Illinois
Park	Park-City	La Grange	Cook	Illinois
Field Park	Park-City	Western Springs	Cook	Illinois
Spring Rock Park	Park-City	Western Springs	Cook	Illinois
Tower Green	Park-City	Western Springs	Cook	Illinois
Western Springs Swimming Pool	Recreation Area-Swimming Pool	Western Springs	Cook	Illinois
Highland Park	Park-City	Hinsdale	Cook	Illinois
Pierce Park	Park-City	Hinsdale	Cook	Illinois
Veeck Park	Park-City	Hinsdale	Cook	Illinois
Hinsdale Swimming Pool	Recreation Area-Swimming Pool	Hinsdale	DuPage	Illinois
Stough Park	Park-City	Hinsdale	DuPage	Illinois
Community Park	Park-City	Clarendon Hills	DuPage	Illinois
Blackhawk Park	Park-City	Clarendon Hills	DuPage	Illinois
Blue Lake Park	Park-City	Clarendon Hills	DuPage	Illinois
Lions Park	Park-City	Clarendon Hills	DuPage	Illinois
Mary Egan Park	Park-City	Westmont	DuPage	Illinois
Belmont Prairie Nature Preserve	Natural Area-County Nature Preserve	Downers Grove	DuPage	Illinois
Gilbert Park	Park-City	Downers Grove	DuPage	Illinois
Loy Park	Park-City	Downers Grove	DuPage	Illinois
Prince Park	Park-City	Downers Grove	DuPage	Illinois
Maple Grove Forest Preserve	Natural Area-County Forest Preserve	Downers Grove	DuPage	Illinois
Hitchcock Woods County Forest Preserve	Natural Area-County Forest Preserve	Lisle	DuPage	Illinois
Heritage Park	Park-City	Lisle	DuPage	Illinois
Lisle Community Park	Park-City	Lisle	DuPage	Illinois
Peach Creek Park	Park-City	Lisle	DuPage	Illinois
Brush Hill Park	Park-City	Naperville	DuPage	Illinois
Burlington Park	Park-City	Naperville	DuPage	Illinois
Burlington Square Park	Park-City	Naperville	DuPage	Illinois
Columbia Estates Park	Park-City	Naperville	DuPage	Illinois
Heritage Woods Preservation Area	Park-City	Naperville	DuPage	Illinois
Kendall Park	Park-City	Naperville	DuPage	Illinois
Kroehler Park	Park-City	Naperville	DuPage	Illinois
Old Plank Park	Park-City	Naperville	DuPage	Illinois
Spring Hill Park North	Park-City	Naperville	DuPage	Illinois

Name	Type	City	County	State
Spring Hill Park Greenway	Park-City	Naperville	DuPage	Illinois
Naperville Country Club	Recreation Area-Golf Course-Public	Naperville	DuPage	Illinois
Wil-o-Way Commons Park	Park-City	Naperville	DuPage	Illinois
Asbury Park	Park-City	Aurora	DuPage	Illinois
Eola Road Marsh	Natural Area-Natural Area-Private	Aurora	DuPage	Illinois
Night Heron Marsh	Natural Area-County Forest Preserve	Aurora	DuPage	Illinois
Sutton Lake Park	Park-City	Aurora	DuPage	Illinois
Copley Playground	Park-City	Aurora	Kane	Illinois
Lincoln Mini Park	Park-City	Aurora	Kane	Illinois
Solfisburg Park	Park-City	Aurora	Kane	Illinois
Hurd's Island Park	Park-City	Aurora	Kendall	Illinois
Blackberry Oaks Golf Course	Recreation Area-Golf Course-Public	Bristol	Kendall	Illinois
Stephen G. Bridge Park	Park-City	Bristol	Kendall	Illinois
Klatt Park	Park-City	Plano	Kendall	Illinois
Lathrop Park	Park-City	Plano	Kendall	Illinois
Sannauk Forest Preserve	Natural Area-County Forest Preserve	Sandwich	DeKalb	Illinois
Earlville Country Club	Recreation Area-Golf Course-Private	Earlville	LaSalle	Illinois
Apple Orchard Park	Park-City	Mendota	LaSalle	Illinois
Darius Miller Park	Park-City	Princeton	Bureau	Illinois
Hennepin Canal Parkway State Park	Park-State	Wyanet	Bureau	Illinois
G E Holting Park	Park-City	Geneseo	Henry	Illinois
Gaillaert Field	Park-City	Colona	Henry	Illinois
Carbon Cliff Park	Park-City	Carbon Cliff	Rock Island	Illinois
Ben Butterworth Parkway	Park-City	Moline	Rock Island	Illinois
Riverside Park	Park-City	Moline	Rock Island	Illinois
Mississippi River	Recreation Area-River Access	Davenport	Scott	Iowa
Bechtel Park	Park-City	Davenport	Scott	Iowa
Duck Creek Parkway	Recreation Area-Trail	Davenport	Scott	Iowa
Fejervary Park	Park-City	Davenport	Scott	Iowa
Lafayette Park	Park-City	Davenport	Scott	Iowa
Riverfront Trail	Recreation Area-Trail	Davenport	Scott	Iowa
Norton Nature Area	Park-County	Durant	Scott	Iowa
Wahkonsa Country Club	Recreation Area-Golf Course-Private	Durant	Scott	Iowa
Jack Shuger Memorial Park	Park-County	Moscow	Muscatine	Iowa
Woodland	Natural Area-Woodland		Cedar	Iowa
Ralston Creek	Natural Area-Greenbelt	Iowa City	Johnson	Iowa
Brookland Park	Park-City	Iowa City	Johnson	Iowa
Clear Creek Greenbelt	Natural Area-City Preserve	Iowa City	Johnson	Iowa
Clear Creek Trail	Recreation Area-Trail	Iowa City	Johnson	Iowa
Finkbine Golf Course	Recreation Area-Golf Course-Public	Iowa City	Johnson	Iowa
Finkbine Prairie (West)	Natural Area-Research Area	Iowa City	Johnson	Iowa
Finkbine Woodlands	Natural Area-Open Space	Iowa City	Johnson	Iowa

Name	Type	City	County	State
Hawkeye Softball Complex/Cretzmeyer Track	Recreation Area	Iowa City	Johnson	Iowa
Iowa River Corridor Trail	Recreation Area-Trail	Iowa City	Johnson	Iowa
Kinnick Stadium	Recreation Area-Stadium	Iowa City	Johnson	Iowa
Longfellow Nature Trail	Park-City	Iowa City	Johnson	Iowa
Lower Finkbine Trail	Recreation Area-Trail	Iowa City	Johnson	Iowa
Mercer Park	Park-City	Iowa City	Johnson	Iowa
Mercer Park Aquatic Center	Park-City	Iowa City	Johnson	Iowa
Oak Grove Park	Park-City	Iowa City	Johnson	Iowa
Outdoor Research Area	Natural Area-Research Area	Iowa City	Johnson	Iowa
Lions Park	Park-City	Iowa City	Johnson	Iowa
Iowa River	Recreation Area-River Access	Iowa City	Johnson	Iowa
Unnamed Trail Segments (12)	Recreation Area-Trail	Iowa City	Johnson	Iowa
1st Ave. to SE Corp. Limits Coralville	Recreation Area-Trail	Coralville	Johnson	Iowa
North Ridge Trail	Recreation Area-Trail	Coralville	Johnson	Iowa
Clear Creek Amana Middle School	Recreation Area-School	Tiffin	Johnson	Iowa
Clear Creek Area	Natural Area-Wildlife Management Area	Tiffin	Johnson	Iowa
East Tiffin Trail	Recreation Area-Trail	Tiffin	Johnson	Iowa
Tiffin City Park	Park-City	Tiffin	Johnson	Iowa
FW Kent Park	Park-County	Oxford	Johnson	Iowa
Woodland Areas (14)	Natural Area-Woodland		Johnson	Iowa
Port Louisa National Wildlife Refuge	Natural Area-Permanent Conservation Easement		Iowa	Iowa
Marengo Memorial Park	Park-City	Marengo	Iowa	Iowa
Ingraham Park	Park-City	Ladora	Iowa	Iowa
Laura and Skinny Schlesselman Wildlife Area	Natural Area-Wildlife Management Area	Ladora	Iowa	Iowa
Woodland	Natural Area-Woodland		Iowa	Iowa
Jacob Krumm Nature Preserve	Natural Area-Wildlife Management Area	West of Grinnell	Jasper	Iowa
Grinnell Central Park	Park-City	Grinnell	Poweshiek	Iowa
Jaycee Park	Park-City	Grinnell	Poweshiek	Iowa
Kellogg RV Park	Park-City	Kellogg	Jasper	Iowa
Kellogg State Game	Natural Area-Wildlife Management Area	Kellogg	Jasper	Iowa
Rock Creek State Park, Reichelt Unit	Park-State	Kellogg	Jasper	Iowa
Sunset Park	Park-City	Newton	Jasper	Iowa
Westwood Park Golf Course	Recreation Area-Golf Course-Public	Newton	Jasper	Iowa
Woodland Municipal Park	Park-City	Newton	Jasper	Iowa
Colfax WMA	Natural Area-Wildlife Management Area	Colfax	Jasper	Iowa
Mineral Spring Park	Park-City	Colfax	Jasper	Iowa
Schlosser Park	Park-City	Colfax	Jasper	Iowa
City Park	Park-City	Mitchellville	Jasper	Iowa
Altoona Campus	Recreation Area-Recreation Center	Altoona	Polk	Iowa
Eagle Ridge Park	Park-City	Altoona	Polk	Iowa

Name	Type	City	County	State
Greenway Trail	Recreation Area-Trail	Altoona	Polk	Iowa
Lions Park	Park-City	Altoona	Polk	Iowa
Prairie Heritage Trail	Recreation Area-Trail	Altoona	Polk	Iowa
Twin Creek Park	Park-City	Altoona	Polk	Iowa
Copper Creek Golf Course	Recreation Area-Golf Course-Private	Pleasant Hill	Polk	Iowa
Sunset Park	Park-City	Pleasant Hill	Polk	Iowa
Bill Riley Trail	Recreation Area-Trail	Des Moines	Polk	Iowa
Chesterfield Park	Park-City	Des Moines	Polk	Iowa
Denman's Woods Trail	Recreation Area-Trail	Des Moines	Polk	Iowa
East Des Moines Girls Softball Association	Recreation Area-Athletic Fields-Private	Des Moines	Polk	Iowa
Gay Lea Wilson Trail	Recreation Area-Trail	Des Moines	Polk	Iowa
John Pat Dorrian Trail	Recreation Area-Trail	Des Moines	Polk	Iowa
Meredith Trail	Recreation Area-Trail	Des Moines	Polk	Iowa
Sleepy Hollow Sports Park	Recreation Area-Athletic Fields-Private	Des Moines	Polk	Iowa
Waterworks Park	Park-City	Des Moines	Polk	Iowa
Fuller Road to Levee Trail	Recreation Area-Trail	West Des Moines	Polk	Iowa
Levee Trail	Recreation Area-Trail	West Des Moines	Polk	Iowa
Raccoon River Park	Park-City	West Des Moines	Polk	Iowa
Raccoon River Park Trail	Recreation Area-Trail	West Des Moines	Polk	Iowa
Railroad Avenue Trail	Recreation Area-Trail	West Des Moines	Polk	Iowa
Walnut Woods State Park	Park-State	West Des Moines	Polk	Iowa
West Grand Avenue Trail	Recreation Area-Trail	West Des Moines	Polk	Iowa
Woodland	Natural Area-Woodland		Polk	Iowa
Woodland	Natural Area-Woodland		Polk	Iowa
Two Rivers Access	Recreation Area-River Access	Van Meter	Dallas	Iowa
Van Meter Recreation Complex	Recreation Area-Athletic Fields	Van Meter	Dallas	Iowa
Little Bridge Park	Park-City	De Soto	Dallas	Iowa
Woodland (4)	Natural Area-Woodland		Dallas	Iowa
Woodland	Natural Area-Woodland		Madison	Iowa
Karl and Grace Correll Wildlife Area	Natural Area-Wildlife Management Area	East of Adair	Guthrie	Iowa
Lawbaugh City Park	Park-City	Stuart	Adair	Iowa
Jesse James Historical Park	Park-City	Adair	Adair	Iowa
Adair City Park	Park-City	Adair	Adair	Iowa
Crestwood Hills Golf Course	Recreation Area-Golf Course-Private	Anita	Cass	Iowa
Lake Anita State Park	Park-State	Anita	Cass	Iowa
Wiota City Park	Park-City	Wiota	Cass	Iowa
Pellet Wildlife Refuge	Natural Area-Wildlife Management Area	Atlantic	Cass	Iowa
Woodland	Natural Area-Woodland		Cass	Iowa
Bahnsen Park	Park-City	Council Bluffs	Pottawattamie	Iowa
Broadway Park	Park-City	Council Bluffs	Pottawattamie	Iowa
Council Bluffs Riverfront	Recreation Area-State Recreation Area	Council Bluffs	Pottawattamie	Iowa

Name	Type	City	County	State
Indian Creek Trail	Recreation Area-Trail	Council Bluffs	Pottawattamie	Iowa
Iowa River Bike Trail	Recreation Area-Trail	Council Bluffs	Pottawattamie	Iowa
Avenue G Bike Trail	Recreation Area-Trail	Council Bluffs	Pottawattamie	Iowa
Valley View	Recreation Area-Trail	Council Bluffs	Pottawattamie	Iowa
Westwood Park	Park-City	Council Bluffs	Pottawattamie	Iowa
Southside Trail Bike Trail	Recreation Area-Trail	Council Bluffs	Pottawattamie	Iowa
Bob Kerrey Pedestrian Bridge	Recreation Area-Trail	Omaha	Douglas	Nebraska
Riverfront	Recreation Area-Trail	Omaha	Douglas	Nebraska
Qwest Center Connector	Recreation Area-Trail	Omaha	Douglas	Nebraska
Heartland of America Park	Recreation Area-Trail	Omaha	Douglas	Nebraska
Century Link Center	Recreation Area-Stadium	Omaha	Douglas	Nebraska
Freedom Park	Park-City	Omaha	Douglas	Nebraska
Heartland of America Park	Park-City	Omaha	Douglas	Nebraska
Lewis & Clark Landing	Park-City	Omaha	Douglas	Nebraska

Sources: Illinois Department of Natural Resources (DNR), Iowa DNR, City of Omaha, Forest Preserve District of Cook County Forest Preserve District of DuPage County, Fox Valley Park District, Naperville Park District, City of Aurora, Polk County, ESRI Streetmap, Google Earth Pro, Bing.

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Table 2. Parks, Recreation Areas, and Natural Areas within the Potential Impact Area

Name	Type	City	County	State
Shedd Park	Park–City	Chicago	Cook	Illinois
Zoo Woods Forest Preserve	Natural Area–County Forest Preserve	Riverside	Cook	Illinois
Kiwanis Park	Park–City	Brookfield	Cook	Illinois
Shawmut Park	Park–City	La Grange	Cook	Illinois
Spring Rock Park	Park–City	Western Springs	Cook	Illinois
Highland Park	Park–City	Hinsdale	Cook	Illinois
Pierce Park	Park–City	Hinsdale	Cook	Illinois
Veeck Park	Park–City	Hinsdale	Cook	Illinois
Stough Park	Park–City	Hinsdale	DuPage	Illinois
Community Park	Park–City	Clarendon Hills	DuPage	Illinois
Blackhawk Park	Park–City	Clarendon Hills	DuPage	Illinois
Blue Lake Park	Park–City	Clarendon Hills	DuPage	Illinois
Lions Park	Park–City	Clarendon Hills	DuPage	Illinois
Lisle Community Park	Park–City	Lisle	DuPage	Illinois
Burlington Park	Park–City	Naperville	DuPage	Illinois
Burlington Square Park	Park–City	Naperville	DuPage	Illinois
Heritage Woods Preservation Area	Park–City	Naperville	DuPage	Illinois
Old Plank Park	Park–City	Naperville	DuPage	Illinois
Naperville Country Club	Recreation Area–Golf Course–Public	Naperville	DuPage	Illinois
Eola Road Marsh	Natural Area–Natural Area–Private	Aurora	DuPage	Illinois
Sutton Lake Park	Park–City	Aurora	DuPage	Illinois
Copley Playground	Park–City	Aurora	Kane	Illinois
Solfisburg Park	Park–City	Aurora	Kane	Illinois
Blackberry Oaks Golf Course	Recreation Area–Golf Course–Public	Bristol	Kendall	Illinois
Klatt Park	Park–City	Plano	Kendall	Illinois
Hennepin Canal Parkway State Park	Park–State	Wyanet	Bureau	Illinois
G E Holting Park	Park–City	Geneseo	Henry	Illinois
Mississippi River	Recreation Area–River Access	Davenport	Scott	Iowa
Wahkonsa Country Club	Recreation Area–Golf Course–Private	Durant	Scott	Iowa
Port Louisa National Wildlife Refuge	Natural Area–National Wildlife Refuge		Iowa	Iowa
Clear Creek Greenbelt	Natural Area–City Preserve	Iowa City	Johnson	Iowa
Finkbine Golf Course	Recreation Area–Golf Course–Public	Iowa City	Johnson	Iowa
Finkbine Prairie (West)	Natural Area–Research Area	Iowa City	Johnson	Iowa
Kinnick Stadium	Recreation Area–Stadium	Iowa City	Johnson	Iowa
Longfellow Nature Trail	Park–City	Iowa City	Johnson	Iowa
Oak Grove Park	Park–City	Iowa City	Johnson	Iowa
Outdoor Research Area	Natural Area–Research Area	Iowa City	Johnson	Iowa
Lions Park	Park–City	Iowa City	Johnson	Iowa
Iowa River	Recreation Area–River Access	Iowa City	Johnson	Iowa
Tiffin City Park	Park–City	Tiffin	Johnson	Iowa
Woodland (6)	Natural Area–Woodland		Johnson	Iowa

Name	Type	City	County	State
Ingraham Park	Park–City	Ladora	Iowa	Iowa
Jacob Krumm Nature Preserve	Natural Area–Wildlife Management Area	West of Grinnell	Jasper	Iowa
Jaycee Park	Park–City	Grinnell	Poweshiek	Iowa
Sunset Park	Park–City	Newton	Jasper	Iowa
Woodland Muncipal Park	Park–City	Newton	Jasper	Iowa
Colfax Wildlife Management Area	Natural Area–Wildlife Management Area	Colfax	Jasper	Iowa
City Park	Park–City	Mitchellville	Jasper	Iowa
Altoona Campus	Recreation Area–Recreation Center	Altoona	Polk	Iowa
Lions Park	Park–City	Altoona	Polk	Iowa
Prairie Heritage Trail	Recreation Area–Trail	Altoona	Polk	Iowa
Twin Creek Park	Park–City	Altoona	Polk	Iowa
Copper Creek Golf Course	Recreation Area–Golf Course–Private	Pleasant Hill	Polk	Iowa
Bill Riley Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Chesterfield Park	Park–City	Des Moines	Polk	Iowa
Gay Lea Wilson Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Waterworks Park	Park–City	Des Moines	Polk	Iowa
Levee Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Raccoon River Park	Park–City	West Des Moines	Polk	Iowa
Walnut Woods State Park	Park–State	West Des Moines	Polk	Iowa
Woodland	Natural Area–Woodland		Polk	Iowa
Two Rivers Access	Recreation Area–River Access	Van Meter	Dallas	Iowa
Van Meter Recreation Complex	Recreation Area–Athletic fields	Van Meter	Dallas	Iowa
Little Bridge Park	Park–City	De Soto	Dallas	Iowa
Woodland (3)	Natural Area–Woodland		Dallas	Iowa
Woodland	Natural Area–Woodland		Madison	Iowa
Jesse James Historical Park	Park–City	Adair	Adair	Iowa
Adair City Park	Park–City	Adair	Adair	Iowa
Karl and Grace Correll Wildlife Area	Natural Area–Wildlife Management Area	East of Adair	Guthrie	Iowa
Pellet Wildlife Refuge	Natural Area–Wildlife Management Area	Atlantic	Cass	Iowa
Woodland	Natural Area–Woodland		Cass	Iowa
Bahnsen Park	Park–City	Council Bluffs	Pottawattamie	Iowa
Council Bluffs Riverfront	Recreation Area–State Recreation Area	Council Bluffs	Pottawattamie	Iowa
Iowa River Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Valley View	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Southside Trail Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Avenue G Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Freedom Park	Park–City	Omaha	Douglas	Nebraska
Heartland of America Park	Recreation Area–Trail	Omaha	Douglas	Nebraska
Lewis & Clark Landing	Park–City	Omaha	Douglas	Nebraska
Century Link Center Connector	Recreation Area–Trail	Omaha	Douglas	Nebraska
Riverfront	Recreation Area–Trail	Omaha	Douglas	Nebraska

Sources: Illinois Department of Natural Resources (DNR), Iowa DNR, City of Omaha, Forest Preserve District of Cook County Forest Preserve District of DuPage County, Fox Valley Park District, Naperville Park District, City of Aurora, Polk County, ESRI Streetmap, Google Earth Pro, Bing.

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APPENDIX J

SECTION 4(f) AND 6(f) PROPERTIES

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Table 1. Public Parks, Public Recreation Areas, Public Natural Areas, and Historic Sites within the Study Area

Name	Type	City	County	State
Union Station—Chicago	Historic Site–Historic Building	Chicago	Cook	Illinois
Bridge (Structure #016-6026) on Jackson Blvd	Historic Site–Bridge	Chicago	Cook	Illinois
United States Post Office—Chicago	Historic Site–Historic Building	Chicago	Cook	Illinois
Schoenhofen Brewery Historic District	Historic Site–Historic District	Chicago	Cook	Illinois
Pilsen Historic District	Historic Site–Historic District	Chicago	Cook	Illinois
South Water Market Historic District	Historic Site–Historic District	Chicago	Cook	Illinois
Produce Terminal Cold Storage Company Building	Historic Site–Historic Building	Chicago	Cook	Illinois
Otis Elevator Company Factory Building	Historic Site–Historic Building	Chicago	Cook	Illinois
Shedd Park Fieldhouse	Historic Site–Historic Building	Chicago	Cook	Illinois
Crown Academy	Recreation Area–School	Chicago	Cook	Illinois
Douglas Park	Park–City	Chicago	Cook	Illinois
Hawthorne Park	Park–City	Chicago	Cook	Illinois
Homan Playlot Park	Park–City	Chicago	Cook	Illinois
Jefferson Park	Park–City	Chicago	Cook	Illinois
Marshall Blvd	Park–City	Chicago	Cook	Illinois
Paderewski Elementary School	Recreation Area–School	Chicago	Cook	Illinois
Shedd Park	Park–City	Chicago	Cook	Illinois
Berwyn Suburban Station	Historic Site–Historic Building	Berwyn	Cook	Illinois
Berguin Recreation and Field Park	Park–City	Berwyn	Cook	Illinois
Building on Longcommon Rd. - Riverside Landscape Architecture District	Historic Site–Historic Building	Riverside	Cook	Illinois
Water Tower, Well House and Pump House - Riverside Landscape Architecture District	Historic Site–Historic Building	Riverside	Cook	Illinois
Riverside Landscape Architecture District	Historic Site–Historic District	Riverside	Cook	Illinois
Guthrie Park	Park–City	Riverside	Cook	Illinois
Zoo Woods Forest Preserve	Natural Area–County Forest Preserve	Riverside	Cook	Illinois
Grossdale Station	Historic Site–Historic Building	Brookfield	Cook	Illinois
Kiwanis	Park–City	Brookfield	Cook	Illinois
Building at 19 N. Kensington - La Grange Village Historic District	Historic Site–Historic Building	La Grange	Cook	Illinois
Building at 19 N. Catherine - La Grange Village Historic District	Historic Site–Historic Building	La Grange	Cook	Illinois
Building at 20 N. Catherine - La Grange Village Historic District	Historic Site–Historic Building	La Grange	Cook	Illinois
La Grange Village Historic District	Historic Site–Historic District	La Grange	Cook	Illinois

Name	Type	City	County	State
Stone Avenue Station	Historic Site–Historic Building	La Grange	Cook	Illinois
Shawmut Park	Park–City	La Grange	Cook	Illinois
Park	Park–City	La Grange	Cook	Illinois
Western Springs Water Tower	Historic Site–Historic Building	Western Springs	Cook	Illinois
Field Park	Park–City	Western Springs	Cook	Illinois
Spring Rock Park	Park–City	Western Springs	Cook	Illinois
Tower Green	Park–City	Western Springs	Cook	Illinois
Western Springs Swimming Pool	Recreation Area–Swimming Pool	Western Springs	Cook	Illinois
Highland Park	Park–City	Hinsdale	Cook	Illinois
Pierce Park	Park–City	Hinsdale	Cook	Illinois
Veeck Park	Park–City	Hinsdale	Cook	Illinois
Robbins Park Historic District	Historic Site–Historic District	Hinsdale	DuPage	Illinois
Downtown Hinsdale Historic District	Historic Site–Historic District	Hinsdale	DuPage	Illinois
Hinsdale Swimming Pool	Recreation Area–Swimming Pool	Hinsdale	DuPage	Illinois
Stough Park	Park–City	Hinsdale	DuPage	Illinois
Community Park	Park–City	Clarendon Hills	DuPage	Illinois
Blackhawk Park	Park–City	Clarendon Hills	DuPage	Illinois
Blue Lake Park	Park–City	Clarendon Hills	DuPage	Illinois
Lions Park	Park–City	Clarendon Hills	DuPage	Illinois
Mary Egan Park	Park–City	Westmont	DuPage	Illinois
Belmont Prairie Nature Preserve	Natural Area–County Nature Preserve	Downers Grove	DuPage	Illinois
Gilbert Park	Park–City	Downers Grove	DuPage	Illinois
Loy Park	Park–City	Downers Grove	DuPage	Illinois
Prince Park	Park–City	Downers Grove	DuPage	Illinois
Maple Grove Forest Preserve	Natural Area–County Forest Preserve	Downers Grove	DuPage	Illinois
Hitchcock Woods County Forest Preserve	Natural Area–County Forest Preserve	Lisle	DuPage	Illinois
Heritage Park	Park–City	Lisle	DuPage	Illinois
Lisle Community Park	Park–City	Lisle	DuPage	Illinois
Peach Creek Park	Park–City	Lisle	DuPage	Illinois
Building at 330 N. Loomis - Naperville Historic District	Historic Site–Historic Building	Naperville	DuPage	Illinois
Building at 103 N. Loomis - Naperville Historic District	Historic Site–Historic Building	Naperville	DuPage	Illinois
Naperville Historic District	Historic Site–Historic District	Naperville	DuPage	Illinois
Brush Hill Park	Park–City	Naperville	DuPage	Illinois
Burlington Park	Park–City	Naperville	DuPage	Illinois
Burlington Square Park	Park–City	Naperville	DuPage	Illinois
Columbia Estates Park	Park–City	Naperville	DuPage	Illinois
Heritage Woods Preservation Area	Park–City	Naperville	DuPage	Illinois
Kendall Park	Park–City	Naperville	DuPage	Illinois
Kroehler Park	Park–City	Naperville	DuPage	Illinois
Old Plank Park	Park–City	Naperville	DuPage	Illinois
Spring Hill Park North	Park–City	Naperville	DuPage	Illinois
Spring Hill Park Greenway	Park–City	Naperville	DuPage	Illinois

Name	Type	City	County	State
Naperville Country Club	Recreation Area–Golf Course–Public	Naperville	DuPage	Illinois
Wil–o–Way Commons Park	Park–City	Naperville	DuPage	Illinois
Asbury Park	Park–City	Aurora	DuPage	Illinois
Night Heron Marsh	Natural Area–County Forest Preserve	Aurora	DuPage	Illinois
Sutton Lake Park	Park–City	Aurora	DuPage	Illinois
Chicago, Burlington & Quincy Roundhouse and Locomotive Shop	Historic Site–Historic Building	Aurora	Kane	Illinois
LaSalle Street Auto Row Historic District	Historic Site–Historic District	Aurora	Kane	Illinois
Chicago, Burlington & Quincy Railroad Depot	Historic Site–Historic Building	Aurora	Kane	Illinois
Bridge (Structure #045-6002) on North Avenue	Historic Site–Historic Building	Aurora	Kane	Illinois
Copley Playground	Park–City	Aurora	Kane	Illinois
Lincoln Mini Park	Park–City	Aurora	Kane	Illinois
Solfisburg Park	Park–City	Aurora	Kane	Illinois
Hurd's Island Park	Park–City	Aurora	Kendall	Illinois
Blackberry Oaks Golf Course	Recreation Area–Golf Course–Public	Bristol	Kendall	Illinois
Stephen G. Bridge Park	Park–City	Bristol	Kendall	Illinois
Chicago, Burlington and Quincy Railroad Depot	Historic Site–Historic Building	Plano	Kendall	Illinois
Plano Hotel	Historic Site–Historic Building	Plano	Kendall	Illinois
Klatt Park	Park–City	Plano	Kendall	Illinois
Lathrop Park	Park–City	Plano	Kendall	Illinois
Sandwich City Hall	Historic Site–Historic Building	Sandwich	DeKalb	Illinois
Sandwich Public Library	Historic Site–Historic Building	Sandwich	DeKalb	Illinois
Von KleinSmid Mansion	Historic Site–Historic Building	Sandwich	DeKalb	Illinois
Sannauk Forest Preserve	Natural Area–County Forest Preserve	Sandwich	DeKalb	Illinois
Illinois Central Railroad Freight House	Historic Site–Historic Building	Mendota	LaSalle	Illinois
Apple Orchard Park	Park–City	Mendota	LaSalle	Illinois
Darius Miller Park	Park–City	Princeton	Bureau	Illinois
Bridge (Structure #006-9934) over TR 170B carrying BN RR	Historic Site–Historic Bridge	Wyanet	Bureau	Illinois
Hennepin Canal Historic District	Historic Site–Historic District	Wyanet	Bureau and Henry	Illinois
Hennepin Canal Parkway State Park	Park–State	Wyanet	Bureau	Illinois
G E Holting Park	Park–City	Geneseo	Henry	Illinois
Bridge (Structure #037-3016) over Hennepin Canal	Historic Site–Historic Bridge	Rural Henry County	Henry	Illinois
Municipal Water Tank	Historic Site–Historic Structure	Colona	Henry	Illinois
Gaillaert Field	Park–City	Colona	Henry	Illinois
Carbon Cliff Park	Park–City	Carbon Cliff	Rock Island	Illinois
Deere Building	Historic Site–Historic Building	East Moline	Rock Island	Illinois

Name	Type	City	County	State
LeClaire Hotel	Historic Site–Historic Building	Moline	Rock Island	Illinois
Moline Downtown Commercial Historic District	Historic Site–Historic District	Moline	Rock Island	Illinois
Washington Square Apartments	Historic Site–Historic Building	Moline	Rock Island	Illinois
Rock Island Lines Passenger Station	Historic Site–Historic Building	Rock Island	Rock Island	Illinois
Rock Island Arsenal	Historic Site–Historic District	Rock Island	Rock Island	Illinois
Lock and Dam No. 15 Historic District	Historic Site–Historic District	Rock Island	Rock Island	Illinois
Ben Butterworth Parkway	Park–City	Moline	Rock Island	Illinois
Riverside Park	Park–City	Moline	Rock Island	Illinois
City Market Building	Historic Site–Historic Building	Davenport	Scott	Iowa
Automotive Garage	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Hartmann, Friedrich, House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Bahls, John, House	Historic Site–Historic Building	Davenport	Scott	Iowa
Hahn, Wulff, House	Historic Site–Historic Building	Davenport	Scott	Iowa
Ruch, John, House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa

Name	Type	City	County	State
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Schriebel, George, House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Otten, John G., House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Randolph, Joseph, House	Historic Site–Historic Building	Davenport	Scott	Iowa
Ruhl, Lucas, House	Historic Site–Historic Building	Davenport	Scott	Iowa
Heinz, Bonaventura, House (second)	Historic Site–Historic Building	Davenport	Scott	Iowa
Littig Brothers/Mengel and Klindt/Eagle Brewery	Historic Site–Historic Building	Davenport	Scott	Iowa
Worley, Philip, House	Historic Site–Historic Building	Davenport	Scott	Iowa
Wupperman Block/I.O.O.F. Hall	Historic Site–Historic Building	Davenport	Scott	Iowa
Old City Hall	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Commercial Building	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--Parish School	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--Rectory	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--Convent	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--St. Mary's Church	Historic Site–Historic Building	Davenport	Scott	Iowa

Name	Type	City	County	State
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
1906 Gaines Street, Duplex	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
American Telephone and Telegraph Company Building	Historic Site–Historic Building	Davenport	Scott	Iowa
Chicago, Rock Island, and Pacific Railroad Elevated Track	Historic Site–Historic Structure	Davenport	Scott	Iowa
Scott County Jail	Historic Site–Historic Building	Davenport	Scott	Iowa
Apartment Building	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Apartment Building	Historic Site–Historic Building	Davenport	Scott	Iowa
Walker, Edna, House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Mueller, Christian, House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Kurmeier, Henry, House	Historic Site–Historic Building	Davenport	Scott	Iowa
Mattrey, Dr. Henry, Stables	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa

Name	Type	City	County	State
Petersen, Lavinius W., House	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Anthony's Catholic Church Complex	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Anthony's Catholic Church Complex: St. Anthony's Rectory	Historic Site–Historic Building	Davenport	Scott	Iowa
Davenport Paper Box Company	Historic Site–Historic Building	Davenport	Scott	Iowa
Ewert and Richter Express and Storage Company (West Building)	Historic Site–Historic Building	Davenport	Scott	Iowa
Ewert and Richter Express and Storage Company (East Building)	Historic Site–Historic Building	Davenport	Scott	Iowa
Neu, Vincent J., Auto Dealership	Historic Site–Historic Building	Davenport	Scott	Iowa
Halligan Coffee Company	Historic Site–Historic Building	Davenport	Scott	Iowa
Chicago, Rock Island, and Pacific Railroad Elevated Rail Bed	Historic Site–Historic Structure	Davenport	Scott	Iowa
Matthews Building	Historic Site–Historic Building	Davenport	Scott	Iowa
National Biscuit Company	Historic Site–Historic Building	Davenport	Scott	Iowa
Smith Brothers and Burdick Company	Historic Site–Historic Building	Davenport	Scott	Iowa
Hamburg Historic District	Historic Site–Historic District	Davenport	Scott	Iowa
Crescent Warehouse Historic District	Historic Site–Historic District	Davenport	Scott	Iowa
St. Anthony's Catholic Church Complex	Historic Site–Historic District	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex	Historic Site–Historic District	Davenport	Scott	Iowa
Mississippi River	Recreation Area–River Access	Davenport	Scott	Iowa
Bechtel Park	Park–City	Davenport	Scott	Iowa
Duck Creek Parkway	Recreation Area–Trail	Davenport	Scott	Iowa
Fejervary Park	Park–City	Davenport	Scott	Iowa
Lafayette Park	Park–City	Davenport	Scott	Iowa
Riverfront Trail	Recreation Area–Trail	Davenport	Scott	Iowa
Norton Nature Area	Park–County	Durant	Scott	Iowa
Chicago, Rock Island, & Pacific Railroad - Wilton Depot	Historic Site–Historic Building	Wilton	Muscatine	Iowa
Evans, P.R./Schafer Grain Company Elevator and Office	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Auto Garage	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Tire/Liquor Store	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Masonic Temple	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Masonic Temple/Schooley Furniture Store	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
West Liberty Fire Station and City Hall	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Bakery Shop	Historic Site–Historic Building	West Liberty	Muscatine	Iowa

Name	Type	City	County	State
Agricultural Implement Store	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Burkhart, G., Building	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Jewelry Store	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Chesebrough Building	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
Iowa State Bank and Trust Company	Historic Site–Historic Building	West Liberty	Muscatine	Iowa
West Liberty Commercial District	Historic Site–Historic District	West Liberty	Muscatine	Iowa
Jack Shuger Memorial Park	Park–County	Moscow	Muscatine	Iowa
Downey Savings Bank	Historic Site–Historic Building	Downey	Cedar	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Prizler House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Powers, Jamie, House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Vogt House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Chicago, Rock Island, and Pacific Passenger Station	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Brookland Park	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Melrose Historic District	Historic Site–Historic District	Iowa City	Johnson	Iowa
South Summit Street District	Historic Site–Historic District	Iowa City	Johnson	Iowa
Ralston Creek	Natural Area–Greenbelt	Iowa City	Johnson	Iowa
Brookland Park	Park–City	Iowa City	Johnson	Iowa
Clear Creek Greenbelt	Natural Area–City Preserve	Iowa City	Johnson	Iowa
Clear Creek Trail	Recreation Area–Trail	Iowa City	Johnson	Iowa
Finkbine Golf Course	Recreation Area–Golf Course–Public	Iowa City	Johnson	Iowa
Finkbine Prairie (West)	Natural Area–Research Area	Iowa City	Johnson	Iowa

Name	Type	City	County	State
Finkbine Woodlands	Natural Area–Open Space	Iowa City	Johnson	Iowa
Hawkeye Softball Complex/Cretzmeyer Track	Recreation Area–Athletic Fields	Iowa City	Johnson	Iowa
Iowa River Corridor Trail	Recreation Area–Trail	Iowa City	Johnson	Iowa
Kinnick Stadium	Recreation Area–Stadium	Iowa City	Johnson	Iowa
Longfellow Nature Trail	Park–City	Iowa City	Johnson	Iowa
Lower Finkbine Trail	Recreation Area–Trail	Iowa City	Johnson	Iowa
Mercer Park	Park–City	Iowa City	Johnson	Iowa
Mercer Park Aquatic Center	Park–City	Iowa City	Johnson	Iowa
Oak Grove Park	Park–City	Iowa City	Johnson	Iowa
Outdoor Research Area	Natural Area–Research Area	Iowa City	Johnson	Iowa
Lions Park	Park–City	Iowa City	Johnson	Iowa
Iowa River	Recreation Area–River Access	Iowa City	Johnson	Iowa
Unnamed Trail Segment (12)	Recreation Area–Trail	Iowa City	Johnson	Iowa
1st Ave. to SE Corp. Limits Coralville	Recreation Area–Trail	Coralville	Johnson	Iowa
North Ridge Trail	Recreation Area–Trail	Coralville	Johnson	Iowa
Clear Creek Amana Middle School	Recreation Area–School	Tiffin	Johnson	Iowa
Clear Creek Area	Natural Area–Wildlife Management Area	Tiffin	Johnson	Iowa
East Tiffin Trail	Recreation Area–Trail	Tiffin	Johnson	Iowa
Tiffin City Park	Park–City	Tiffin	Johnson	Iowa
FW Kent Park	Park–County	Oxford	Johnson	Iowa
Pumphouse	Historic Site–Historic Building	Homestead	Iowa	Iowa
Implement Building	Historic Site–Historic Building	Homestead	Iowa	Iowa
Implement Storage Building	Historic Site–Historic Building	Homestead	Iowa	Iowa
Lumber Yard Office	Historic Site–Historic Building	Homestead	Iowa	Iowa
Wohnhaus	Historic Site–Historic Building	Homestead	Iowa	Iowa
Taglöhner Haus	Historic Site–Historic Building	Homestead	Iowa	Iowa
Wohnhaus and Küche	Historic Site–Historic Building	Homestead	Iowa	Iowa
Apotheke and Doctor's Office	Historic Site–Historic Building	Homestead	Iowa	Iowa
Wohnhaus	Historic Site–Historic Building	Homestead	Iowa	Iowa
Wohnhaus and Woodshed/Wash House	Historic Site–Historic Building	Homestead	Iowa	Iowa
Wohnhaus and Wash House	Historic Site–Historic Building	Homestead	Iowa	Iowa
Wohnhaus and Küche	Historic Site–Historic Building	Homestead	Iowa	Iowa
Homestead Store	Historic Site–Historic Building	Homestead	Iowa	Iowa
Amana Colonies	Historic Site–Historic District	East of Marengo	Iowa	Iowa
Marengo Memorial Park	Park–City	Marengo	Iowa	Iowa

Name	Type	City	County	State
Ingraham Park	Park–City	Ladora	Iowa	Iowa
Laura and Skinny Schlesselman Wildlife Area	Natural Area–Wildlife Management Area	Ladora	Iowa	Iowa
Brooklyn Hotel	Historic Site–Historic Building	Brooklyn	Poweshiek	Iowa
Chicago, Rock Island and Pacific Railroad–Grinnell Passenger Station	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Cass and Works Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Cass and Works Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Proctor Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Herald Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Herald Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Bowers and McDonald Office Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Seaman Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Commercial Building	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
McIntosh Grocery	Historic Site–Historic Building	Grinnell	Poweshiek	Iowa
Grinnell Historic Commercial District	Historic Site–Historic District	Grinnell	Poweshiek	Iowa
Grinnell Central Park	Park–City	Grinnell	Poweshiek	Iowa
Jaycee Park	Park–City	Grinnell	Poweshiek	Iowa
Jacob Krumm Nature Preserve	Natural Area–Wildlife Management Area	West of Grinnell	Jasper	Iowa
Kellogg RV Park	Park–City	Kellogg	Jasper	Iowa
Kellogg State Game	Natural Area–Wildlife Management Area	Kellogg	Jasper	Iowa
Rock Creek State Park, Reichelt Unit	Park–State	Kellogg	Jasper	Iowa
Arthur, Thomas House	Historic Site–Historic Building	Newton	Jasper	Iowa
Sunset Park	Park–City	Newton	Jasper	Iowa
Westwood Park Golf Course	Recreation Area–Golf Course–Public	Newton	Jasper	Iowa
Woodland Municipal Park	Park–City	Newton	Jasper	Iowa
Colfax WMA	Natural Area–Wildlife Management Area	Colfax	Jasper	Iowa
Mineral Spring Park	Park–City	Colfax	Jasper	Iowa
Schlosser Park	Park–City	Colfax	Jasper	Iowa
City Park	Park–City	Mitchellville	Jasper	Iowa
Altoona Campus	Recreation Area–Recreation Center	Altoona	Polk	Iowa
Eagle Ridge Park	Park–City	Altoona	Polk	Iowa
Greenway Trail	Recreation Area–Trail	Altoona	Polk	Iowa
Lions Park	Park–City	Altoona	Polk	Iowa
Prairie Heritage Trail	Recreation Area–Trail	Altoona	Polk	Iowa
Twin Creek Park	Park–City	Altoona	Polk	Iowa
Sunset Park	Park–City	Pleasant Hill	Polk	Iowa
Grocers Wholesale Company Warehouse	Historic Site–Historic Building	Des Moines	Polk	Iowa

Name	Type	City	County	State
Chicago, Rock Island & Pacific Railroad Bridge	Historic Site–Historic Bridge	Des Moines	Polk	Iowa
Municipal Court and Public Safety Building	Historic Site–Historic Building	Des Moines	Polk	Iowa
Des Moines Union Railway Company Bridge	Historic Site–Historic Bridge	Des Moines	Polk	Iowa
Linden Heights Historic District	Historic Site–Historic District	Des Moines	Polk	Iowa
Civic Center Historic District	Historic Site–Historic District	Des Moines	Polk	Iowa
Bill Riley Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Chesterfield Park	Park–City	Des Moines	Polk	Iowa
Denman's Woods Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Gay Lea Wilson Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
John Pat Dorrian Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Meredith Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Waterworks Park	Park–City	Des Moines	Polk	Iowa
Fuller Road to Levee Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Levee Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Raccoon River Park	Park–City	West Des Moines	Polk	Iowa
Raccoon River Park Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Railroad Avenue Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Walnut Woods State Park	Park–State	West Des Moines	Polk	Iowa
West Grand Avenue Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Two Rivers Access	Recreation Area–River Access	Van Meter	Dallas	Iowa
Van Meter Recreation Complex	Recreation Area–Athletic fields	Van Meter	Dallas	Iowa
Little Bridge Park	Park–City	De Soto	Dallas	Iowa
Karl and Grace Correll Wildlife Area	Natural Area–Wildlife Management Area	East of Adair	Guthrie	Iowa
Chicago, Rock Island and Pacific Railroad: Stuart Passenger Station	Historic Site–Historic Building	Stuart	Adair	Iowa
Lawbaugh City Park	Park–City	Stuart	Adair	Iowa
Adair Viaduct	Historic Site–Historic Bridge	Adair	Adair	Iowa
Jesse James Historical Park	Park–City	Adair	Adair	Iowa
Adair City Park	Park–City	Adair	Adair	Iowa
Lake Anita State Park	Park–State	Anita	Cass	Iowa
Wiota City Park	Park–City	Wiota	Cass	Iowa
Chicago, Rock Island, & Pacific Railroad Depot	Historic Site–Historic Building	Atlantic	Cass	Iowa
Pellet Wildlife Refuge	Natural Area–Wildlife Management Area	Atlantic	Cass	Iowa
Chicago, Rock Island & Pacific Railroad Passenger Depot	Historic Site–Historic Building	Council Bluffs	Pottawattamie	Iowa
Bahnsen Park	Park–City	Council Bluffs	Pottawattamie	Iowa
Broadway Park	Park–City	Council Bluffs	Pottawattamie	Iowa
Council Bluffs Riverfront	Recreation Area–State Recreation Area	Council Bluffs	Pottawattamie	Iowa
Indian Creek Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Iowa River Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Avenue G Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Valley View	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Westwood Park	Park–City	Council Bluffs	Pottawattamie	Iowa

Name	Type	City	County	State
Southside Trail Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Burlington Station	Historic Site–Historic Building	Omaha	Douglas	Nebraska
Eggerss O'Flyng Building	Historic Site–Historic Building	Omaha	Douglas	Nebraska
10th Street Viaduct	Historic Site–Historic Bridge	Omaha	Douglas	Nebraska
Union Passenger Terminal	Historic Site–Historic Building	Omaha	Douglas	Nebraska
Omaha Rail and Commerce Historic District	Historic Site–Historic District	Omaha	Douglas	Nebraska
Bob Kerrey Pedestrian Bridge	Recreation Area–Trail	Omaha	Douglas	Nebraska
Riverfront	Recreation Area–Trail	Omaha	Douglas	Nebraska
Qwest Center Connector	Recreation Area–Trail	Omaha	Douglas	Nebraska
Heartland of America Park	Recreation Area–Trail	Omaha	Douglas	Nebraska
CenturyLink Center	Recreation Area–Stadium	Omaha	Douglas	Nebraska
Freedom Park	Park–City	Omaha	Douglas	Nebraska
Heartland of America Park	Park–City	Omaha	Douglas	Nebraska
Lewis & Clark Landing	Park–City	Omaha	Douglas	Nebraska

Sources: National Park Service, Illinois Department of Natural Resources (DNR), Iowa DNR, City of Omaha, Forest Preserve District of Cook County Forest Preserve District of DuPage County, Fox Valley Park District, Naperville Park District, City of Aurora, Polk County, Illinois State Historic Preservation Office (SHPO), Iowa SHPO, Nebraska SHPO, ESRI StreetMap, Google Earth Pro, Bing.

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Table 2. Public Parks, Public Recreation Areas, Public Natural Areas, and Historic Sites within the Potential Impact Area

Name	Type	City	County	State
Union Station—Chicago	Historic Site–Historic Building	Chicago	Cook	Illinois
United States Post Office—Chicago	Historic Site–Historic Building	Chicago	Cook	Illinois
Shedd Park	Park–City	Chicago	Cook	Illinois
Water Tower, Well House and Pump House - Riverside Landscape Architecture District	Historic Site–Historic Building	Riverside	Cook	Illinois
Riverside Landscape Architecture District	Historic Site–Historic District	Riverside	Cook	Illinois
Zoo Woods Forest Preserve	Natural Area–County Forest Preserve	Riverside	Cook	Illinois
Berwyn Suburban Station	Historic Site–Historic Building	Berwyn	Cook	Illinois
Kiwanis Park	Park–City	Brookfield	Cook	Illinois
Stone Avenue Station	Historic Site–Historic Building	La Grange	Cook	Illinois
Shawmut Park	Park–City	La Grange	Cook	Illinois
Spring Rock Park	Park–City	Western Springs	Cook	Illinois
Highland Park	Park–City	Hinsdale	Cook	Illinois
Pierce Park	Park–City	Hinsdale	Cook	Illinois
Veeck Park	Park–City	Hinsdale	Cook	Illinois
Downtown Hinsdale Historic District	Historic Site–Historic District	Hinsdale	DuPage	Illinois
Stough Park	Park–City	Hinsdale	DuPage	Illinois
Community Park	Park–City	Clarendon Hills	DuPage	Illinois
Blackhawk Park	Park–City	Clarendon Hills	DuPage	Illinois
Blue Lake Park	Park–City	Clarendon Hills	DuPage	Illinois
Lions Park	Park–City	Clarendon Hills	DuPage	Illinois
Lisle Community Park	Park–City	Lisle	DuPage	Illinois
Naperville Historic District	Historic Site–Historic District	Naperville	DuPage	Illinois
Burlington Park	Park–City	Naperville	DuPage	Illinois
Burlington Square Park	Park–City	Naperville	DuPage	Illinois
Heritage Woods Preservation Area	Park–City	Naperville	DuPage	Illinois
Old Plank Park	Park–City	Naperville	DuPage	Illinois
Naperville Country Club	Recreation Area–Golf Course–Public	Naperville	DuPage	Illinois
Sutton Lake Park	Park–City	Aurora	DuPage	Illinois
Copley Playground	Park–City	Aurora	Kane	Illinois
Solfisburg Park	Park–City	Aurora	Kane	Illinois
Blackberry Oaks Golf Course	Recreation Area–Golf Course–Public	Bristol	Kendall	Illinois
Chicago, Burlington and Quincy Railroad Depot	Historic Site–Historic Building	Plano	Kendall	Illinois
Klatt Park	Park–City	Plano	Kendall	Illinois
Von KleinSmid Mansion	Historic Site–Historic Building	Sandwich	DeKalb	Illinois
Illinois Central Railroad Freight House	Historic Site–Historic Building	Mendota	LaSalle	Illinois
Bridge (Structure #006-9934) over TR 170B carrying BN RR	Historic Site–Historic Bridge	Wyanet	Bureau	Illinois

Name	Type	City	County	State
Hennepin Canal Historic District	Historic Site–Historic District	Wyanet	Bureau and Henry	Illinois
Hennepin Canal Parkway State Park	Park–State	Wyanet	Bureau	Illinois
G E Holting Park	Park–City	Geneseo	Henry	Illinois
Moline Downtown Commercial Historic District	Historic Site–Historic District	Moline	Rock Island	Illinois
Rock Island Lines Passenger Station	Historic Site–Historic Building	Rock Island	Rock Island	Illinois
Rock Island Arsenal	Historic Site–Historic District	Rock Island	Rock Island	Illinois
Lock and Dam No. 15 Historic District	Historic Site–Historic District	Rock Island	Rock Island	Illinois
Littig Brothers/Mengel and Klindt/Eagle Brewery	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--Rectory	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--Convent	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex--St. Mary's Church	Historic Site–Historic Building	Davenport	Scott	Iowa
St. Mary's Roman Catholic Church Complex	Historic Site–Historic District	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
House	Historic Site–Historic Building	Davenport	Scott	Iowa
Davenport Paper Box Company	Historic Site–Historic Building	Davenport	Scott	Iowa
Ewert and Richter Express and Storage Company (West Building)	Historic Site–Historic Building	Davenport	Scott	Iowa
Ewert and Richter Express and Storage Company (East Building)	Historic Site–Historic Building	Davenport	Scott	Iowa
Neu, Vincent J., Auto Dealership	Historic Site–Historic Building	Davenport	Scott	Iowa
Chicago, Rock Island, and Pacific Railroad Elevated Rail Bed	Historic Site–Historic Structure	Davenport	Scott	Iowa
Matthews Building	Historic Site–Historic Building	Davenport	Scott	Iowa
National Biscuit Company	Historic Site–Historic Building	Davenport	Scott	Iowa
Hamburg Historic District	Historic Site–Historic District	Davenport	Scott	Iowa
Crescent Warehouse Historic District	Historic Site–Historic District	Davenport	Scott	Iowa
St. Anthony's Catholic Church Complex	Historic Site–Historic District	Davenport	Scott	Iowa
Mississippi River	Recreation Area–River Access	Davenport	Scott	Iowa
Chicago, Rock Island, & Pacific Railroad - Wilton Depot	Historic Site–Historic Building	Wilton	Muscatine	Iowa
West Liberty Commercial District	Historic Site–Historic District	West Liberty	Muscatine	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa

Name	Type	City	County	State
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Prizler House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
House	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Chicago, Rock Island, and Pacific Passenger Station	Historic Site–Historic Building	Iowa City	Johnson	Iowa
Melrose Historic District	Historic Site–Historic District	Iowa City	Johnson	Iowa
South Summit Street District	Historic Site–Historic District	Iowa City	Johnson	Iowa
Clear Creek Greenbelt	Natural Area–City Preserve	Iowa City	Johnson	Iowa
Finkbine Golf Course	Recreation Area–Golf Course–Public	Iowa City	Johnson	Iowa
Finkbine Prairie (West)	Natural Area–Research Area	Iowa City	Johnson	Iowa
Kinnick Stadium	Recreation Area–Stadium	Iowa City	Johnson	Iowa
Longfellow Nature Trail	Park–City	Iowa City	Johnson	Iowa
Oak Grove Park	Park–City	Iowa City	Johnson	Iowa
Outdoor Research Area	Natural Area–Research Area	Iowa City	Johnson	Iowa
Lions Park	Park–City	Iowa City	Johnson	Iowa
Iowa River	Recreation Area–River Access	Iowa City	Johnson	Iowa
Tiffin City Park	Park–City	Tiffin	Johnson	Iowa
Ingraham Park	Park–City	Ladora	Iowa	Iowa
Amana Colonies	Historic Site–Historic District	East of Marengo	Iowa	Iowa
Chicago, Rock Island and Pacific Railroad-Grinnell Passenger Station	Historic Site – Historic Building	Grinnell	Poweshiek	Iowa
Grinnell Historic Commercial District	Historic Site–Historic District	Grinnell	Poweshiek	Iowa
Jaycee Park	Park–City	Grinnell	Poweshiek	Iowa
Jacob Krumm Nature Preserve	Natural Area–Wildlife Management Area	West of Grinnell	Jasper	Iowa
Arthur, Thomas House	Historic Site–Historic Building	Newton	Jasper	Iowa
Sunset Park	Park–City	Newton	Jasper	Iowa
Woodland Municipal Park	Park–City	Newton	Jasper	Iowa
Colfax Wildlife Management Area	Natural Area–Wildlife Management Area	Colfax	Jasper	Iowa
City Park	Park–City	Mitchellville	Jasper	Iowa
Altoona Campus	Recreation Area–Recreation Center	Altoona	Polk	Iowa
Lions Park	Park–City	Altoona	Polk	Iowa
Prairie Heritage Trail	Recreation Area–Trail	Altoona	Polk	Iowa
Twin Creek Park	Park–City	Altoona	Polk	Iowa
Grocers Wholesale Company Warehouse	Historic Site–Historic Building	Des Moines	Polk	Iowa
Municipal Court and Public Safety Building	Historic Site–Historic Building	Des Moines	Polk	Iowa
Linden Heights Historic District	Historic Site–Historic District	Des Moines	Polk	Iowa

Name	Type	City	County	State
Civic Center Historic District	Historic Site–Historic District	Des Moines	Polk	Iowa
Bill Riley Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Chesterfield Park	Park–City	Des Moines	Polk	Iowa
Gay Lea Wilson Trail	Recreation Area–Trail	Des Moines	Polk	Iowa
Waterworks Park	Park–City	Des Moines	Polk	Iowa
Levee Trail	Recreation Area–Trail	West Des Moines	Polk	Iowa
Raccoon River Park	Park–City	West Des Moines	Polk	Iowa
Walnut Woods State Park	Park–State	West Des Moines	Polk	Iowa
Two Rivers Access	Recreation Area–River Access	Van Meter	Dallas	Iowa
Van Meter Recreation Complex	Recreation Area–Athletic fields	Van Meter	Dallas	Iowa
Little Bridge Park	Park–City	De Soto	Dallas	Iowa
Chicago, Rock Island and Pacific Railroad: Stuart Passenger Station	Historic Site–Historic Building	Stuart	Adair	Iowa
Adair Viaduct	Historic Site–Historic Bridge	Adair	Adair	Iowa
Jesse James Historical Park	Park–City	Adair	Adair	Iowa
Adair City Park	Park–City	Adair	Adair	Iowa
Karl and Grace Correll Wildlife Area	Natural Area–Wildlife Management Area	East of Adair	Guthrie	Iowa
Chicago, Rock Island, & Pacific Railroad Depot	Historic Site–Historic Building	Atlantic	Cass	Iowa
Pellet Wildlife Refuge	Natural Area–Wildlife Management Area	Atlantic	Cass	Iowa
Chicago, Rock Island & Pacific Railroad Passenger Depot	Historic Site – Historic Building	Council Bluffs	Pottawattamie	Iowa
Bahnsen Park	Park–City	Council Bluffs	Pottawattamie	Iowa
Council Bluffs Riverfront	Recreation Area–State Recreation Area	Council Bluffs	Pottawattamie	Iowa
Iowa River Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Valley View	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Southside Trail Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Avenue G Bike Trail	Recreation Area–Trail	Council Bluffs	Pottawattamie	Iowa
Burlington Station	Historic Site–Historic Building	Omaha	Douglas	Nebraska
10th Street Viaduct	Historic Site–Historic Bridge	Omaha	Douglas	Nebraska
Union Passenger Terminal	Historic Site–Historic Building	Omaha	Douglas	Nebraska
Omaha Rail and Commerce Historic District	Historic Site–Historic District	Omaha	Douglas	Nebraska
Freedom Park	Park–City	Omaha	Douglas	Nebraska
Lewis & Clark Landing	Park–City	Omaha	Douglas	Nebraska
Century Link Center Connector	Recreation Area–Trail	Omaha	Douglas	Nebraska
Riverfront	Recreation Area–Trail	Omaha	Douglas	Nebraska
Heartland of America Park	Recreation Area–Trail	Omaha	Douglas	Nebraska

Sources: National Park Service, Illinois Department of Natural Resources (DNR), Iowa DNR, City of Omaha, Forest Preserve District of Cook County Forest Preserve District of DuPage County, Fox Valley Park District, Naperville Park District, City of Aurora, Polk County, Illinois State Historic Preservation Office (SHPO), Iowa SHPO, Nebraska SHPO, ESRI StreetMap, Google Earth Pro, Bing.

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Table 3. Section 6(f) Properties within the Potential Impact Area

Name	Type	City	County	State
Cook County Forest Preserve District	Natural Area–County Forest Preserve		Cook	Illinois
Community Park	Park–City	Clarendon Hills	DuPage	Illinois
Naperville Park District	Park District	Naperville	DuPage	Illinois
Tiffin City Park	Park–City	Tiffin	Johnson	Iowa
Altoona Parks Department	Parks Department	Altoona	Polk	Iowa
City of West Des Moines Parks and Recreation	Parks Department	West Des Moines	Polk	Iowa
Walnut Woods State Park	Park–State	West Des Moines	Polk	Iowa
City of Omaha Parks and Recreation	Parks Department	Omaha	Douglas	Nebraska

Sources: National Park Service, Land and Water Conservation Fund Database.

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APPENDIX K

WATERWAYS AND WATER BODIES

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Table 1. Major Perennial Waterways

State	River/Stream Name	County
Illinois	South Branch Chicago River (Chicago Sanitary & Ship Canal)	Cook
Illinois	Des Plaines River	Cook
Illinois	Salt Creek	Cook
Illinois	Saint Joseph Creek	DuPage
Illinois	East Branch Du Page River	DuPage
Illinois	West Branch Du Page River	DuPage
Illinois	Fox River [a]	Kane
Illinois	Blackberry Creek	Kendall
Illinois	Rob Roy Creek	Kendall
Illinois	Big Rock Creek	Kendall
Illinois	Little Rock Creek	Kendall
Illinois	Somonauk Creek	DeKalb
Illinois	Little Indian Creek	La Salle
Illinois	(Big) Indian Creek [a]	La Salle
Illinois	Sutphens Run	La Salle
Illinois	Little Vermilion River	La Salle
Illinois	Mendota Creek	La Salle
Illinois	Brush Creek	Bureau
Illinois	Epperson Run	Bureau
Illinois	Big Bureau Creek [a]	Bureau
Illinois	West Bureau Creek	Bureau
Illinois	Hennepin Canal	Bureau & Henry
Illinois	Pond Creek	Bureau
Illinois	Coal Creek	Bureau
Illinois	Lawson Creek	Bureau
Illinois	Mud Creek	Henry
Illinois	Spring Creek	Henry
Illinois	Geneseo Creek	Henry
Illinois	Green River	Henry
Illinois	Rock River	Rock Island & Henry
Illinois & Iowa	Mississippi River	Rock Island & Scott
Iowa	Duck Creek	Scott
Iowa	Mud Creek	Muscatine & Cedar
Iowa	Big Elkhorn Creek	Cedar
Iowa	Little Elkhorn Creek	Muscatine
Iowa	Sugar Creek	Muscatine
Iowa	Cedar River [a b]	Muscatine
Iowa	Wapsinonoc Creek	Muscatine & Cedar
Iowa	West Branch Wapsinonoc Creek	Muscatine & Cedar
Iowa	Ralston Creek	Johnson
Iowa	Iowa River [b]	Johnson & Iowa
Iowa	Clear Creek	Johnson
Iowa	Rhine Creek	Johnson
Iowa	Big Bear Creek	Iowa & Poweshiek
Iowa	Little Bear Creek	Poweshiek
Iowa	Sugar Creek	Jasper
Iowa	Turner Creek	Jasper
Iowa	Rock Creek	Jasper

State	River/Stream Name	County
Iowa	Coon Creek	Jasper
Iowa	North Skunk River	Jasper
Iowa	Cherry Creek	Jasper
Iowa	South Skunk River	Jasper
Iowa	Severs Creek	Jasper
Iowa	Squaw Creek	Jasper
Iowa	Mud Creek	Polk
Iowa	Fourmile Creek	Polk
Iowa	Des Moines River [b]	Polk
Iowa	Raccoon River [b]	Polk
Iowa	Walnut Creek	Polk
Iowa	Sugar Creek	Dallas
Iowa	Johnson Creek	Dallas
Iowa	South Raccoon River	Dallas
Iowa	Bulger Creek	Dallas & Madison
Iowa	Middle River	Guthrie
Iowa	South Fork Middle River	Guthrie
Iowa	Turkey Creek	Adair & Cass
Iowa	East Nishnabotna River	Cass
Iowa	Buck Creek	Cass
Iowa	Indian Creek	Cass
Iowa	Graybill Creek	Pottawattamie
Iowa	West Nishnabotna River	Pottawattamie
Iowa	Silver Creek	Pottawattamie
Iowa	Middle Silver Creek	Pottawattamie
Iowa	Keg Creek	Pottawattamie
Iowa	Mosquito Creek	Pottawattamie
Iowa & Nebraska	Missouri River	Pottawattamie & Douglas
Nebraska	Little Papillion Creek	Douglas
Nebraska	Big Papillion Creek	Douglas
Nebraska	Hell Creek	Douglas

Source: Environmental Systems Research Institute (ESRI) hydrography data and USGS National Hydrography Dataset (NHD)

Notes:

[a] *Listed on the "Nationwide Rivers Inventory" by the National Park Service.*

[b] *Designated as a "Meandered Sovereign River" by the Iowa DNR.*

APPENDIX L

WATER QUALITY

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Table 1. 303(d) List of Water Quality Limited Waters within Study Area

State	River/Stream Name	County
Illinois	South Branch Chicago River (Chicago Sanitary & Ship Canal) [c]	Cook
Illinois	Des Plaines River	Cook
Illinois	Salt Creek	Cook
Illinois	Flag Creek	Cook
Illinois	Saint Joseph Creek	DuPage
Illinois	East Branch Du Page River	DuPage
Illinois	West Branch Du Page River [c]	DuPage
Illinois	Fox River [a]	Kane
Illinois	Blackberry Creek	Kendall
Illinois	East Bureau Creek	Bureau
Illinois	Mud Creek	Henry
Illinois	Spring Creek	Henry
Illinois	Geneseo Creek	Henry
Illinois	Green River	Henry
Illinois	Rock River	Rock Island & Henry
Illinois & Iowa	Mississippi River	Rock Island & Scott
Iowa	Duck Creek	Scott
Iowa	Unnamed tributary of Mud Creek	Cedar
Iowa	Unnamed tributary of Iowa River	Johnson
Iowa	Ralston Creek	Johnson
Iowa	Iowa River [b]	Johnson
Iowa	Little Bear Creek	Poweshiek
Iowa	South Skunk River [c]	Jasper
Iowa	South Raccoon River [c]	Dallas
Iowa	Silver Creek	Pottawattamie
Iowa	Keg Creek	Pottawattamie
Iowa	Mosquito Creek	Pottawattamie
Iowa & Nebraska	Missouri River	Pottawattamie & Douglas

Source: U.S. Environmental Protection Agency. 2012. Watershed Assessment, Tracking & Environmental Results. Reach Address Database (RAD) Download. [For list of 303(d) Impaired Waters]. Updated March 2012. Retrieved February 6, 2012. http://epamap32.epa.gov/radims/

Notes:

[a] *Listed on the "Nationwide Rivers Inventory" by the National Park Service.*

[b] *Designated as a "Meandered Sovereign River" by the Iowa DNR.*

[c] *Stream that is not crossed or directly impacted*

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APPENDIX M

NATURAL HABITATS AND WILDLIFE

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Table 1. Natural Areas within Study Area

Name	Habitat Type[d]	State	County
Zoo Woods Forest Preserve	riparian woodland	Illinois	Cook
Belmont Prairie Nature Preserve (INAI #0526)[a] (INPC #NP075)[c]	prairie	Illinois	Du Page
Maple Grove Forest Preserve (INAI #0527)[a, b]	upland woods	Illinois	Du Page
Hitchcock Woods Forest Preserve	riparian woodland	Illinois	Du Page
Heritage Woods Forest Preserve	upland woods	Illinois	Du Page
Burlington Park Forest Preserve	upland woods	Illinois	Du Page
Sannauk Forest Preserve	riparian & upland woods	Illinois	DeKalb
Hennepin Canal State Park	riparian woodland	Illinois	Bureau/Henry
Edford Railroad Prairie (INAI #0574)[a]	dry-mesic sand prairie	Illinois	Henry
Green River East Railroad Prairie (INAI #0575)[a]	dry-mesic sand prairie	Illinois	Henry
Green River West Railroad Prairie (INAI #0576)[a]	dry-mesic sand prarie & wet-mesic sand prairie	Illinois	Henry
Mississippi River - Moline (INAI #1295) [b] (Potential Bald Eagle habitat)	riverine riparian corridor	Illinois	Rock Island
Norton Nature Area	riparian woodland, savanna	Iowa	Cedar
DNR forest stand (1 site)	riparian woodland	Iowa	Cedar
Longfellow Nature Trail	riparian woodland	Iowa	Johnson
Outdoor Research Area	riparian woodland, grassland	Iowa	Johnson
Outdoor Research Area	riparian shrubland	Iowa	Johnson
Outdoor Research Area	riparian woodland	Iowa	Johnson
Finkbine Woodlands	upland woods	Iowa	Johnson
Finkbine Prairie (West)	prairie	Iowa	Johnson
Finkbine Prairie II	prairie	Iowa	Johnson
Finkbine Prairie III	prairie	Iowa	Johnson
Finkbine Prairie IV	prairie	Iowa	Johnson
Clear Creek Greenbelt	savanna	Iowa	Johnson
Clear Creek Greenbelt	riparian woodland, grassland	Iowa	Johnson
Clear Creek Greenbelt	riparian woodland, grassland	Iowa	Johnson
DNR forest stands (9 sites)	upland woods	Iowa	Johnson
DNR forest stands (5 sites)	riparian woodland	Iowa	Johnson
Laura and Skinny Schlesselman Wildlife Area	grassland	Iowa	Iowa
Port Louisa National Wildlife Refuge	riparian woodland, savanna, grassland	Iowa	Iowa
DNR forest stand (1 site)	riparian woodland	Iowa	Iowa
Jacob Krumm Nature Preserve	upland woods, grassland	Iowa	Jasper
Rock Creek State Park	upland woods, grassland	Iowa	Jasper
Colfax Wildlife Management Area	grassland	Iowa	Jasper
Walnut Woods State Park	riparian woodland	Iowa	Polk
DNR forest stands (2 sites)	riparian woodland	Iowa	Polk
DNR forest stands (4 sites)	riparian woodland	Iowa	Dallas
Two Rivers Access Wildlife Management Area	riparian woodland	Iowa	Dallas
DNR forest stand (1 site)	upland woods	Iowa	Madison
Karl and Grace Correll Wildlife Area	grassland	Iowa	Guthrie
Pellet Wildlife Refuge	riparian woodland	Iowa	Cass
DNR forest stand (1 site)	upland woods	Iowa	Cass
Council Bluffs Riverfront	riparian woodland	Iowa	Pottawattamie

Name	Habitat Type[d]	State	County
Missouri River	riverine	Iowa/ Nebraska	Pottawattamie/ Douglas

Source: Illinios DNR Natural Heritage Database;
Iowa DNR Data (natural areas)
Nebraska GPC Nebraska Heritage Program

Notes:

[a] *Illinois Natural Areas Inventory (INAI), Category I*

[b] *Illinois Natural Areas Inventory (INAI), Category II*

[c] *Illinois Natural Areas Inventory (INAI), Category III*

[d] *The Habitat Type description denotes the type of habitat located within the Study Area and not necessarily the type of habitat within the entire property of the natural area.*

Table 2. Natural Areas Impacted

Name	Habitat Type[d]	State	County
Zoo Woods Forest Preserve	riparian woodland	Illinois	Cook
Hennepin Canal State Park	riparian woodland	Illinois	Bureau/Henry
Edford Railroad Prairie (INAI #0574)[a]	dry-mesic sand prarie	Illinois	Henry
Green River East Railroad Prairie (INAI #0575)[a]	dry-mesic sand prarie	Illinois	Henry
Green River West Railroad Prairie (INAI #0576)[a]	dry-mesic sand prarie & wet-mesic sand prairie	Illinois	Henry
Mississippi River - Moline (INAI #1295) [b] (Potential Bald Eagle habitat)	riverine riparian corridor	Illinois	Rock Island
Norton Nature Area	riparian woodland, savanna	Iowa	Cedar
Longfellow Nature Trail	riparian woodland	Iowa	Johnson
Outdoor Research Area	riparian woodland, grassland	Iowa	Johnson
Outdoor Research Area	riparian shrubland	Iowa	Johnson
Finkbine Woodlands	upland woods	Iowa	Johnson
Finkbine Prairie (West)	prairie	Iowa	Johnson
Finkbine Prairie II	prairie	Iowa	Johnson
Finkbine Prairie III	prairie	Iowa	Johnson
Clear Creek Greenbelt	riparian woodland, grassland	Iowa	Johnson
Clear Creek Greenbelt	riparian woodland, grassland	Iowa	Johnson
DNR forest stands (3 sites)	upland woods	Iowa	Johnson
DNR forest stands (3 sites)	riparian woodland	Iowa	Johnson
Laura and Skinny Schlesselman Wildlife Area	grassland	Iowa	Iowa
Mark Twain National Wildlife Refuge Complex	riparian woodland, savanna, grassland	Iowa	Iowa
Jacob Krumm Nature Preserve	upland woods, grassland	Iowa	Jasper
Rock Creek State Park	upland woods, grassland	Iowa	Jasper
Colfax Wildlife Management Area	grassland	Iowa	Jasper
Walnut Woods State Park	riparian woodland	Iowa	Polk
DNR forest stands (1 site)	riparian woodland	Iowa	Polk
DNR forest stands (3 sites)	riparian woodland	Iowa	Dallas
Two Rivers Access Wildlife Management Area	riparian woodland	Iowa	Dallas
DNR forest stand (1 site)	upland woods	Iowa	Madison
Karl and Grace Correll Wildlife Area	grassland	Iowa	Guthrie
Pellet Wildlife Refuge	riparian woodland	Iowa	Cass
DNR forest stand (1 site)	upland woods	Iowa	Cass
Council Bluffs Riverfront (2 sites)	riparian woodland	Iowa	Pottawattamie
Missouri River	riverine	Iowa/ Nebraska	Pottawattamie/ Douglas

Source: Illinios DNR Natural Heritage Database;
Iowa DNR Data (natural areas)
Nebraska GPC Nebraska Heritage Program

Notes:

[a] *Illinois Natural Areas Inventory (INAI), Category I*

[b] *Illinois Natural Areas Inventory (INAI), Category II*

[c] *Illinois Natural Areas Inventory (INAI), Category III*

[d] *The Habitat Type description denotes the type of habitat located within the Study Area and not necessarily the type of habitat within the entire property of the natural area.*

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APPENDIX N

THREATENED AND ENDANGERED SPECIES

Table 1. Number of State-Listed Threatened and Endangered Species (by County)

County	State	Endangered	Threatened
Cook	Illinois	69	43
DuPage	Illinois	36	24
Kane	Illinois	27	26
Kendall	Illinois	11	8
DeKalb	Illinois	5	5
LaSalle	Illinois	19	11
Bureau	Illinois	8	7
Henry	Illinois	8	6
Rock Island	Illinois	12	11
Scott	Iowa	13	8
Muscatine	Iowa	35	34
Cedar	Iowa	7	14
Johnson	Iowa	16	16
Iowa	Iowa	4	8
Poweshiek	Iowa	5	4
Jasper	Iowa	2	9
Polk	Iowa	7	9
Dallas	Iowa	1	6
Madison	Iowa	4	6
Guthrie	Iowa	8	7
Adair	Iowa	4	3
Cass	Iowa	0	2
Pottawattamie	Iowa	7	6
Douglas	Nebraska	3	4

Source: Illinois – http://www.dnr.illinois.gov/ESPB/Documents/ETListCounty2011.pdf (September 12, 2011)
Iowa – https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx (April 2012)
Nebraska – http://outdoornebraska.ne.gov/wildlife/programs/nongame/pdf/TandESpecies.pdf (September 2011)

Illinois Threatened & Endangered Species by County
Source: Illinois DNR – Natural Heritage Database (September 12, 2011)

State Status:
LE - listed as endangered
LT - listed as threatened

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Bureau				
Boltonia decurrens	Decurrent False Aster	LT	2	2006-09-26
Dendroica cerulea	Cerulean Warbler	LT	1	2008-05-05
Emydoidea blandingii	Blanding's Turtle	LE	2	2003-05-18
Filipendula rubra	Queen-of-the-prairie	LE	1	2011-08-02
Fundulus dispar	Starhead topminnow	LT	2	2007-06-27
Helianthus giganteus	Tall Sunflower	LE	1	2010-07-05
Heterodon nasicus	Plains Hog-nosed Snake	LT	1	2006-06-23
Lanius ludovicianus	Loggerhead Shrike	LE	2	2009-05
Notropis heterolepis	Blacknose Shiner	LE	3	2007-06-05
Notropis texanus	Weed Shiner	LE	3	2007-10-22
Orobanche ludoviciana	Broomrape	LT	1	2006-04-07
Pinus banksiana	Jack Pine	LE	1	2008-FA
Speyeria idalia	Regal Fritillary	LT	1	2009-07-02
Tomanthera auriculata	Ear-leafed Foxglove	LT	1	2006-08-30
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	LE	1	2002-06-23

Bureau **Total # of Species** **15**

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Cook				
Alasmidonta viridis	Slippershell	LT	1	2000-09-07
Amelanchier interior	Shadbush	LT	2	2009-05-03
Amelanchier sanguinea	Shadbush	LE	2	2009-05-22
Ammophila breviligulata	Marram Grass	LE	6	2009-09-23
Asclepias lanuginosa	Wooly Milkweed	LE	2	2009-07-10
Asclepias ovalifolia	Oval Milkweed	LE	1	2009-06-15
Aster furcatus	Forked Aster	LT	3	2009-08-22
Bartramia longicauda	Upland Sandpiper	LE	3	1995-06-14
Beckmannia syzigachne	American Slough Grass	LE	4	2009-07-31
Besseya bullii	Kittentails	LT	1	2009-06-01
Botrychium multifidum	Northern Grape Fern	LE	1	1992-05-06
Botrychium simplex	Dwarf Grape Fern	LE	1	1976-07-09
Cakile edentula	Sea Rocket	LT	7	2009-08-16
Calopogon tuberosus	Grass Pink Orchid	LE	4	2009-07-10
Carex aurea	Golden Sedge	LT	4	2009-07-05
Carex bromoides	Sedge	LT	3	2009-05-31
Carex echinata	Sedge	LE	1	2002-06-17
Carex formosa	Sedge	LE	4	2009-07-03
Carex garberi	Sedge	LE	1	2000-05-24
Carex intumescens	Swollen Sedge	LT	2	1995-07-10
Carex tuckermanii	Tuckerman's Sedge	LE	1	2000-08-29
Carex viridula	Little Green Sedge	LT	2	2009-07-12
Carex woodii	Pretty Sedge	LT	2	2009-06-06
Catostomus catostomus	Longnose Sucker	LT	1	1991
Chamaedaphne calyculata	Leatherleaf	LT	1	1987-03-28
Chamaesyce polygonifolia	Seaside Spurge	LE	3	2009-09-23
Chimaphila maculata	Spotted Wintergreen	LE	1	1981-11-13
Chlidonias niger	Black Tern	LE	5	1996-07-22
Cirsium pitcheri	Pitcher's (Dune) Thistle	LT	1	2009-06-21
Clonophis kirtlandii	Kirtland's Snake	LT	5	1998-05-25
Comptonia peregrina	Sweetfern	LE	1	2009-08-18
Corallorhiza maculata	Spotted Coral-root Orchid	LT	1	1999-07-03
Cypripedium candidum	White Lady's Slipper	LT	15	2010
Dalea foliosa	Leafy Prairie Clover	LE	2	2010-07-17
Deschampsia flexuosa	Hairgrass	LE	1	2003
Dichanthelium boreale	Northern Panic Grass	LE	2	2008-06-14
Drosera intermedia	Narrow-leaved Sundew	LT	4	2001-07
Drosera rotundifolia	Round-leaved Sundew	LE	1	1976-07-06
Egretta caerulea	Little Blue Heron	LE	3	2002
Egretta thula	Snowy Egret	LE	1	1987
Eleocharis olivacea	Capitate Spikerush	LE	1	1991-08-01

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Cook				
Eleocharis pauciflora	Few-flowered Spikerush	LE	1	2002-06
Eleocharis rostellata	Spike Rush	LT	1	2000-06-18
Elymus trachycaulus	Bearded Wheat Grass	LT	1	2000-06-29
Emydoidea blandingii	Blanding's Turtle	LE	16	2010-04-04
Etheostoma exile	Iowa Darter	LT	2	2002-SUM
Falco peregrinus	Peregrine Falcon	LT	21	2010-07-08
Filipendula rubra	Queen-of-the-prairie	LE	2	2009-08-25
Fundulus diaphanus	Banded Killifish	LT	3	2010-03-10
Gallinula chloropus	Common Moorhen	LE	7	2008
Geranium bicknellii	Northern Cranesbill	LE	2	2009-07-31
Helianthus giganteus	Tall Sunflower	LE	1	1999-09-12
Hypericum kalmianum	Kalm's St. John's Wort	LE	2	2009-09-05
Ixobrychus exilis	Least Bittern	LT	4	2008
Juncus alpinus	Richardson's Rush	LE	2	2009-08-08
Juniperus communis	Ground Juniper	LT	2	2009-05-22
Lathyrus ochroleucus	Pale Vetchling	LT	1	2009-05-23
Lespedeza leptostachya	Prairie Bush Clover	LE	1	1995-08-30
Liatris scariosa var. nieuwlandii	Blazing Star	LT	6	2009-09-05
Medeola virginiana	Indian Cucumber Root	LE	1	2009-05-31
Minuartia patula	Slender Sandwort	LT	2	2010
Nannothemis bella	Elfin Skimmer	LT	1	2004
Necturus maculosus	Mudpuppy	LT	8	1998-03-21
Notropis heterodon	Blackchin Shiner	LT	1	1987-07-10
Nyctanassa violacea	Yellow-crowned Night-Heron	LE	3	2000
Nycticorax nycticorax	Black-crowned Night-Heron	LE	13	2011-06-05
Oenothera perennis	Small Sundrops	LT	10	2009-06-29
Pandion haliaetus	Osprey	LE	2	2010-09
Papaipema eryngii	Eryngium Stem Borer	LE	1	2003
Phalaropus tricolor	Wilson's Phalarope	LE	1	1981
Plantago cordata	Heart-leaved Plantain	LE	1	2008-06-21
Platanthera ciliaris	Orange Fringed Orchid	LE	1	2001-07
Platanthera clavellata	Wood Orchid	LE	2	2000-07-20
Platanthera flava var. herbiola	Tubercled Orchid	LT	2	1999-06
Platanthera leucophaea	Eastern Prairie Fringed Orchid	LE	12	2010
Platanthera psycodes	Purple Fringed Orchid	LE	1	2008-07-30
Poa languida	Weak Bluegrass	LE	1	2005
Pogonia ophioglossoides	Snake-mouth	LE	2	2000-06-20
Polygonatum pubescens	Downy Solomon's Seal	LE	7	2009-06-06
Polygonum careyi	Carey's Heartsease	LE	1	1986
Populus balsamifera	Balsam Poplar	LE	1	2004-04-28
Potamogeton gramineus	Grass-leaved Pondweed	LT	1	2002-06-01

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Cook				
Potamogeton robbinsii	Fern Pondweed	LE	1	1987-08-27
Rallus elegans	King Rail	LE	2	1990-06-16
Rhynchospora alba	Beaked Rush	LT	1	1976
Rubus odoratus	Purple-flowering Raspberry	LE	1	2009-08-10
Rubus pubescens	Dwarf Raspberry	LT	5	2009-05-31
Rubus schneideri	Bristly Blackberry	LT	1	1996
Scirpus hattorianus	Bulrush	LE	1	2002-2007
Silene regia	Royal Catchfly	LE	1	2009-08-02
Sistrurus catenatus catenatus	Eastern Massasauga	LE	5	2006-05-24
Sisyrinchium montanum	Mountain Blue-eyed Grass	LE	8	2009-06-11
Somatochlora hineana	Hine's Emerald Dragonfly	LE	2	2008
Sparganium emersum	Green-fruited Burreed	LE	1	2010-08-20
Spermophilus franklinii	Franklin's Ground Squirrel	LT	2	2006-08-05
Spiranthes lucida	Yellow-lipped Ladies' Tresses	LE	2	2009-06-08
Stellaria pubera	Great Chickweed	LE	1	2009-05-29
Tetraneuris herbacea	Lakeside Daisy	LE	2	2010-05-02
Tofieldia glutinosa	False Asphodel	LT	1	2009-07-13
Tomanthera auriculata	Ear-leafed Foxglove	LT	10	2009-09-03
Trientalis borealis	Star-flower	LE	2	2008-05-29
Triglochin palustris	Slender Bog Arrow Grass	LT	1	2009-07-21
Trillium cernuum	Nodding Trillium	LE	1	2009-05-03
Utricularia intermedia	Flat-leaved Bladderwort	LT	2	2009-08-26
Utricularia minor	Small Bladderwort	LE	1	1990
Vaccinium macrocarpon	Large Cranberry	LE	1	1987-03-28
Vaccinium oxycoccos	Small Cranberry	LE	1	1999-11-02
Veronica scutellata	Marsh Speedwell	LT	7	2009-07-31
Viola blanda	Hairy White Violet	LE	2	1999-04
Viola canadensis	Canada Violet	LE	1	2008-05-10
Viola conspersa	Dog Violet	LT	7	2009-05-15
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	LE	7	2008

Cook Total # of Species: 112

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
DeKalb				
Alasmidonta viridis	Slippershell	LT	5	2010-08-24
Asclepias lanuginosa	Wooly Milkweed	LE	1	1976-08-23
Carex echinata	Sedge	LE	1	1971-06-09
Emydoidea blandingii	Blanding's Turtle	LE	2	1993-06-11
Erimystax x-punctatus	Gravel Chub	LT	1	1997-07-17
Etheostoma exile	Iowa Darter	LT	1	1967-10-10
Lanius ludovicianus	Loggerhead Shrike	LE	2	1994
Ligumia recta	Black Sandshell	LT	2	2009-08-10
Sambucus racemosa ssp. pubens	Red-berried Elder	LE	1	1985
Viola conspersa	Dog Violet	LT	1	1975

DeKalb Total # of Species: 10

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
DuPage				
Alasmidonta viridis	Slippershell	LT	1	2009-07-17
Amelanchier interior	Shadbush	LT	5	2010
Asclepias meadii	Mead's Milkweed	LE	2	2008
Asio flammeus	Short-eared Owl	LE	3	2008-01-27
Astragalus tennesseensis	Tennessee Milk Vetch	LE	1	1996
Bartramia longicauda	Upland Sandpiper	LE	2	1999-01-01
Botaurus lentiginosus	American Bittern	LE	1	2008
Carex bromoides	Sedge	LT	1	2010
Carex cryptolepis	Sedge	LE	1	2008-06-18
Carex tuckermanii	Tuckerman's Sedge	LE	3	2010
Carex viridula	Little Green Sedge	LT	5	2008-06-18
Carex woodii	Pretty Sedge	LT	7	2009-06-12
Chlidonias niger	Black Tern	LE	3	1989
Circus cyaneus	Northern Harrier	LE	1	1995
Clonophis kirtlandii	Kirtland's Snake	LT	3	1995-01-01
Corallorhiza maculata	Spotted Coral-root Orchid	LT	1	1989-08-18
Cypripedium candidum	White Lady's Slipper	LT	7	2010-05-18
Dalea foliosa	Leafy Prairie Clover	LE	2	2010-10-07
Elymus trachycaulus	Bearded Wheat Grass	LT	1	2009-08-12
Emydoidea blandingii	Blanding's Turtle	LE	12	2010
Falco peregrinus	Peregrine Falcon	LT	1	1990
Fundulus diaphanus	Banded Killifish	LT	1	2010-09-30
Gallinula chloropus	Common Moorhen	LE	7	2007-09-04
Iliamna remota	Kankakee Mallow	LE	1	2009-07-16
Isoetes butleri	Quillwort	LE	1	2010
Ixobrychus exilis	Least Bittern	LT	5	2001-06
Juncus alpinus	Richardson's Rush	LE	2	2010-07-13
Lanius ludovicianus	Loggerhead Shrike	LE	1	1988-07-01
Laterallus jamaicensis	Black Rail	LE	1	2000-01-01
Lathyrus ochroleucus	Pale Vetchling	LT	1	2010
Lespedeza leptostachya	Prairie Bush Clover	LE	2	2001-07-28
Liatris scariosa var. nieuwlandii	Blazing Star	LT	1	2009-08-28
Lycopodium clavatum	Running Pine	LE	1	2001-12-03
Melanthium virginicum	Bunchflower	LT	1	1991-06-20
Minuartia patula	Slender Sandwort	LT	1	2010
Notropis anogenus	Pugnose Shiner	LE	1	2010-09-30
Notropis heterodon	Blackchin Shiner	LT	1	2010-09-30
Notropis heterolepis	Blacknose Shiner	LE	1	2010-09-30
Nyctanassa violacea	Yellow-crowned Night-Heron	LE	1	1997
Nycticorax nycticorax	Black-crowned Night-Heron	LE	18	2006-07-12
Oenothera perennis	Small Sundrops	LT	1	2010

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
DuPage				
Pandion haliaetus	Osprey	LE	1	2010-09
Penstemon tubaeflorus	Tube Beard Tongue	LE	3	2010
Plantago cordata	Heart-leaved Plantain	LE	1	2009-06-24
Platanthera leucophaea	Eastern Prairie Fringed Orchid	LE	3	2010
Rallus elegans	King Rail	LE	1	2005-05-05
Rubus odoratus	Purple-flowering Raspberry	LE	1	2009-08-19
Rubus pubescens	Dwarf Raspberry	LT	1	1979-10-28
Scirpus hattorianus	Bulrush	LE	2	2010
Sistrurus catenatus catenatus	Eastern Massasauga	LE	1	1995
Sisyrinchium montanum	Mountain Blue-eyed Grass	LE	1	2010
Somatochlora hineana	Hine's Emerald Dragonfly	LE	1	2007-07-31
Sparganium emersum	Green-fruited Burreed	LE	1	2010-08-20
Spermophilus franklinii	Franklin's Ground Squirrel	LT	1	2006-08-05
Tetraneuris herbacea	Lakeside Daisy	LE	1	2010-05-01
Tomanthera auriculata	Ear-leafed Foxglove	LT	4	2010
Trifolium reflexum	Buffalo Clover	LT	3	1992
Veronica scutellata	Marsh Speedwell	LT	6	2009-08-25
Viola conspersa	Dog Violet	LT	2	2010
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	LE	4	2008

DuPage **Total # of Species** **40**

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Henry				
Asclepias meadii	Mead's Milkweed	LE	1	1999
Bartramia longicauda	Upland Sandpiper	LE	2	2006-06-09
Cyclonaias tuberculata	Purple Wartyback	LT	1	1990-09-28
Emydoidea blandingii	Blanding's Turtle	LE	2	1996-05-21
Fundulus dispar	Starhead topminnow	LT	1	2007-06-04
Heterodon nasicus	Plains Hog-nosed Snake	LT	1	2006-06
Kinosternon flavescens	Yellow Mud Turtle	LE	1	2009-05-22
Lanius ludovicianus	Loggerhead Shrike	LE	2	2009-05
Ligumia recta	Black Sandshell	LT	1	1988-10-18
Notropis heterolepis	Blacknose Shiner	LE	1	2007-04-10
Notropis texanus	Weed Shiner	LE	1	2007-04-19
Orobanche ludoviciana	Broomrape	LT	1	1996-09-04
Platanthera leucophaea	Eastern Prairie Fringed Orchid	LE	1	2010
Tomanthera auriculata	Ear-leafed Foxglove	LT	2	1994-09-15

Henry **Total # of Species** **14**

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Kane				
Alasmidonta viridis	Slippershell	LT	9	2009-09-09
Alnus incana ssp. rugosa	Speckled Alder	LE	1	2007-08-28
Amelanchier interior	Shadbush	LT	1	2007-05-01
Asclepias lanuginosa	Wooly Milkweed	LE	1	1995-06-19
Aster furcatus	Forked Aster	LT	2	2009-09-05
Besseya bullii	Kittentails	LT	1	2009-05-22
Botrychium campestre	Prairie moonwort	LE	2	2009-06-01
Buteo swainsoni	Swainson's Hawk	LE	11	2007
Calopogon tuberosus	Grass Pink Orchid	LE	1	2009-07-02
Carex aurea	Golden Sedge	LT	2	2009-06-28
Carex oligosperma	Few-seeded Sedge	LE	1	1972-06
Carex woodii	Pretty Sedge	LT	1	2010
Chamaedaphne calyculata	Leatherleaf	LT	1	1994-08-10
Chlidonias niger	Black Tern	LE	3	2002-06-17
Corallorhiza maculata	Spotted Coral-root Orchid	LT	1	1994-07-30
Cyclonaias tuberculata	Purple Wartyback	LT	1	1994-08-17
Cypripedium candidum	White Lady's Slipper	LT	3	2009-06-04
Drosera intermedia	Narrow-leaved Sundew	LT	1	1972-05
Elliptio dilatata	Spike	LT	6	2010-08-25
Elymus trachycaulus	Bearded Wheat Grass	LT	1	1991-08-02
Emydoidea blandingii	Blanding's Turtle	LE	13	2011-05-13
Etheostoma exile	Iowa Darter	LT	1	1998-07-05
Gallinula chloropus	Common Moorhen	LE	5	2007-09-04
Ixobrychus exilis	Least Bittern	LT	4	2005
Lanius ludovicianus	Loggerhead Shrike	LE	2	1989-06-08
Lechea intermedia	Pinweed	LT	1	1977-08-22
Ligumia recta	Black Sandshell	LT	2	2009-06-12
Moxostoma carinatum	River Redhorse	LT	2	2003-06-06
Moxostoma valenciennesi	Greater Redhorse	LE	2	2010-11-03
Nannothemis bella	Elfin Skimmer	LT	1	2004
Notropis boops	Bigeye Shiner	LE	1	2008-08-08
Nycticorax nycticorax	Black-crowned Night-Heron	LE	5	2004
Pandion haliaetus	Osprey	LE	2	2010-09
Phalaropus tricolor	Wilson's Phalarope	LE	1	2008-Sum
Platanthera leucophaea	Eastern Prairie Fringed Orchid	LE	3	2010
Potamogeton pulcher	Spotted Pondweed	LE	1	1992
Ranunculus rhomboideus	Prairie Buttercup	LT	1	2009-04-28
Rubus odoratus	Purple-flowering Raspberry	LE	1	2009-09-12
Rubus pubescens	Dwarf Raspberry	LT	1	1993-05-08
Silene regia	Royal Catchfly	LE	3	2009-07-19
Sparganium americanum	American Burreed	LE	1	1980-07-09

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Kane				
Sparganium americanum	Green-fruited Burreed	LE	2	2010-08-20
Spiranthes lucida	Yellow-lipped Ladies' Tresses	LE	1	2001-06-08
Symphoricarpos albus var. albus	Snowberry	LE	1	2007-05-01
Tofieldia glutinosa	False Asphodel	LT	1	2002
Triglochin maritima	Common Bog Arrow Grass	LT	2	1997
Triglochin palustris	Slender Bog Arrow Grass	LT	1	2009-09-11
Utricularia intermedia	Flat-leaved Bladderwort	LT	1	1991-06
Veronica americana	American Brooklime	LE	2	2001-07-02
Veronica scutellata	Marsh Speedwell	LT	1	2001-07-02
Viola blanda	Hairy White Violet	LE	1	2000
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	LE	6	2011-05-12
Zigadenus elegans	White Camass	LE	1	1967-07

Kane **Total # of Species: 53**

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Kendall				
Alasmidonta viridis	Slippershell	LT	1	1998-09-10
Aster furcatus	Forked Aster	LT	1	1983-09-05
Carex bromoides	Sedge	LT	2	2001
Carex woodii	Pretty Sedge	LT	2	2009-04-30
Cimicifuga racemosa	False Bugbane	LE	1	2001-06-10
Cypripedium reginae	Showy Lady's Slipper	LE	1	2001-06-10
Eleocharis rostellata	Spike Rush	LT	1	2001-07-02
Lanius ludovicianus	Loggerhead Shrike	LE	1	1985-06-24
Mimulus glabratus	Yellow Monkey Flower	LE	1	2001-07
Moxostoma carinatum	River Redhorse	LT	3	2010-11-03
Moxostoma valenciennesi	Greater Redhorse	LE	5	2010-11-03
Pandion haliaetus	Osprey	LE	1	2002-08-01
Plantago cordata	Heart-leaved Plantain	LE	1	1991-04-22
Rhamnus alnifolia	Alder Buckthorn	LE	1	1999-07-20
Scirpus hattorianus	Bulrush	LE	1	2001
Tomanthera auriculata	Ear-leafed Foxglove	LT	1	1991-09-06
Triglochin palustris	Slender Bog Arrow Grass	LT	1	1997-09-02
Ulmus thomasii	Rock Elm	LE	1	2011-05-03
Veronica americana	American Brooklime	LE	2	2005-06-23

Kendall **Total # of Species: 19**

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
La Salle				
Alasmidonta viridis	Slippershell	LT	3	2009-06-16
Amelanchier sanguinea	Shadbush	LE	1	1998-12-09
Aster furcatus	Forked Aster	LT	4	2010-08-27
Bartramia longicauda	Upland Sandpiper	LE	1	2005-05-28
Boltonia decurrens	Decurrent False Aster	LT	1	2006-09-25
Carex communis	Fibrous-rooted Sedge	LT	3	2003-07-28
Carex plantaginea	Plantain-leaved Sedge	LE	1	2006-05-25
Cornus canadensis	Bunchberry	LE	1	1980s
Corydalis aurea	Golden Corydalis	LE	1	1998-05-03
Corydalis sempervirens	Pink Corydalis	LE	1	1998-05-03
Crotalus horridus	Timber Rattlesnake	LT	2	2000-07
Dendroica cerulea	Cerulean Warbler	LT	2	2008-06-16
Dichanthelium portoricense	Hemlock Panic Grass	LE	1	1998-08-20
Elliptio dilatata	Spike	LT	1	2010-08-23
Emydoidea blandingii	Blanding's Turtle	LE	2	2001-04-28
Filipendula rubra	Queen-of-the-prairie	LE	2	2002-10-01
Hemidactylium scutatum	Four-toed Salamander	LT	1	2006-03-31
Lanius ludovicianus	Loggerhead Shrike	LE	1	1987-07-16
Luzula acuminata	Hairy Woodrush	LE	3	2002-04-26
Moxostoma carinatum	River Redhorse	LT	5	2005-07-23
Moxostoma valenciennesi	Greater Redhorse	LE	1	1985-07-30
Myotis sodalis	Indiana Bat	LE	2	2007
Phegopteris connectilis	Long Beech Fern	LE	1	1998-12-11
Pinus resinosa	Red Pine	LE	1	2001-10
Poa languida	Weak Bluegrass	LE	1	1995
Sambucus racemosa ssp. pubens	Red-berried Elder	LE	4	2003-07-28
Solidago sciaphila	Cliff Goldenrod	LT	4	2002-03-29
Speyeria idalia	Regal Fritillary	LT	1	2003-07-04
Symphoricarpos albus var. albus	Snowberry	LE	1	1991
Veronica americana	American Brooklime	LE	1	1999-09-10

La Salle Total # of Species 30

Scientific Name	Common Name	State Protection	# of occurrences	Last Observed
Rock Island				
Acipenser fulvescens	Lake Sturgeon	LE	2	1992-04-09
Ammocrypta clarum	Western Sand Darter	LE	2	1987-08-11
Castilleja sessiliflora	Downy Yellow Painted Cup	LE	1	2009-05-17
Catostomus catostomus	Longnose Sucker	LT	1	1994-02-25
Corallorhiza maculata	Spotted Coral-root Orchid	LT	1	2002-08-29
Cumberlandia monodonta	Spectaclecase	LE	4	1998-07-24
Cyclonaias tuberculata	Purple Wartyback	LT	1	1990-09-28
Dendroica cerulea	Cerulean Warbler	LT	1	2004-06-19
Ellipsaria lineolata	Butterfly	LT	7	2011-08-31
Elliptio dilatata	Spike	LT	1	1983-05
Emydoidea blandingii	Blanding's Turtle	LE	1	1937
Erimyzon s-punctatus	Gravel Chub	LT	2	1999-08-30
Fusconaia ebena	Ebonyshell	LT	1	1983-05
Hemidactylium scutatum	Four-toed Salamander	LT	1	2004-05-11
Hybopsis amnis	Pallid Shiner	LE	1	1986-10-07
Lampsilis higginsii	Higgins Eye	LE	7	2009-09-22
Ligumia recta	Black Sandshell	LT	11	2011-08-31
Lycopodium clavatum	Running Pine	LE	1	1988
Necturus maculosus	Mudpuppy	LT	1	1927-09-08
Nyctanassa violacea	Yellow-crowned Night-Heron	LE	1	1999-06
Nycticorax nycticorax	Black-crowned Night-Heron	LE	1	1993-10-18
Plethobasus cyphyus	Sheepnose	LE	3	2006-08-01
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	LE	1	1995-05-11

Rock Island Total # of Species 23

Iowa Threatened & Endangered Species by County
Source: Iowa DNR – Natural Heritage Database (September 12, 2011)

State Status:
E - listed as Endangered; T - listed as Threatened; S - listed as Special Concern

ADAIR County, IA

Summary by Species Report
Total Unique Listed Species In This County: 14

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
ADAIR	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
ADAIR	Barn Owl	Tyto alba	BIRDS	E		PDF
ADAIR	Henslow's Sparrow	Ammodramus henslowii	BIRDS	T		PDF
ADAIR	Northern Harrier	Circus cyaneus	BIRDS	E		PDF
ADAIR	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
ADAIR	Spotted Skunk	Spilogale putorius	MAMMALS	E		PDF
ADAIR	Blue Wild Indigo	Baptisia australis	PLANTS (DICOTS)	S		PDF
ADAIR	Low Hairy Ground-cherry	Physalis pubescens	PLANTS (DICOTS)	S		PDF
ADAIR	Mead's Milkweed	Asclepias meadii	PLANTS (DICOTS)	E	T	PDF
ADAIR	Broom Sedge	Andropogon virginicus	PLANTS (MONOCOTS)	S		PDF
ADAIR	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF
ADAIR	Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S		PDF
ADAIR	Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T	PDF
ADAIR	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF

CASS County, IA

Summary by Species Report
Total Unique Listed Species In This County: 6

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
CASS	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
CASS	Henslow's Sparrow	Ammodramus henslowii	BIRDS	T		PDF
CASS	Long-eared Owl	Asio otus	BIRDS	T		PDF
CASS	Zebra Swallowtail	Eurytides marcellus	INSECTS	S		PDF
CASS	Nodding Thistle	Cirsium undulatum	PLANTS (DICOTS)	S		PDF
CASS	Large-leaf Pondweed	Potamogeton amplifolius	PLANTS (MONOCOTS)	S		PDF

CEDAR County, IA

Summary by Species Report
Total Unique Listed Species In This County: 38

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
CEDAR	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
CEDAR	Least Darter	Etheostoma microperca	FISH	E		PDF
CEDAR	Pistolgrip	Tritogonia verrucosa	FRESHWATER MUSSELS	E		PDF
CEDAR	Purple Wartyback	Cyclonaias tuberculata	FRESHWATER MUSSELS	T		PDF
CEDAR	Yellow Sandshell	Lampsilis teres	FRESHWATER MUSSELS	E		PDF
CEDAR	Black Huckleberry	Gaylussacia baccata	PLANTS (DICOTS)	T		PDF
CEDAR	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
CEDAR	James Cristatella	Polanisia jamesii	PLANTS (DICOTS)	E		PDF
CEDAR	Kitten Tails	Besseya bullii	PLANTS (DICOTS)	T		PDF
CEDAR	Lance-leaved Violet	Viola lanceolata	PLANTS (DICOTS)	S		PDF
CEDAR	Meadow Beauty	Rhexia virginica	PLANTS (DICOTS)	T		PDF
CEDAR	Pink Milkwort	Polygala incarnata	PLANTS (DICOTS)	T		PDF
CEDAR	Slender Copperleaf	Acalypha gracilens	PLANTS (DICOTS)	S		PDF
CEDAR	Spring Avens	Geum vernum	PLANTS (DICOTS)	S		PDF
CEDAR	Sweet Indian Plantain	Cacalia suaveolens	PLANTS (DICOTS)	T		PDF
CEDAR	Toothcup	Rotala ramosior	PLANTS (DICOTS)	S		PDF
CEDAR	Violet	Viola macloskeyi	PLANTS (DICOTS)	S		PDF
CEDAR	Water Starwort	Callitriche heterophylla	PLANTS (DICOTS)	S		PDF
CEDAR	Wood Stonecrop	Sedum ternatum	PLANTS (DICOTS)	S		PDF
CEDAR	Field Sedge	Carex conoidea	PLANTS (MONOCOTS)	S		PDF
CEDAR	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
CEDAR	Grassleaf Rush	Juncus marginatus	PLANTS (MONOCOTS)	S		PDF
CEDAR	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
CEDAR	Green Arrow Arum	Peltandra virginica	PLANTS (MONOCOTS)	E		PDF
CEDAR	Low Nut Rush	Scleria verticillata	PLANTS (MONOCOTS)	T		PDF
CEDAR	Pale Green Orchid	Platanthera flava	PLANTS (MONOCOTS)	E		PDF
CEDAR	Slender Dayflower	Commelina erecta	PLANTS (MONOCOTS)	T		PDF
CEDAR	Slender Fimbry	Fimbristylis autumnalis	PLANTS (MONOCOTS)	S		PDF
CEDAR	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF

CEDAR	Slim-leaved Panic Grass	Dichanthelium linearifolium	PLANTS (MONOCOTS)	T		PDF
CEDAR	Wolf Spike-rush	Eleocharis wolfii	PLANTS (MONOCOTS)	S		PDF
CEDAR	Yellow-eyed Grass	Xyris torta	PLANTS (MONOCOTS)	E		PDF
CEDAR	Ledge Spikemoss	Selaginella rupestris	PLANTS (PTERIODOPHYTES)	S		PDF
CEDAR	Northern Adder's-tongue	Ophioglossum pusillum	PLANTS (PTERIODOPHYTES)	S		PDF
CEDAR	Royal Fern	Osmunda regalis	PLANTS (PTERIODOPHYTES)	T		PDF
CEDAR	Woodland Horsetail	Equisetum sylvaticum	PLANTS (PTERIODOPHYTES)	T		PDF
CEDAR	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
CEDAR	Ornate Box Turtle	Terrapene ornata	REPTILES	T		PDF

DALLAS County, IA

Summary by Species Report
Total Unique Listed Species In This County: 12

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
DALLAS	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
DALLAS	Blacknose Shiner	Notropis heterolepis	FISH	T		PDF
DALLAS	Chestnut Lamprey	Ichthyomyzon castaneus	FISH	T		PDF
DALLAS	Topeka Shiner	Notropis topeka	FISH	T	E	PDF
DALLAS	Western Sand Darter	Ammocrypta clara	FISH	T		PDF
DALLAS	Hickory Hairstreak	Satyrium caryaevorum	INSECTS	S		PDF
DALLAS	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
DALLAS	Indiana Bat	Myotis sodalis	MAMMALS	E	E	PDF
DALLAS	Oval Ladies'-tresses	Spiranthes ovalis	PLANTS (MONOCOTS)	T		PDF
DALLAS	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
DALLAS	Bullsnake	Pituophis catenifer sayi	REPTILES	S		PDF
DALLAS	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF

GUTHRIE County, IA

Summary by Species Report
Total Unique Listed Species In This County: 27

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
GUTHRIE	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
GUTHRIE	Barn Owl	Tyto alba	BIRDS	E		PDF
GUTHRIE	Northern Harrier	Circus cyaneus	BIRDS	E		PDF
GUTHRIE	Short-eared Owl	Asio flammeus	BIRDS	E		PDF
GUTHRIE	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
GUTHRIE	Indiana Bat	Myotis sodalis	MAMMALS	E	E	PDF
GUTHRIE	Plains Pocket Mouse	Perognathus flavescens	MAMMALS	E		PDF
GUTHRIE	Spotted Skunk	Spilogale putorius	MAMMALS	E		PDF
GUTHRIE	Bigroot Prickly-pear	Opuntia macrorhiza	PLANTS (DICOTS)	E		PDF
GUTHRIE	Flat Top White Aster	Aster pubentior	PLANTS (DICOTS)	S		PDF
GUTHRIE	Illinois Pinweed	Lechea racemulosa	PLANTS (DICOTS)	S		PDF
GUTHRIE	Narrow-leaved Milkweed	Asclepias stenophylla	PLANTS (DICOTS)	E		PDF
GUTHRIE	Narrowleaf Pinweed	Lechea intermedia	PLANTS (DICOTS)	T		PDF
GUTHRIE	Sand Pigweed	Amaranthus arenicola	PLANTS (DICOTS)	S		PDF
GUTHRIE	Shining Willow	Salix lucida	PLANTS (DICOTS)	T		PDF
GUTHRIE	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
GUTHRIE	Showy Lady's Slipper	Cypripedium reginae	PLANTS (MONOCOTS)	T		PDF
GUTHRIE	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF
GUTHRIE	Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S		PDF
GUTHRIE	Slim-leaved Panic Grass	Dichanthelium linearifolium	PLANTS (MONOCOTS)	T		PDF
GUTHRIE	Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S		PDF
GUTHRIE	Spiral Pondweed	Potamogeton spirillus	PLANTS (MONOCOTS)	S		PDF
GUTHRIE	Tumble Grass	Schedonnardus paniculatus	PLANTS (MONOCOTS)	S		PDF
GUTHRIE	Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T	PDF
GUTHRIE	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
GUTHRIE	Bullsnake	Pituophis catenifer sayi	REPTILES	S		PDF
GUTHRIE	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF

IOWA County, IA

Summary by Species Report
Total Unique Listed Species In This County: 31

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
IOWA	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
IOWA	Henslow's Sparrow	Ammodramus henslowii	BIRDS	T		PDF
IOWA	Topeka Shiner	Notropis topeka	FISH	T	E	PDF
IOWA	Weed Shiner	Notropis texanus	FISH	E		PDF
IOWA	Arogos Skipper	Atrytone arogos	INSECTS	S		PDF
IOWA	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
IOWA	Two-spotted Skipper	Euphyes bimacula	INSECTS	S		PDF
IOWA	Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S		PDF
IOWA	Fineberry Hawthorn	Crataegus chrysocarpa	PLANTS (DICOTS)	S		PDF
IOWA	Flat Top White Aster	Aster pubentior	PLANTS (DICOTS)	S		PDF
IOWA	Fogg's Goosefoot	Chenopodium foggii	PLANTS (DICOTS)	S		PDF
IOWA	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
IOWA	Low Bindweed	Calystegia spithamaea	PLANTS (DICOTS)	S		PDF
IOWA	Pink Milkwort	Polygala incarnata	PLANTS (DICOTS)	T		PDF
IOWA	Spring Avens	Geum vernum	PLANTS (DICOTS)	S		PDF
IOWA	Tunnel-formed Penstemon	Penstemon tubiflorus	PLANTS (DICOTS)	S		PDF
IOWA	Violet	Viola macloskeyi	PLANTS (DICOTS)	S		PDF
IOWA	Eastern Prairie Fringed Orchid	Platanthera leucophaea	PLANTS (MONOCOTS)	E	T	PDF
IOWA	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
IOWA	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
IOWA	Green Adder's Mouth	Malaxis unifolia	PLANTS (MONOCOTS)	S		PDF
IOWA	Showy Lady's Slipper	Cypripedium reginae	PLANTS (MONOCOTS)	T		PDF
IOWA	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF
IOWA	Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S		PDF
IOWA	Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T	PDF
IOWA	Crowfoot Clubmoss	Lycopodium digitatum	PLANTS (PTERIODOPHYTES)	S		PDF
IOWA	Ground Pine	Lycopodium clavatum	PLANTS (PTERIODOPHYTES)	E		PDF
IOWA	Woodland Horsetail	Equisetum sylvaticum	PLANTS (PTERIODOPHYTES)	T		PDF
IOWA	Ornate Box Turtle	Terrapene ornata	REPTILES	T		PDF
IOWA	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF
IOWA	Wood Turtle	Clemmys insculpta	REPTILES	E		PDF

JASPER County, IA

Summary by Species Report
Total Unique Listed Species In This County: 23

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
JASPER	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
JASPER	Short-eared Owl	Asio flammeus	BIRDS	E		PDF
JASPER	Mulberry Wing	Poanes massasoit	INSECTS	T		PDF
JASPER	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
JASPER	Indiana Bat	Myotis sodalis	MAMMALS	E	E	PDF
JASPER	Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S		PDF
JASPER	False Loosestrife	Ludwigia peploides	PLANTS (DICOTS)	S		PDF
JASPER	Flat Top White Aster	Aster pubentior	PLANTS (DICOTS)	S		PDF
JASPER	Flax-leaved Aster	Aster linariifolius	PLANTS (DICOTS)	T		PDF
JASPER	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
JASPER	Low Hairy Ground-cherry	Physalis pubescens	PLANTS (DICOTS)	S		PDF
JASPER	Pink Milkwort	Polygala incarnata	PLANTS (DICOTS)	T		PDF
JASPER	Toothcup	Rotala ramosior	PLANTS (DICOTS)	S		PDF
JASPER	Wooly Milkweed	Asclepias lanuginosa	PLANTS (DICOTS)	T		PDF
JASPER	Douglas' Sedge	Carex douglasii	PLANTS (MONOCOTS)	S		PDF
JASPER	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
JASPER	Oval Ladies'-tresses	Spiranthes ovalis	PLANTS (MONOCOTS)	T		PDF
JASPER	Showy Lady's Slipper	Cypripedium reginae	PLANTS (MONOCOTS)	T		PDF
JASPER	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF
JASPER	Woodland Horsetail	Equisetum sylvaticum	PLANTS (PTERIODOPHYTES)	T		PDF
JASPER	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
JASPER	Bullsnake	Pituophis catenifer sayi	REPTILES	S		PDF
JASPER	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF

JOHNSON County, IA

Summary by Species Report
Total Unique Listed Species In This County: 71

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
JOHNSON	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
JOHNSON	Barn Owl	Tyto alba	BIRDS	E		PDF
JOHNSON	Northern Harrier	Circus cyaneus	BIRDS	E		PDF
JOHNSON	Freckled Madtom	Noturus nocturnus	FISH	E		PDF
JOHNSON	Orangethroat Darter	Etheostoma spectabile	FISH	T		PDF
JOHNSON	Butterfly	Ellipsaria lineolata	FRESHWATER MUSSELS	T		PDF
JOHNSON	Creeper	Strophitus undulatus	FRESHWATER MUSSELS	T		PDF
JOHNSON	Fat Pocketbook	Potamilus capax	FRESHWATER MUSSELS		E	PDF
JOHNSON	Higgin's-eye Pearly Mussel	Lampsilis higginsii	FRESHWATER MUSSELS	E	E	PDF
JOHNSON	Pistolgrip	Tritogonia verrucosa	FRESHWATER MUSSELS	E		PDF
JOHNSON	Purple Wartyback	Cyclonaias tuberculata	FRESHWATER MUSSELS	T		PDF
JOHNSON	Round Pigtoe	Pleurobema sintoxia	FRESHWATER MUSSELS	E		PDF
JOHNSON	Sheepnose	Plethobasus cyphyus	FRESHWATER MUSSELS	E	C	PDF
JOHNSON	Yellow Sandshell	Lampsilis teres	FRESHWATER MUSSELS	E		PDF
JOHNSON	Byssus Skipper	Problema byssus	INSECTS	T		PDF
JOHNSON	Purplish Copper	Lycaena helloides	INSECTS	S		PDF
JOHNSON	Swamp Metalmark	Calephelis mutica	INSECTS	S		PDF
JOHNSON	Spotted Skunk	Spilogale putorius	MAMMALS	E		PDF
JOHNSON	Cleft Phlox	Phlox bifida	PLANTS (DICOTS)	S		PDF
JOHNSON	Cream Violet	Viola striata	PLANTS (DICOTS)	S		PDF
JOHNSON	Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S		PDF
JOHNSON	Fineberry Hawthorn	Crataegus chrysocarpa	PLANTS (DICOTS)	S		PDF
JOHNSON	Frost Grape	Vitis vulpina	PLANTS (DICOTS)	S		PDF
JOHNSON	Hedge Nettle	Stachys aspera	PLANTS (DICOTS)	S		PDF
JOHNSON	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
JOHNSON	Hortulan Plum	Prunus hortulana	PLANTS (DICOTS)	S		PDF
JOHNSON	Humped Bladderwort	Utricularia gibba	PLANTS (DICOTS)	S		PDF
JOHNSON	Lance-leaved Violet	Viola lanceolata	PLANTS (DICOTS)	S		PDF
JOHNSON	Limestone Rockcress	Arabis divaricarpa	PLANTS (DICOTS)	S		PDF
JOHNSON	Low Hairy Ground-cherry	Physalis pubescens	PLANTS (DICOTS)	S		PDF
JOHNSON	Muskroot	Adoxa	PLANTS (DICOTS)	S		PDF

MADISON County, IA

Summary by Species Report
Total Unique Listed Species In This County: 21

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
MADISON	Barn Owl	Tyto alba	BIRDS	E		PDF
MADISON	Henslow's Sparrow	Ammodramus henslowii	BIRDS	T		PDF
MADISON	Byssus Skipper	Problema byssus	INSECTS	T		PDF
MADISON	Edwards' Hairstreak	Satyrium edwardsii	INSECTS	S		PDF
MADISON	Hickory Hairstreak	Satyrium caryaevorum	INSECTS	S		PDF
MADISON	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
MADISON	Wild Indigo Dusky Wing	Erynnis baptisiae	INSECTS	S		PDF
MADISON	Zabulon Skipper	Poanes zabulon	INSECTS	S		PDF
MADISON	Indiana Bat	Myotis sodalis	MAMMALS	E	E	PDF
MADISON	Dwarf Sumac	Rhus copallina	PLANTS (DICOTS)	S		PDF
MADISON	Forked Aster	Aster furcatus	PLANTS (DICOTS)	T		PDF
MADISON	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
MADISON	Nodding Thistle	Cirsium undulatum	PLANTS (DICOTS)	S		PDF
MADISON	Orange Grass St. John's Wort	Hypericum gentianoides	PLANTS (DICOTS)	E		PDF
MADISON	Yellow Wild Indigo	Baptisia tinctoria	PLANTS (DICOTS)	S		PDF
MADISON	Broom Sedge	Andropogon virginicus	PLANTS (MONOCOTS)	S		PDF
MADISON	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
MADISON	Massasauga Rattlesnake	Sistrurus catenatus	REPTILES	E		PDF
MADISON	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF
MADISON	Speckled Kingsnake	Lampropeltis getulus	REPTILES	T		PDF
MADISON	Western Worm Snake	Carphophis amoenus	REPTILES	T		PDF

MUSCATINE County, IA

Summary by Species Report
Total Unique Listed Species In This County: 126

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
MUSCATINE	Central Newt	Notophthalmus viridescens	AMPHIBIANS	T		PDF
MUSCATINE	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
MUSCATINE	Barn Owl	Tyto alba	BIRDS	E		PDF
MUSCATINE	Red-shouldered Hawk	Buteo lineatus	BIRDS	E		PDF
MUSCATINE	Blacknose Shiner	Notropis heterolepis	FISH	T		PDF
MUSCATINE	Bluntnose Darter	Etheostoma chlorosoma	FISH	E		PDF
MUSCATINE	Chestnut Lamprey	Ichthyomyzon castaneus	FISH	T		PDF
MUSCATINE	Freckled Madtom	Noturus nocturnus	FISH	E		PDF
MUSCATINE	Grass Pickerel	Esox americanus	FISH	T		PDF
MUSCATINE	Lake Sturgeon	Acipenser fulvescens	FISH	E		PDF
MUSCATINE	Pirate Perch	Aphredoderus sayanus	FISH	S		PDF
MUSCATINE	Pugnose Minnow	Opsopoeodus emiliae	FISH	S		PDF
MUSCATINE	Weed Shiner	Notropis texanus	FISH	E		PDF
MUSCATINE	Western Sand Darter	Ammocrypta clara	FISH	T		PDF
MUSCATINE	Butterfly	Ellipsaria lineolata	FRESHWATER MUSSELS	T		PDF
MUSCATINE	Creeper	Strophitus undulatus	FRESHWATER MUSSELS	T		PDF
MUSCATINE	Higgin's-eye Pearly Mussel	Lampsilis higginsii	FRESHWATER MUSSELS	E	E	PDF
MUSCATINE	Pistolgrip	Tritogonia verrucosa	FRESHWATER MUSSELS	E		PDF
MUSCATINE	Purple Wartyback	Cyclonaias tuberculata	FRESHWATER MUSSELS	T		PDF
MUSCATINE	Round Pigtoe	Pleurobema sintoxia	FRESHWATER MUSSELS	E		PDF
MUSCATINE	Sheepnose	Plethobasus cyphyus	FRESHWATER MUSSELS	E	C	PDF
MUSCATINE	Spectaclecase	Cumberlandia monodonta	FRESHWATER MUSSELS	E	C	PDF
MUSCATINE	Yellow Sandshell	Lampsilis teres	FRESHWATER MUSSELS	E		PDF
MUSCATINE	Baltimore	Euphydryas phaeton	INSECTS	T		PDF
MUSCATINE	Plains Pocket Mouse	Perognathus flavescens	MAMMALS	E		PDF
MUSCATINE	Southern Bog Lemming	Synaptomys cooperi	MAMMALS	T		PDF
MUSCATINE	Bent Milk-vetch	Astragalus distortus	PLANTS (DICOTS)	S		PDF
MUSCATINE	Black Huckleberry	Gaylussacia baccata	PLANTS (DICOTS)	T		PDF
MUSCATINE	Buckbean	Menyanthes trifoliata	PLANTS (DICOTS)	T		PDF
MUSCATINE	Cleft Phlox	Phlox bifida	PLANTS (DICOTS)	S		PDF
MUSCATINE	Cliff Conobea	Leucospora multifida	PLANTS (DICOTS)	E		PDF

MUSCATINE	Crossleaf Milkwort	Polygala cruciata	PLANTS (DICOTS)	E	PDF
MUSCATINE	Curved-pod Corydalis	Corydalis curvisiliqua ssp grandibracteata	PLANTS (DICOTS)	E	PDF
MUSCATINE	Cutleaf Water-milfoil	Myriophyllum pinnatum	PLANTS (DICOTS)	S	PDF
MUSCATINE	Dwarf Dandelion	Krigia virginica	PLANTS (DICOTS)	E	PDF
MUSCATINE	Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S	PDF
MUSCATINE	Eastern Jointweed	Polygonella articulata	PLANTS (DICOTS)	E	PDF
MUSCATINE	Flax-leaved Aster	Aster linariifolius	PLANTS (DICOTS)	T	PDF
MUSCATINE	Forked Aster	Aster furcatus	PLANTS (DICOTS)	T	PDF
MUSCATINE	Globe Mallow	Malvastrum hispidum	PLANTS (DICOTS)	S	PDF
MUSCATINE	Golden Corydalis	Corydalis aurea	PLANTS (DICOTS)	T	PDF
MUSCATINE	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S	PDF
MUSCATINE	Humped Bladderwort	Utricularia gibba	PLANTS (DICOTS)	S	PDF
MUSCATINE	James Cristatella	Polanisia jamesii	PLANTS (DICOTS)	E	PDF
MUSCATINE	Kitten Tails	Besseya bullii	PLANTS (DICOTS)	T	PDF
MUSCATINE	Lake Cress	Armoracia aquatica	PLANTS (DICOTS)	S	PDF
MUSCATINE	Lance-leaved Violet	Viola lanceolata	PLANTS (DICOTS)	S	PDF
MUSCATINE	Large-leaf White Violet	Viola incognita	PLANTS (DICOTS)	E	PDF
MUSCATINE	Low Hairy Ground-cherry	Physalis pubescens	PLANTS (DICOTS)	S	PDF
MUSCATINE	Marsh Mermaid-weed	Proserpinaca palustris	PLANTS (DICOTS)	S	PDF
MUSCATINE	Meadow Beauty	Rhexia virginica	PLANTS (DICOTS)	T	PDF
MUSCATINE	Missouri Lambsquarters	Chenopodium missouriensis	PLANTS (DICOTS)	S	PDF
MUSCATINE	Orange Grass St. John's Wort	Hypericum gentianoides	PLANTS (DICOTS)	E	PDF
MUSCATINE	Pale False Foxglove	Agalinis skinneriana	PLANTS (DICOTS)	E	PDF
MUSCATINE	Pickering Morning-glory	Stylisma pickeringii	PLANTS (DICOTS)	E	PDF
MUSCATINE	Pink Milkwort	Polygala incarnata	PLANTS (DICOTS)	T	PDF
MUSCATINE	Poppy Mallow	Callirhoe triangulata	PLANTS (DICOTS)	E	PDF
MUSCATINE	Prionopsis	Prionopsis ciliata	PLANTS (DICOTS)	S	PDF
MUSCATINE	Purple Angelica	Angelica atropurpurea	PLANTS (DICOTS)	S	PDF
MUSCATINE	Queen-of-the-prairie	Filipendula rubra	PLANTS (DICOTS)	T	PDF
MUSCATINE	Ragwort	Senecio pseudaureus	PLANTS (DICOTS)	S	PDF
MUSCATINE	Rose Turtlehead	Chelone obliqua	PLANTS (DICOTS)	S	PDF
MUSCATINE	Rough Buttonweed	Diodia teres	PLANTS (DICOTS)	S	PDF
MUSCATINE	Roundleaf Goldenrod	Solidago patula	PLANTS (DICOTS)	E	PDF
MUSCATINE	Roundstem Foxglove	Agalinis gattingeri	PLANTS (DICOTS)	T	PDF
MUSCATINE	Sand Cherry	Prunus pumila	PLANTS (DICOTS)	S	PDF
MUSCATINE	Sand Pigweed	Amaranthus arenicola	PLANTS (DICOTS)	S	PDF
MUSCATINE	Schreber's Aster	Aster schreberi	PLANTS (DICOTS)	E	PDF
MUSCATINE	Slender Copperleaf	Acalypha gracilens	PLANTS (DICOTS)	S	PDF
MUSCATINE	Small Morning	Ipomoea lacunosa	PLANTS (DICOTS)	S	PDF

	Glory					
MUSCATINE	Spring Avens	Geum vernum	PLANTS (DICOTS)	S		PDF
MUSCATINE	Sweet Indian Plantain	Cacalia suaveolens	PLANTS (DICOTS)	T		PDF
MUSCATINE	Toothcup	Rotala ramosior	PLANTS (DICOTS)	S		PDF
MUSCATINE	Violet	Viola macloskeyi	PLANTS (DICOTS)	S		PDF
MUSCATINE	Virginia Snakeroot	Aristolochia serpentaria	PLANTS (DICOTS)	T		PDF
MUSCATINE	Water Shield	Brasenia schreberi	PLANTS (DICOTS)	S		PDF
MUSCATINE	Water Starwort	Callitriche heterophylla	PLANTS (DICOTS)	S		PDF
MUSCATINE	Winged Monkey Flower	Mimulus alatus	PLANTS (DICOTS)	T		PDF
MUSCATINE	Wooly Milkweed	Asclepias lanuginosa	PLANTS (DICOTS)	T		PDF
MUSCATINE	Yellow Monkey Flower	Mimulus glabratus	PLANTS (DICOTS)	T		PDF
MUSCATINE	Blue Mud-plantain	Heteranthera limosa	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Bulrush	Scirpus pedicellatus	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Bur-reed	Sparganium androcladum	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Clandestine Dropseed	Sporobolus clandestinus	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Drooping Bluegrass	Poa languida	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Eastern Prairie Fringed Orchid	Platanthera leucophaea	PLANTS (MONOCOTS)	E	T	PDF
MUSCATINE	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Grass Pink	Calopogon tuberosus	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Grassleaf Rush	Juncus marginatus	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Green Adder's Mouth	Malaxis unifolia	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Hall Bulrush	Scirpus hallii	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Large-leaf Pondweed	Potamogeton amplifolius	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Nuttall Pondweed	Potamogeton epihydrus	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Oval Ladies'-tresses	Spiranthes ovalis	PLANTS (MONOCOTS)	T		PDF
MUSCATINE	Pale Green Orchid	Platanthera flava	PLANTS (MONOCOTS)	E		PDF
MUSCATINE	Purple Fringed Orchid	Platanthera psycodes	PLANTS (MONOCOTS)	T		PDF
MUSCATINE	Purple Spike Rush	Eleocharis atropurpurea	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Sand Bluestem	Andropogon hallii	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Showy Lady's Slipper	Cypripedium reginae	PLANTS (MONOCOTS)	T		PDF
MUSCATINE	Slender Crabgrass	Digitaria filiformis	PLANTS (MONOCOTS)	S		PDF
MUSCATINE	Slender Dayflower	Commelina erecta	PLANTS (MONOCOTS)	T		PDF

MUSCATINE	Slender Fimbry	Fimbristylis autumnalis	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T	PDF
MUSCATINE	Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Small Green Woodland Orchid	Platanthera clavellata	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Soft Rush	Juncus effusus	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Spiral Pondweed	Potamogeton spirillus	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Tall Cotton Grass	Eriophorum angustifolium	PLANTS (MONOCOTS)	S	PDF
MUSCATINE	Yellow-eyed Grass	Xyris torta	PLANTS (MONOCOTS)	E	PDF
MUSCATINE	Cinnamon Fern	Osmunda cinnamomea	PLANTS (PTERIODOPHYTES)	E	PDF
MUSCATINE	Crowfoot Clubmoss	Lycopodium digitatum	PLANTS (PTERIODOPHYTES)	S	PDF
MUSCATINE	Ledge Spikemoss	Selaginella rupestris	PLANTS (PTERIODOPHYTES)	S	PDF
MUSCATINE	Long Beechfern	Thelypteris phegopteris	PLANTS (PTERIODOPHYTES)	E	PDF
MUSCATINE	Meadow Spikemoss	Selaginella eclipes	PLANTS (PTERIODOPHYTES)	E	PDF
MUSCATINE	Northern Adder's-tongue	Ophioglossum pusillum	PLANTS (PTERIODOPHYTES)	S	PDF
MUSCATINE	Royal Fern	Osmunda regalis	PLANTS (PTERIODOPHYTES)	T	PDF
MUSCATINE	Blanding's Turtle	Emydoidea blandingii	REPTILES	T	PDF
MUSCATINE	Bullsnake	Pituophis catenifer sayi	REPTILES	S	PDF
MUSCATINE	Common Musk Turtle	Sternotherus odoratus	REPTILES	T	PDF
MUSCATINE	Copperbelly Water Snake	Nerodia erythrogaster neglecta	REPTILES	E	PDF
MUSCATINE	Massasauga Rattlesnake	Sistrurus catenatus	REPTILES	E	PDF
MUSCATINE	Ornate Box Turtle	Terrapene ornata	REPTILES	T	PDF
MUSCATINE	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S	PDF
MUSCATINE	Yellow Mud Turtle	Kinosternon flavescens	REPTILES	E	PDF

POLK County, IA

Summary by Species Report
Total Unique Listed Species In This County: 32

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
POLK	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
POLK	Barn Owl	Tyto alba	BIRDS	E		PDF
POLK	Henslow's Sparrow	Ammodramus henslowii	BIRDS	T		PDF
POLK	Least Tern	Sterna antillarum	BIRDS	E	E	PDF
POLK	Red-shouldered Hawk	Buteo lineatus	BIRDS	E		PDF
POLK	Blacknose Shiner	Notropis heterolepis	FISH	T		PDF
POLK	Grass Pickerel	Esox americanus	FISH	T		PDF
POLK	Western Sand Darter	Ammocrypta clara	FISH	T		PDF
POLK	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
POLK	Zabulon Skipper	Poanes zabulon	INSECTS	S		PDF
POLK	Plains Pocket Mouse	Perognathus flavescens	MAMMALS	E		PDF
POLK	Spotted Skunk	Spilogale putorius	MAMMALS	E		PDF
POLK	Cliff Conobea	Leucospora multifida	PLANTS (DICOTS)	E		PDF
POLK	Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S		PDF
POLK	False Loosestrife	Ludwigia peploides	PLANTS (DICOTS)	S		PDF
POLK	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
POLK	Pretty Dodder	Cuscuta indecora	PLANTS (DICOTS)	S		PDF
POLK	Raccoon Grape	Ampelopsis cordata	PLANTS (DICOTS)	S		PDF
POLK	Scarlet Hawthorn	Crataegus coccinea	PLANTS (DICOTS)	S		PDF
POLK	Smooth Black-haw	Viburnum prunifolium	PLANTS (DICOTS)	S		PDF
POLK	Toothcup	Rotala ramosior	PLANTS (DICOTS)	S		PDF
POLK	Tunnel-formed Penstemon	Penstemon tubiflorus	PLANTS (DICOTS)	S		PDF
POLK	Waxleaf Meadowrue	Thalictrum revolutum	PLANTS (DICOTS)	E		PDF
POLK	Waxyfruit Hawthorn	Crataegus pruinosa	PLANTS (DICOTS)	S		PDF
POLK	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
POLK	Oval Ladies'-tresses	Spiranthes ovalis	PLANTS (MONOCOTS)	T		PDF
POLK	Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S		PDF
POLK	Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T	PDF
POLK	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
POLK	Bullsnake	Pituophis catenifer sayi	REPTILES	S		PDF
POLK	Ornate Box Turtle	Terrapene ornata	REPTILES	T		PDF
POLK	Slender Glass Lizard	Ophisaurus attenuatus	REPTILES	T		PDF

POTTAWATTAMIE County, IA

Summary by Species Report
Total Unique Listed Species In This County: 27

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
POTTAWATTAMIE	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
POTTAWATTAMIE	Least Tern	Sterna antillarum	BIRDS	E	E	PDF
POTTAWATTAMIE	Piping Plover	Charadrius melodus	BIRDS	E	T	PDF
POTTAWATTAMIE	Pallid Sturgeon	Scaphirhynchus albus	FISH	E	E	PDF
POTTAWATTAMIE	Dusted Skipper	Atrytonopsis hianna	INSECTS	S		PDF
POTTAWATTAMIE	Ottoe Skipper	Hesperia ottoe	INSECTS	S		PDF
POTTAWATTAMIE	Regal Fritillary	Speyeria idalia	INSECTS	S		PDF
POTTAWATTAMIE	Wild Indigo Dusky Wing	Erynnis baptisiae	INSECTS	S		PDF
POTTAWATTAMIE	Least Shrew	Cryptotis parva	MAMMALS	T		PDF
POTTAWATTAMIE	Plains Pocket Mouse	Perognathus flavescens	MAMMALS	E		PDF
POTTAWATTAMIE	Eared Milkweed	Asclepias engelmanniana	PLANTS (DICOTS)	E		PDF
POTTAWATTAMIE	Frost Grape	Vitis vulpina	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Lance-leaf Scurf-pea	Psoralidium lanceolatum	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Narrow-leaved Milkweed	Asclepias stenophylla	PLANTS (DICOTS)	E		PDF
POTTAWATTAMIE	Pretty Dodder	Cuscuta indecora	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Scarlet Globe-mallow	Sphaeralcea coccinea	PLANTS (DICOTS)	T		PDF
POTTAWATTAMIE	Softleaf Arrow-wood	Viburnum molle	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Spreading Yellow Cress	Rorippa sinuata	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Sumpweed	Iva annua	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Ten Petaled Mentzelia	Mentzelia decapetala	PLANTS (DICOTS)	S		PDF
POTTAWATTAMIE	Water Parsnip	Berula erecta	PLANTS (DICOTS)	T		PDF
POTTAWATTAMIE	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
POTTAWATTAMIE	Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T	PDF
POTTAWATTAMIE	Prairie Moonwort	Botrychium campestre	PLANTS (PTERIODOPHYTES)	S		PDF
POTTAWATTAMIE	Great Plains Skink	Eumeces obsoletus	REPTILES	E		PDF
POTTAWATTAMIE	Ornate Box Turtle	Terrapene ornata	REPTILES	T		PDF
POTTAWATTAMIE	Western Worm Snake	Carphophis amoenus	REPTILES	T		PDF

POWESHIEK County, IA

Summary by Species Report
Total Unique Listed Species In This County: 22

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
POWESHIEK	Piping Plover	Charadrius melodus	BIRDS	E	T	PDF
POWESHIEK	Red-shouldered Hawk	Buteo lineatus	BIRDS	E		PDF
POWESHIEK	Dakota Skipper	Hesperia dacotae	INSECTS	E	C	PDF
POWESHIEK	Dusted Skipper	Atrytonopsis hianna	INSECTS	S		PDF
POWESHIEK	Powesheik Skipperling	Oarisma powesheik	INSECTS	T		PDF
POWESHIEK	Indiana Bat	Myotis sodalis	MAMMALS	E	E	PDF
POWESHIEK	Spotted Skunk	Spilogale putorius	MAMMALS	E		PDF
POWESHIEK	Frost Grape	Vitis vulpina	PLANTS (DICOTS)	S		PDF
POWESHIEK	Golden Corydalis	Corydalis aurea	PLANTS (DICOTS)	T		PDF
POWESHIEK	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
POWESHIEK	Larkspur	Delphinium carolinianum	PLANTS (DICOTS)	S		PDF
POWESHIEK	Pink Milkwort	Polygala incarnata	PLANTS (DICOTS)	T		PDF
POWESHIEK	Rough Bedstraw	Galium asprellum	PLANTS (DICOTS)	S		PDF
POWESHIEK	Sessile-leaf Tick-trefoil	Desmodium sessilifolium	PLANTS (DICOTS)	S		PDF
POWESHIEK	Smooth Black-haw	Viburnum prunifolium	PLANTS (DICOTS)	S		PDF
POWESHIEK	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
POWESHIEK	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
POWESHIEK	Large-leaf Pondweed	Potamogeton amplifolius	PLANTS (MONOCOTS)	S		PDF
POWESHIEK	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF
POWESHIEK	Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S		PDF
POWESHIEK	Virginia Spiderwort	Tradescantia virginiana	PLANTS (MONOCOTS)	S		PDF
POWESHIEK	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		PDF

SCOTT County, IA

Summary by Species Report
Total Unique Listed Species In This County: 48

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
SCOTT	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
SCOTT	Grass Pickerel	Esox americanus	FISH	T		PDF
SCOTT	Lake Sturgeon	Acipenser fulvescens	FISH	E		PDF
SCOTT	Butterfly	Ellipsaria lineolata	FRESHWATER MUSSELS	T		PDF
SCOTT	Creeper	Strophitus undulatus	FRESHWATER MUSSELS	T		PDF
SCOTT	Higgin's-eye Pearly Mussel	Lampsilis higginsii	FRESHWATER MUSSELS	E	E	PDF
SCOTT	Pistolgrip	Tritogonia verrucosa	FRESHWATER MUSSELS	E		PDF
SCOTT	Round Pigtoe	Pleurobema sintoxia	FRESHWATER MUSSELS	E		PDF
SCOTT	Sheepnose	Plethobasus cyphyus	FRESHWATER MUSSELS	E	C	PDF
SCOTT	Zebra Swallowtail	Eurytides marcellus	INSECTS	S		PDF
SCOTT	Southern Bog Lemming	Synaptomys cooperi	MAMMALS	T		PDF
SCOTT	American Speedwell	Veronica americana	PLANTS (DICOTS)	S		PDF
SCOTT	Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S		PDF
SCOTT	Globe Mallow	Malvastrum hispidum	PLANTS (DICOTS)	S		PDF
SCOTT	Golden Aster	Heterotheca villosa	PLANTS (DICOTS)	S		PDF
SCOTT	Heart-leaved Plantain	Plantago cordata	PLANTS (DICOTS)	S		PDF
SCOTT	Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S		PDF
SCOTT	Lake Cress	Armoracia aquatica	PLANTS (DICOTS)	S		PDF
SCOTT	Lance-leaved Violet	Viola lanceolata	PLANTS (DICOTS)	S		PDF
SCOTT	Low Hairy Ground-cherry	Physalis pubescens	PLANTS (DICOTS)	S		PDF
SCOTT	Mead's Milkweed	Asclepias meadii	PLANTS (DICOTS)	E	T	PDF
SCOTT	Orange Grass St. John's Wort	Hypericum gentianoides	PLANTS (DICOTS)	E		PDF
SCOTT	Purple Angelica	Angelica atropurpurea	PLANTS (DICOTS)	S		PDF
SCOTT	Rose Turtlehead	Chelone obliqua	PLANTS (DICOTS)	S		PDF
SCOTT	Schreber's Aster	Aster schreberi	PLANTS (DICOTS)	E		PDF
SCOTT	Sweet Indian Plantain	Cacalia suaveolens	PLANTS (DICOTS)	T		PDF
SCOTT	Valerian	Valeriana edulis	PLANTS (DICOTS)	S		PDF
SCOTT	Waterwillow	Decodon verticillatus	PLANTS (DICOTS)	E		PDF
SCOTT	Waxleaf Meadowrue	Thalictrum revolutum	PLANTS (DICOTS)	E		PDF
SCOTT	Bulrush	Scirpus pedicellatus	PLANTS (MONOCOTS)	S		PDF

SCOTT	Drooping Bluegrass	Poa languida	PLANTS (MONOCOTS)	S		PDF
SCOTT	Field Sedge	Carex conoidea	PLANTS (MONOCOTS)	S		PDF
SCOTT	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		PDF
SCOTT	Grassleaf Rush	Juncus marginatus	PLANTS (MONOCOTS)	S		PDF
SCOTT	Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S		PDF
SCOTT	Green's Rush	Juncus greenei	PLANTS (MONOCOTS)	S		PDF
SCOTT	Slender Fimbry	Fimbristylis autumnalis	PLANTS (MONOCOTS)	S		PDF
SCOTT	Slender Ladies'-tresses	Spiranthes lacera	PLANTS (MONOCOTS)	T		PDF
SCOTT	Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S		PDF
SCOTT	Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S		PDF
SCOTT	Tall Cotton Grass	Eriophorum angustifolium	PLANTS (MONOCOTS)	S		PDF
SCOTT	Ledge Spikemoss	Selaginella rupestris	PLANTS (PTERIODOPHYTES)	S		PDF
SCOTT	Northern Adder's-tongue	Ophioglossum pusillum	PLANTS (PTERIODOPHYTES)	S		PDF
SCOTT	Blanding's Turtle	Emydoidea blandingii	REPTILES	T		PDF
SCOTT	Copperbelly Water Snake	Nerodia erythrogaster neglecta	REPTILES	E		PDF
SCOTT	Eastern Massasauga	Sistrurus catenatus catenatus	REPTILES	E	C	PDF
SCOTT	Massasauga Rattlesnake	Sistrurus catenatus	REPTILES	E		PDF
SCOTT	Ornate Box Turtle	Terrapene ornata	REPTILES	T		PDF

Nebraska Threatened & Endangered Species by County
Source: Nebraska GPC – Nebraska Natural Heritage Program (September 2011)

State Status:
FE - Federal Endangered; FT - Federal Threatened; SE – State Endangered; ST – State Threatened

Douglas	American Ginseng	Panax quinquefolium	ST
	Interior Least Tern	Sternula antillarum athalassos	FE, SE
	Lake Sturgeon	Acipenser fulvescens	ST
	Pallid Sturgeon	Scaphirhynchus albus	FE, SE
	Piping Plover	Charadrius melodus	FT, ST
	River Otter	Lutra canadensis	ST
	Sturgeon Chub	Macrhybopsis gelida	SE

APPENDIX O

AGENCY COORDINATION

Past planning documents identified a “Chicago to Omaha” corridor, so for the purposes of this appendix, the corridor reference will remain as previously designated; however, the project name includes “Council Bluffs” in the title.

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From: email@chicagotoomaha.com [mailto:email@chicagotoomaha.com]
Sent: Wednesday, February 15, 2012 12:05 PM
To: janet.vine@dot.iowa.gov; amanda.martin@dot.iowa.gov
Subject: Agency scoping meeting 2/21/12 for the Chicago to Omaha Regional Passenger Rail Planning Study

The Federal Railroad Administration (FRA) and the Iowa Department of Transportation (Iowa DOT) are requesting your participation in a scoping meeting for the Chicago to Omaha Regional Passenger Rail System Planning Study (the Study). A Tier 1 Environmental Impact Statement (EIS) is being prepared for this Study; a Notice of Intent for the Tier 1 EIS will soon be published in the Federal Register. An information packet describing the Study is being prepared and will be mailed to you separately. Attached is a figure showing previously established routes that are the initial route alternatives being considered prior to scoping for the Tier 1 EIS. An agency scoping meeting (information below) has been planned to provide an opportunity for interactive discussion of the Study. Please join us in one of two ways highlighted below:

February 21, 2012
10:00 AM-Noon, Central Standard Time

Online:
Click here to join the meeting:
http://connectnow.acrobat.com/wendythompson159

Call-In Number: 1.866.685.1580
Code: 0009990707

In person:
Iowa DOT West Materials Conference Room
800 Lincoln Way
Ames, IA 50010

Please RSVP at email@chicagotoomaha.com if you plan to participate, and indicate if you will attend online or in person.

The primary purpose of the scoping meeting will be to review information assembled to date and to discuss issues that the reestablishment of passenger rail service from Chicago to Omaha (Proposed Action) may present if implemented. An agenda for the meeting is included below. Public involvement, including scoping, is also being conducted for this Study. Relevant information on the NEPA process and the Study is available on http://www.iowadot.gov/chicagotoomaha.

AGENDA

1. **Introductions**
2. **Study Introduction**

a. Study Background
b. Purpose and Need
c. Project Description
d. Alternatives Screening
e. Resource Methodologies
f. Schedule
g. Agency Input

3. Discussion of Issues

a. Agency Interests and Concerns, and Available Information
b. Online Public Information Meeting

4. Action Items

5. Meeting Conclusion

Subject **Agency scoping underway for the Chicago to Omaha Regional Passenger Rail Planning Study**

From <email@chicagotoomaha.com>

To <Janet.vine@dot.iowa.gov> <amanda.martin@dot.iowa.gov>, <andrea.martin@dot.gov>

Date 04/01/2012 3:09 pm

- C-O Coordination Packet - Figure 1_2012 01 19.pdf (364 KB)
- C-O_Scoping Packet - Project Description Example_2012 02 10_BG.pdf (44 KB)

The Federal Railroad Administration (FRA) and the Iowa Department of Transportation (Iowa DOT) are notifying that they are evaluating alternatives for the reestablishment of passenger rail service from Chicago, Illinois, through Iowa, to Omaha, Nebraska (the Project). The Iowa DOT's evaluation will be documented in the Chicago to Omaha Regional Passenger Rail System Planning Study (the Study) Tier 1 Service Level Environmental Impact Statement (EIS). The Notice of Intent for the Tier 1 Service Level EIS was published in the Federal Register on March 15, 2012. The scoping process is underway and is scheduled through April 16, 2012.

Attached is a description of the Study (which provides background information and identifies the transportation problems that the Project is expected to address), and a figure showing the previously established routes that constitute the Study Area. Public involvement, including scoping, is also being conducted for this Study. Relevant information on the NEPA process and the Study is available on http://www.iowadot.gov/chicagotoomaha. The NOI and the Purpose and Need Statement are both included on the website under "Resources" (http://www.iowadot.gov/chicagotoomaha/resources.html). Public scoping materials can be found at http://chicagotoomaha.com/.

We are soliciting your input on the Study. The aforementioned website will host relevant documents for the Study, with an Alternatives Analysis Report scheduled to be posted before a series of public meetings in May; the website provides additional information on the meetings. Please reply to this e-mail address with any comments. Thank you.

Salutation	F. Name	L. Name	Title	Organization
Iowa Federal Agency Coordination List				
	Glenn	[illegible]		Federal Aviation Administration
	Dick	Hainje	Regional Director	Federal Emergency Management Agency
	[illegible]	[illegible]	Iowa Division Administrator	Federal Highway Administration
	Steven	[illegible]	Deputy Regional Administrator	Federal Railroad Administration
	David	Gregory	Deputy Regional Administrator	Federal Railroad Administration
	[illegible]	[illegible]	Regional Administrator	Federal Railroad Administration
	[illegible]	[illegible]	Planning and Program Development Team Leader	Federal Transit Administration, Region VII
Colonel	Shawn	McGinley	Rock Island District Commander	US Army Corps of Engineers
	Marsha	[illegible]		US Army Corps of Engineers
	Kayla	[illegible]		US Army Corps of Engineers
	[illegible]	Washburn	Commander (DWA)	US Coast Guard
	Richard	[illegible]	State Conservationist	US Department of Agriculture
	Andrew	Boedecker	HUD Regional Office	US Department of Housing and Urban Development
	James	Ryan	Supervisory Project Manager	US Department of Housing and Urban Development
	Robert	Stewart		US Department of Interior
	[illegible]	[illegible]	NEPA	US Environmental Protection Agency
	[illegible]	Chamberlain	Wetlands	US Environmental Protection Agency
	Mike	George	Field Supervisor	US Fish and Wildlife Service
	Richard	Nelson	Project Manager	US Fish and Wildlife Service
	[illegible]	[illegible]	[illegible]	Iowa Department of Natural Resources
	Kelly	[illegible]	Environmental Specialist	Iowa Department of Natural Resources
	Christine	[illegible]		Iowa Department of Natural Resources
	Bryan	Bradley	Liaison Engineer	Iowa Department of Transportation
	Barbara	Mitchell	Deputy SHPO	State Historical Society of Iowa
	Nick	[illegible]	Environmental Coordinator	National Park Service
Other Federal Agency Contacts				
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	[illegible]	Bullock	Chicago District Executive Office	US Army Corps of Engineers
	Marisol	[illegible]	Regional Administrator	Federal Transit Administration, Region V
	Susan	Schalk		Federal Aviation Administration
	Kenneth	[illegible]	Regional Environmental Officer	FEMA, Region V
	Amanda	[illegible]		Federal Emergency Management Agency
	Antonio	[illegible]	Regional Administrator	US Department of Housing and Urban Development
	[illegible]	Bishop	Deputy Regional Administrator	US Department of Housing and Urban Development
Commander	Robert F.	[illegible]	Commanding Officer	US Coast Guard, Ninth District
	[illegible]	Giamanco	State Executive Director	US Department of Agriculture
	Dan	[illegible]	State Executive Director	US Department of Agriculture
	[illegible]	Whitaker	State Executive Director	US Department of Agriculture
	[illegible]	[illegible]	Acting State Conservationist	US Department of Agriculture
	[illegible]	Sams	District Conservationist	US Department of Agriculture
	Mark	Jackson	Coordinator	US Department of Agriculture
	Kenneth	[illegible]	Chief, NEPA Implementation Section	US Environmental Protection Agency
	Peter	[illegible]	Water Division Liaison	US Environmental Protection Agency
	[illegible]	Biggs	Transportation Engineer	US Federal Highway Administration
	Joseph	[illegible]	Division Administrator	US Federal Highway Administration
	Norman	Stoner	Division Administrator	US Department of Transportation Federal Highway Administration
	Kevin	Foerster	Refuge Manager	US Fish & Wildlife Service
	Louise	[illegible]	Field Supervisor	US Fish and Wildlife Service
	Mark	[illegible]	District Conservationist	USDA/NRCS
	Keith	[illegible]	District Conservationist	USDA/NRCS
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	Andrew	[illegible]	Regional Environmental Officer	US Department of Interior
Other Iowa Agency Contacts				
	[illegible]	[illegible]	Executive Director	Iowa Agricultural Development Authority
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	Scott	[illegible]	District 1 Engineer	Iowa Department of Transportation
	[illegible]	Dumdei	District 2 Engineer	Iowa Department of Transportation
	Tony	[illegible]	District 3 Engineer	Iowa Department of Transportation
	[illegible]	Armstrong	District 5 Engineer	Iowa Department of Transportation
	Jim	Schnoebelen	District 6 Engineer	Iowa Department of Transportation
	[illegible]	[illegible]	District 4 Engineer	Iowa Department of Transportation
	[illegible]	[illegible]	Team Leader	Iowa Economic Development Authority
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	Sandra	Simpson		Iowa State Parks Bureau
	[illegible]	Lewis	Board Member	Iowa State Preserves Advisory Board
				Iowa Transportation Commission
	[illegible]	Brinkman		Iowa Department of Public Health
	Charles	Palmer	Director	Iowa Department of Human Services

Illinois Agency Contacts				
	Shane	Kelley	Bureau Chief	Illinois Commerce Commission
	Steve	Chard	Acting Bureau Chief	Illinois Department of Agriculture
	Warren	Goetsch	Bureau Chief	Illinois Department of Agriculture
	William	[illegible]	Director	Illinois Department of Commerce and Economic Opportunity
	Karen	Miller	Section Manager	Illinois Department of Natural Resources
	Gary	[illegible]	Section Manager	Illinois Department of Natural Resources
				Illinois Department of Transportation
				Illinois Department of Transportation
				Illinois Department of Transportation
				Illinois Department of Transportation
	Aaron	Weatherholt	Bureau Chief of Operations	Illinois Department of Transportation
	Scott	[illegible]	Acting Bureau Chief	Illinois Department of Transportation
	Michael	Gandy	Bureau Chief	Illinois Department of Transportation, Bureau of Railroads
	George	Weber	Deputy Director	Illinois Department of Transportation, Bureau of Railroads
	[illegible]	Para		Illinois Division of Aeronautics
	Douglas	Scott	Director	Illinois Environmental Protection Agency
	Anne	Haaker	Deputy SHPO	Illinois Historic Preservation Agency
	Roland	Wilkis		Illinois Institute for Rural Affairs
	Sandy	Folsom	Acting Director	Illinois Nature Preserves Commission
	Andrew	Ross	Deputy Chief of Staff	State of Illinois
	Michelle	Saddler	Secretary	Illinois Department of Human Services
Nebraska Agency Contacts				
	John	Moeschen		US Army Corps of Engineers - Nebraska Regulatory Office
	Craig	Derickson	State Conservationist	US Department of Agriculture, Natural Resources Conservation Service
	Mark	Schenkelberg		US Federal Aviation Administration
	Clifton	Jones		US Department of Housing and Urban Development
	Beth	Freeman		US Department of Homeland Security, FEMA Region 7
	John	Winkler		Papio-Missouri River Natural Resources District
	Paul	Mullen		Metropolitan Area Planning Agency
	Ellis	[illegible]	Rail and Public Transportation Director	Nebraska Department of Roads
	Tim	Weander	District 2	Nebraska Department of Roads
	Joe	[illegible]		Nebraska Department of Environmental Quality
	Ronnie	Mitchell	Director	Nebraska Department of Aeronautics
	Brian	Dunnigan		Nebraska Department of Natural Resources
	Bob	Puschendorf		Nebraska State Historical Society
	Jerry	[illegible]		Nebraska Department of Health and Human Services
	John	Bender	Water Quality Standards Coordinator	Nebraska Department of Environmental Quality
	Joe	Francis	Associate Director	Nebraska Department of Environmental Quality
	Brian	Dunnigan	Director	Nebraska Department of Natural Resources
	Frank	Albrecht	Assistant Division of Administration	Nebraska Game and Parks Commission
	Carey	Grell	Environmental Analyst	Nebraska Game and Parks Commission
	Robert	Puschendorf	Deputy State Historical Preservation Officer	Nebraska State Historical Society
Regional Agency Contacts				
				Central Iowa Regional Transportation Planning Alliance
				Des Moines Area Metropolitan Planning Organization
	Kelley	[illegible]	Executive Director	East Central Intergovernmental Association
	Sharon	Juon	Executive Director	Iowa Northland Regional Council of Governments
	Cliff	Gerdes	Executive Director	MIDAS Council of Governments
				Region 6 Planning Commission
				Region XII Council of Governments
				Southwest Iowa Planning Council
				Siouxland Interstate Metropolitan Planning Council
				Area XV Regional Planning Commission
				Chariton Valley Planning & Development
				Southern Iowa Council of Governments
	[illegible]	[illegible]	Executive Director	Johnson County Council of Governments
	Randall	Blankenhorn	Executive Director	Chicago Metropolitan Agency for Planning (CMAP)
	George	Hardwidge	Deputy Executive of Operations	Metra
	Joseph	Costello	Executive Director	Regional Transportation Authority
				Chicago Transit Authority
				Chicago Region Environmental and Transportation Efficiency Program
	Thomas	Ross	Executive Director	CATS
	Michael	[illegible]	Assistant Vice President	National Railroad Passenger Corporation (Amtrak)
				Chicago Department of Transportation
				Blackhawk Hills Resource Conservation and Development District
				Tri-County Regional Planning Commission
				North Central Illinois Council of Governments
				Western Illinois Regional Council
Iowa County Conservation Districts				
				Adair

				Adams
				Benton
				Black Hawk
				Boone
				Buchanan
				Butler
				Calhoun
				Carroll
				Cass
				Cedar
				Clarke
				Clinton
				Crawford
				Dallas
				Delaware
				Des Moines
				Dubuque
				Franklin
				Grundy
				Guthrie
				Hamilton
				Hardin
				Harrison
				Henry
				Iowa
				Jackson
				Jasper
				Jefferson
				Johnson
				Jones
				Linn
				Lucas
				Madison
				Marshall
				Mills
				Monroe
				Montgomery
				Muscatine
				Polk
				Pottawattamie
				Poweshiek
				Sac
				Scott
				Shelby
				Story
				Tama
				Union
				Wapello
				Webster

Other Local Agencies

	Pamela	Horwitz		Big Bureau Creek Watershed
	Mark	Miller	Director	Bureau County
	Ralph	Mahler	[illegible]	Grundy County
	Mike	Schaefer	Director	Grundy County
	John	Olsen	Assistant Director	Henry County
	Douglas	Peterson	Director	Henry County
	Elizabeth	Hagan Mueller	Administrative Coordinator	Kane County
	Pat	Hogan	Director	Kendall County
	Jason	Petit	Director	Kendall County
	JoAnn	Adams	Director	LaSalle County
	[illegible]	[illegible]	Director	LaSalle County
	Paul	Burns	Director	Lee County
	Jeff	[illegible]	Director	Rock Island County
	Brian	Parkinson	Director	Rock Island County
	Ken	[illegible]	Director	Whiteside County
	Suzanne	Malec McKenna	Acting Commissioner	City of Chicago
	Steven	[illegible]	General Superintendent	Cook County Forest Preserve District
				Forest Preserve District of DuPage County
				Forest Preserve District of Will County
	Monica A.	Meyers	Executive Director	Forest Preserve District of Kane County
				Lake County Forest Preserves
	Terry	Hannan	Superintendent	DeKalb County Forest Preserves
				Winnebago County Forest Preserve District
				Byron Forest Preserve District

STUDY DESCRIPTION

The Iowa Department of Transportation (DOT), in conjunction with the Federal Railroad Administration (FRA), is evaluating alternatives for the reestablishment of intercity passenger rail service from Chicago, Illinois, through Iowa, to Omaha, Nebraska (the Project). FRA and Iowa DOT's evaluation will be documented in the Chicago to Omaha Regional Passenger Rail System Planning Study (the Study) Tier 1 Service Level Environmental Impact Statement (EIS). The Tier 1 EIS will analyze a range of reasonable corridor-level route alternatives between Chicago and Omaha for a conventional locomotive-hauled, passenger train service, operating on track used jointly with freight trains, at an initial maximum speed of 79 to 90 miles per hour (mph). The Study will examine necessary improvements to support additional passenger trains. FRA and Iowa DOT will consider increasing the frequency of passenger rail service as well as increasing the currently planned maximum speed of such service in the Chicago to Omaha corridor (the Corridor). The need for the Project stems from the increasing travel demand resulting from population growth and changing demographics along the Corridor as well as the need for competitive and attractive modes of travel.

An EIS is a National Environmental Policy Act of 1969 (NEPA) document that is required in the preliminary stages of the planning process for all major Federal actions significantly affecting the quality of the environment. The EIS is a written record of the analysis of potential impacts on the environment resulting from construction and operation of the Project. Impacts on both the natural and socioeconomic environment are evaluated.

FRA and Iowa DOT will use a tiered process, outlined in Chapter 40 of the Code of Federal Register (40 CFR Section 1508.28 and in accordance with FRA guidance), in the completion of the environmental review of the Project ''Tiering'' is a staged process applied to environmental reviews for complex projects. The Tier 1 EIS will address broad corridor-level issues and alternatives. The Tier 1 EIS is a service-level NEPA analysis that will address the broader questions relating to the type of service being proposed (including cities and stations served, route alternatives, service levels, ridership projections, and major infrastructure components), and the associated transportation and environmental impacts.

The Tier 1 EIS will be developed in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1500 et seq.) implementing NEPA (42 USC 4321 et seq.) and FRA's Procedures for Considering Environmental Impacts (64 FR 28545; May 26, 1999). In addition to NEPA, the analysis will be undertaken consistent with Section 106 of the National Historic Preservation Act, the Endangered Species Act, Clean Air Act, Clean Water Act, Section 4(f) of the Department of Transportation Act of 1966, and Iowa DOT guidance, along with other applicable Federal, state, and local regulations in the level of detail appropriate for a Tier 1 EIS.

The Chicago to Omaha corridor extends from Chicago Union Station, in downtown Chicago, on the east to a terminal in Omaha on the west. The Study Area consists of the five previously established passenger rail routes between Chicago and Omaha that pass through the states of Illinois and Iowa. Each route is approximately 500 miles long. In Illinois, the Study Area runs generally west from Chicago Union Station, which is the hub for the Midwest Regional Rail Initiative (MWRRI), to the Mississippi River and, depending on the route, is a distance of between 150 and 250 miles. In Iowa, the Study Area runs west from the Mississippi River across the entire state to the Missouri River, a distance of approximately 300 miles. In Nebraska, the Study Area terminates in Omaha, which is located at the Missouri River, the eastern border of the state. The general location for the terminal in Omaha will be identified as part of this Study.

Figure 1 shows the location of Chicago and Omaha and different rail routes between the two cities.

The five previously established passenger rail routes that compose the Study Area include the former Illinois Central route (Route 1), the former Chicago & North Western route (Route 2), the former Milwaukee Road route (Route 3), the former Rock Island route (Route 4), and the former Burlington route (Route 5), as shown in Figure 1. These routes are numbered from north to south. For each route, the counties that are traversed in Illinois, Iowa, and Nebraska are listed east to west in Table 1.

Table 1. Counties Traversed by Routes in the Study Area

State	Route 1	Route 2	Route 3	Route 4	Route 5
Illinois	Cook DuPage Kane DeKalb Boone Winnebago Stephenson Jo Daviess	Cook DuPage Kane DeKalb Ogle Lee Whiteside	Cook DuPage Kane DeKalb Ogle Carroll	Cook Will Grundy La Salle Bureau Henry Rock Island	Cook DuPage Kane Kendall DeKalb La Salle Bureau Henry Knox Warren Henderson
Iowa	Dubuque Delaware Buchanan Black Hawk Butler Franklin Hardin Hamilton Webster Calhoun Sac Crawford Harrison Pottawattamie	Clinton Cedar Linn Benton Tama Marshall Story Boone Greene Carroll Crawford Harrison Pottawattamie	Jackson Clinton Jones Linn Benton Tama Marshall Story Boone Dallas Guthrie Carroll Crawford Shelby Harrison Pottawattamie	Scott Muscatine Cedar Johnson Iowa Poweshiek Jasper Polk Dallas Madison Guthrie Adair Cass Pottawattamie	Des Moines Henry Jefferson Wapello Monroe Lucas Clarke Union Adams Montgomery Mills Pottawattamie
Nebraska	Douglas	Douglas	Douglas	Douglas	Douglas

These previously established routes will be screened to determine which route alternatives would be evaluated in detail in the Tier 1 EIS. Geographic information system data on environmental resources will be used to help screen route alternatives; no field studies are planned for the Tier 1 NEPA process. It is anticipated that the Tier 1 EIS will examine the viability of one or more reasonable and feasible route alternatives.

The No-Build Alternative will represent no action and will be used as a baseline for comparison to all other route alternatives. The No-Build Alternative represents other transportation modes, such as automobile, intercity bus, air travel, and existing rail, and the physical characteristics and capacities as they exist at the time of the Tier 1 EIS, as well as planned and funded improvements that will be in place at the time the proposed improvements would become operational.

Future Tier 2 NEPA evaluation(s) will address one or more specific sections of the Corridor to be implemented within the route alternative selected in the Tier 1 EIS, and will incorporate by reference the data and evaluations included in the Tier 1 EIS. The Tier 2 NEPA evaluations will concentrate on the resource-specific issues relevant to the section of the selected route alternative identified in the Tier 1 EIS, and identify the environmental consequences and measures necessary to mitigate environmental impacts at a site-specific level of detail.

ANTICIPATED IMPACTS

A wide spectrum of resources will be evaluated in the Tier 1 EIS, including (but not limited to) cultural resources, natural resources, impacts to homes and businesses, socioeconomic resources, noise and vibration, and air quality. Impacts may vary depending on the elements of the final design.

DEVELOPMENT PROCEDURES

This Project is being developed for Federal funding participation. A determination by Iowa DOT and FRA has identified this Study as requiring preparation of an EIS.

Current regulations governing development of Federally funded railroad improvements require early coordination with units of government that may have interests in the Proposed Action or its potential impacts. This coordination packet is intended to provide early notification of the Study for the Project and to solicit comments regarding the potential impacts of such an action. Several Federal, state, and local agencies will also be contacted directly to request their early input as part of the Study impact identification process.

Public involvement, including scoping, is also being conducted for this Study. Relevant information on the NEPA process and the Study is available on http://www.iowadot.gov/chicagotoomaha.

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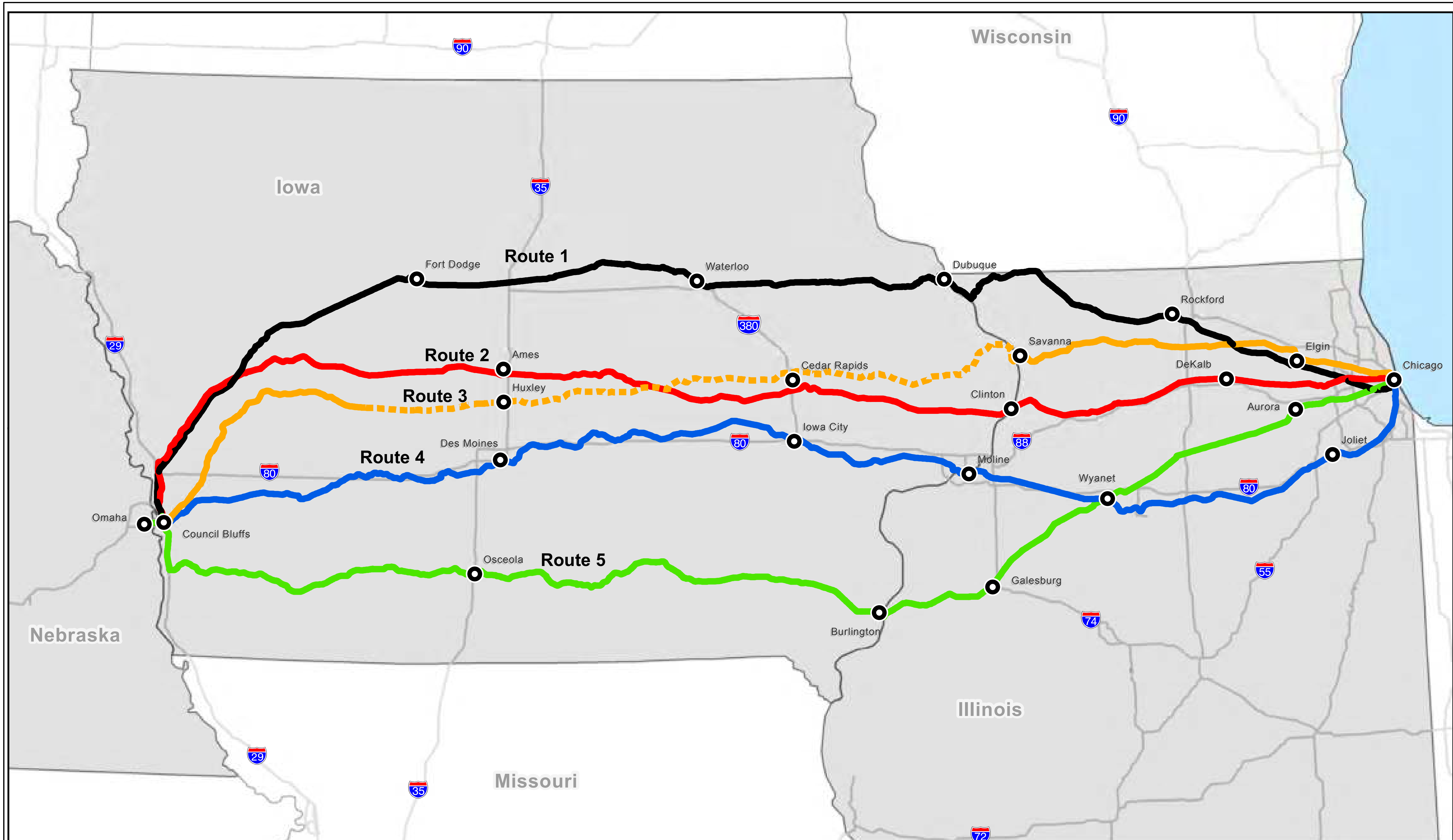

Legend

- Route 1 (Canadian National Railway, former Illinois Central)
- Route 2 (Union Pacific Railroad, former Chicago & North Western)
- Route 3 (Canadian Pacific Railway and BNSF Railway, former Milwaukee Road)
- Route 3 Abandoned Portion
- Route 4 (Iowa Interstate Railroad and CSX Transportation, former Rock Island)
- Route 5 (BNSF Railway, former Chicago, Burlington & Quincy)

0 12.5 25 50 Miles

Scale

Iowa Department of Transportation

Iowa Connections

Get on Board

Chicago to Omaha Routes

Chicago to Omaha
Regional Passenger Rail System Planning Study

DATE
January 2012

FIGURE
1

Chicago to Omaha

Regional Passenger Rail System
Planning Study

Meeting Notes

Subject:	Agency Scoping Meeting
Meeting Date: 2/21/12	Meeting Location: Ames, Iowa
Notes by:	HDR

Attendees:

In-person attendees: Andréa Martin (FRA Project Manager), Amanda Martin (Iowa DOT Project Manager), Janet Vine (Iowa DOT NEPA Manager), Phil Meraz (Iowa DOT), Jim Armstrong (Iowa DOT District 5 Engineer), Dylan Mullenix (Des Moines MPO), Will Sharp (HDR Project Manager), John Morton (HDR NEPA Manager), Kelly Farrell (HDR), Tim Flagler (HNTB), and Caron Kloser (HNTB).

On-line attendees: David Studt (USCG), Joe Cothern (EPA), Kip Strauss and Gretchen Ivy (HNTB), Julie Ward (NDEQ), Mark Bechtel (FTA), Brian Goss (HDR).

Topics Discussed:

The meeting commenced at approximately 10:10 am to discuss agency scoping for the Chicago to Omaha Regional Passenger Rail System Planning Study. In-person and on-line attendees introduced themselves. The meeting notes below are organized by a summary of the PowerPoint presentation, followed by questions generated, and the answers provided.

Action/Notes:

Amanda Martin led off the meeting indicating that Iowa DOT received Federal funding in 2009 to start the study, but the effort has been on hold until some things came in to place. The delay of the project being obligated and other factors has led to the need for an aggressive schedule. Andréa Martin noted she was representing FRA as the lead federal agency of the study, and that she is looking forward to working with Iowa DOT and Illinois DOT on the study, and moving ahead with the project. John Morton of HDR introduced the agenda slide of the PowerPoint presentation shown at the meeting in Ames, as well as via the Adobe Connect web link, and indicated that the agenda (provided to the agencies via the notification e-mail) would be followed for the presentation.

John Morton indicated that the Chicago to Omaha Regional Passenger Rail System Planning Study is part of an FRA Track 3 Application for a Planning Grant. FRA is funding half of the study with Iowa funding the remainder. There will be several decisions documented by the study including a preferred route alternative and identification of cities with station stops, speed of trains, and frequency of service. The project is part of the Midwest Regional Rail Initiative (MWRRI), with Chicago as the hub. The study is a Service Level analysis, with a broad, high-level approach to the evaluation of potential route alternatives. A Tier 1 EIS will be prepared, and will identify future Project Level Tier 2 NEPA studies. The Tier 1 Service Level Draft EIS will be distributed for agency and public comment, and comments will be used to prepare a Tier 1 Service Level Final EIS.

The purpose of the project is to provide competitive passenger rail transportation between Chicago and Omaha to help meet future travel demands in the study area. Project needs include increased travel demand from population growth and changing demographics, and an alternative competitive travel mode. The purpose and need statement for scoping is on the public website established for the project, and was provided to agency respondents to the e-mail on the agency scoping meeting.

The major project tasks for this study include the NEPA process, including alternatives analysis, a service development plan, and conceptual engineering. These processes are ongoing concurrently, with the tasks feeding into each other. The study is starting with evaluation of the five previously established routes that connected Chicago to Omaha: a map of the five routes being considered was displayed and identified routes by numbers 1 through 5: 1 is the CN route, 2 is the UP route, 3 is the former Milwaukee Road route, 4 is the Iowa Interstate route, and 5 is the BNSF route, currently used by the California Zephyr (a daily Amtrak train between Chicago, Illinois and Emeryville, California).

The NEPA task is ongoing with GIS data compilation for evaluation of the route alternatives. The NEPA evaluation will be based on corridor-level impact assessment rather than design footprint related assessment. Corridor decisions will be made in Tier 1, but no infrastructure design will be developed until the Tier 2 project level. Noise, vibration, and air quality are among those resources that will be evaluated and will be based on estimated operational data. General station locations will be defined during Tier 1, but no specific locations will be identified. The Tier 1 EIS will evaluate speeds of 79, 90, and 110 mph service (and consider the relationship between speed, ridership, and revenue), and identify the preferred route alternative. A reasonable cost estimate will be developed for the preferred alternative. All of the study outcomes identified (Tier 1 EIS, preferred route alternative, service development plan, and conceptual engineering) are needed for getting FRA implementation funding in the future.

The Alternatives Analysis Task is ongoing and involves two levels of screening, coarse level (done at a high-level) and fine level, that both use four main categories of evaluation criteria: purpose and need, environmental feasibility, technical feasibility, and economic feasibility. Factors being reviewed include, but are not limited to, right-of-way (ROW) availability, population served, environmental resources, and route length. Fine level screening gets into more detail on the four criteria and their application to the remaining alternatives that pass through the coarse level screening step. Fine level screening will involve a ridership evaluation, more detailed characterization of the environment, ridership and revenue potential, and operating, equipment, and maintenance costs. A screen shot of a typical environmental constraints map review within GIS was shown and was considered during the Tier 1 Service Level EA for the Chicago to Iowa City project. The coarse level and fine level steps will be documented in a Draft Alternatives Analysis Report. This report will be available for agency and public input in the spring 2012 timeframe. Information will be available on-line and also be the topic of public meetings. The input received will be used to finalize the report, and identify one or more specific route alternatives to be evaluated in the Tier 1 EIS.

Tim Flagler discussed the Tier 1 EIS approach for environmental resources. Resource impact methodologies are being developed and will be documented in technical memoranda for each resource. Each memorandum will address the regulatory framework for the resource, data gathered for use in the analysis and compiled into a geographic information system (GIS), description of the resource, and an assessment of high level impact analysis along one or more specific route alternatives remaining after the fine level screening process. Typically, a resource study area is about 500 feet on either side of rail centerline along a route alternative. Potential impacts will be quantified for some resources (by number rather than a specific area) and will be qualified for other resources. Potential mitigation approaches will be characterized, but specific mitigation would be addressed during Tier 2 Project Level NEPA analysis. Technical memoranda will be used for input on resources within sections of Chapter 3 (Affected Environment and Environmental Consequences) of the Tier 1 EIS.

John Morton introduced the schedule, indicating that the study is in the public and agency scoping process stage now, with an on-line open scoping meeting process. The Notice of Intent (NOI) to prepare an EIS has been drafted. Andrea Martin indicated that the NOI will be published in a few weeks. Scoping will continue 30 days after the NOI is published. Public information meetings will be held in spring 2012 for evaluating the range of alternatives, the process for reviewing the alternatives, and on the route alternative(s) to be carried forward in the Tier 1 Service Level EIS. The Draft Tier 1 Service Level EIS is planned to be available for review this fall (with a public hearing), and the Final EIS in winter, followed by the Record of Decision. Future Tier 2 Project Level NEPA documents would address details of the proposed improvements along the preferred route alternative.

Since project inception, the purpose and need has been drafted (and has been sent to responding agencies and is on the public website); public scoping is ongoing using a live public website; initial railroad coordination has been completed; and resource impact methodology, alternatives assessment methodology, and annotated outline for the Tier 1 Service Level EIS have been drafted. An agency and stakeholder involvement plan has been developed, and coarse level screening is occurring. This is the first agency scoping meeting and a second meeting will be held in Chicago, Illinois tomorrow.

We are seeking agency input to guide study by providing comments on the purpose and need, alternatives process, and resource methodologies. FRA and Iowa DOT are also seeking identification of agency issues of concern and resource information.

John Morton indicated that the public involvement process is ongoing. E-mails to agencies included a link that provides access to the public involvement website. Active public input was discussed noting the number of visitors to the website, those that left comments, and those that requested being placed on a mailing list. There have been several articles in local and regional newspapers and television stations, and there have been paid newspaper advertisements with information on the project. Interested parties can participate through electronic media or phone to request information.

Comments/Responses:

The floor was opened to agency input, and the following is a brief summary of the questions/comments and responses: responses and follow-up interaction on the topic are indented below the question/comment.

David Studt: How is the study looking at major bridges along these routes?

> John Morton: The study will identify major structures that might need to be built or rehabilitated, especially those for Mississippi River and Missouri River crossings; these are important cost items. For example, the Iowa Interstate route crosses the Mississippi River on the Arsenal Bridge, and the Union Pacific is building a new bridge at Clinton Iowa. The Study would look at the 5 routes and specifically river crossing locations to determine the gross needs for expansion, reconstruction, or replacement.

David Studt: What about the Iowa City to Chicago project which was proposed to use the Arsenal Bridge crossing?

> Amanda Martin: For that project, the Iowa legislature did not approve the necessary state match funds during last year's legislative session. The Chicago to Iowa City Project was consequently split into two phases. Chicago to Moline (IL) has state funding and NEPA is ongoing under Illinois DOT direction. The Moline to Iowa City phase will be managed by Iowa DOT, but state match in funding will need to be allocated to progress. The completion of this project will determine the next steps for the Moline to Iowa City phase. Relevant data for the Chicago to Iowa City Project will be used for this Project.

Joe Cothern: Joe is representing US EPA Region 7 and will lead the US EPA effort, but will be consulting with Norm West in Region 5 (which includes Illinois in their region). US EPA will provide a scoping letter on this project with input based on other rail projects, such as lessons learned. US EPA has a comprehensive GIS on environmental resources that can be accessed. He asked whether US EPA would be offered participation as a cooperating agency. They typically have an added response if a letter requests input as a cooperating agency.

> Andréa Martin: FRA will likely have requests for cooperating agencies going out in early March.
>
> Joe Cothern: Good input for US EPA consideration would include any information from public scoping that is asking for US EPA's input on resources of concern.

John Morton: Although we didn't talk much about Nebraska, the western terminus is in Omaha. Big decisions need to be made on where to cross the Missouri River; much of that work will be deferred until Tier 2.

Julie Ward: Let us know how NDEQ can help.

David Studt: Will Draft EIS be available this fall or next fall?

> John Morton: The Draft EIS is planned for distribution this fall in 2012; the overall Tier 1 Service Level NEPA process is planned to be completed before fall 2013. Final EIS is planned to be distributed early spring 2013.

Dylan Mullenix: If anything is needed by local governments, let us know if you need help.

Mark Bechtel: FTA is involved in several intermodal projects in the Midwest. FTA is working with Dubuque, Iowa and Moline, Illinois considering a bus hub and a rail platform. Do cities compete to be on route? Will there be spokes of rail from the City centers along passenger rail to other communities?

> Andréa Martin: The project in Moline is currently under the Chicago to Moline Tier 2 project level effort being led by Illinois; this is a different project but this section of rail does fall within one of the route alternatives.

> Andréa Martin: The Chicago to Moline project is an IL DOT-led project. A NEPA Tier 2 Project is ongoing that will address the specific location of the platform and its design characteristics. There will be a conference call next week on the next steps for that project.

> Mark Bechtel: To build the rail platform in Dubuque, funding will need to be procured through FRA or TIGER.

> Amanda Martin: There will be a conference call with FRA and Iowa DOT on Dubuque next week. The City will probably be moving forward with a TIGER application. [The City of Dubuque told us on 2/22 that they will not be moving forward with a TIGER application.] Illinois DOT is moving forward with a Chicago to Dubuque route.

> Mark Bechtel: Dee Phan is an environmental specialist and will be involved in FTA input on the NEPA study.

> John Morton: The Study has involved communication with many communities in Iowa and Illinois, but is not designed to promote competition between cities. Moline is along the Iowa Interstate route, and Dubuque is along the CN route. The Study will identify stations only along the routes carried forward for detailed evaluation in the EIS. Cities aren't directly competing with each other. The Tier 1 Analysis will focus on the alternative route corridor, without getting into detail at tie-in points. For example, all route alternatives are proposed for crossing into Nebraska as the western terminus, but specifics of that crossing will not be known during Tier 1; most of specificity will be addressed during Tier 2.

> Mark Bechtel: The developments with rail opportunities are exciting, and Dubuque and Moline are both planning ahead.

> John Morton: Illinois DOT plans to use state funds for an intercity passenger rail line between Chicago and Dubuque. Federal funds are planned for Chicago to Moline. Both of those projects would be based on conventional speeds (up to 79 mph), but the Chicago to Omaha study will look at speeds of 79, 90, and 110 mph and evaluate what the speed differences might do for revenue and ridership.

Mark Bechtel: Will PowerPoint be available on website?

> Amanda Martin: The PowerPoint will be sent to the attendees of the scoping meeting. There appears to be a need for clearly explaining the interrelationships of the different projects in the EIS as well as to the public.

John Morton: The project website for the public will be updated with information on different projects to differentiate them. At this stage of the Chicago to Omaha project, probably will primarily identify cities that could be directly served by different routes.

Kelly Farrell: The Tier 1 EIS will have a section with a discussion on other projects.

Dylan Mullenix: There was mention that the coarse analysis would look at population. Will there be a comparison with highway traffic or would that be in subsequent evaluations?

> John Morton: Overall purpose and need will address ridership through comparison of competitive mode. Currently, 97% of the traffic between Chicago and Omaha is via passenger automobile for an 8-hour trip. Modal review of ridership will be part of the coarse level and fine level analysis. The study will look at populations along each corridor, evaluate modal opportunities, and review potential populations to be served. The configuration of how the system would work, accounting for highway traffic, would be addressed during Tier 2.

Caron Kloser: Will the NEPA process address an implementation plan due to funding not being all available at one time?

> John Morton: FRA has asked to define how the service could be implemented. It is most likely that full funding would not be available, but smaller amounts of funding should be available to phase in segments. The Tier 1 EIS will have an implementation section to show how reasonable investment can partially meet goals and be used before future improvements can be funded.

Kelly Farrell and Amanda Martin discussed and showed components of the public website, and showed agencies the basic method of operating and viewing the website. The method for downloading PDFs was demonstrated. The website was recommended for internal agency use, and to provide access to others.

Action Items:

- FRA will send out Cooperating Agency letters after the NOI is published. [letters were sent]
- Iowa DOT will put NOI on website once it is published. [NOI link placed on website]
- Iowa DOT will note scoping meeting end date on website. [scoping end date noted on website]
- Iowa DOT will send PowerPoint to group of attendees. [PowerPoint was sent to attendees]
- Iowa DOT will supplement the website with information to help clarify and differentiate various rail passenger projects. [website was supplemented with additional information]

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Chicago to Omaha
Regional Passenger Rail System Planning Study

Meeting: Ames Agency Scoping Date: 2/21/12

	Name	Organization	Address	City, State & Zip	Email
1.	Kelly Farrell	HDR	8404 Indian Hills Dr	Omaha, NE 68114	Kelly.Farrell@hdrinc.com
2.	Tim Flagler	HNTB	715 Kirk Dr.	Kansas City, MO 64105	tflagler@hntb.com
3.	Caron Kloser	"	11414 W Park Place, Suite 300	Milwaukee, WI 53224	ckloser@hntb.com
4.	Dylan Mullenix	Des Moines Area MPO	420 Watson Powell, Jr. Pkwy, Suite 200	Des Moines, IA 50309	dmullenix@dmampo.org
5.	Andréa Martin	FRA	1200 NJ AVE SE WASHINGTON DC	20590	andrea.martin@dot.gov
6.	Jim Armstrong	Iowa DOT 05	307 West Briggs, Fairfield, IA 52556		james.armstrong@dot.iowa.gov
7.	Janet Vine	IA DOT	800 Lincoln Way, Ames, IA 50010	→	janet.vine@dot.iowa.gov
8.	PHIL MERAZ	IA DOT	" "	"	phillip.meraz@dot.iowa.gov
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Chicago to Omaha

Regional Passenger Rail System
Planning Study

Meeting Notes

Subject:	Agency Scoping Meeting
Meeting Date: 2/22/12	Meeting Location: Chicago, Illinois
Notes by:	HDR

Attendees:

In-person attendees included: Andréa Martin (FRA Project Manager), Michael Garcia (Illinois DOT), Todd Popish (Illinois DOT), Norm West (USEPA), Shawn Cirton (USFWS), Frank Shockey (FEMA), John Morton (HDR NEPA Manager), Janice Reid (HDR), Angela Brazzale (HDR).

On-line attendees: Amanda Martin (Iowa DOT Project Manager), Janet Vine (Iowa DOT NEPA Manager), Walt Zyznieuski (Illinois DOT), Tim Flagler (HNTB), Gretchen Ivy (HNTB), Kelly Farrell (HDR), Brian Goss (HDR).

Topics Discussed:

The meeting commenced at approximately 1:00 pm to discuss agency scoping for the Chicago to Omaha Regional Passenger Rail System Planning Study. In-person and on-line attendees introduced themselves. The meeting notes below are organized by a summary of the PowerPoint presentation, followed by questions generated, and the answers provided. Although much of the question and answer process occurred during the presentation portion of the meeting, the flow of the presentation summary would have been disrupted by including them when they occurred; consequently the meeting summary is not in precise chronologic order.

Action/Notes:

Amanda Martin led off the meeting indicating that Iowa DOT received Federal funding in 2009 to start the study, but the effort has been on hold until some things came in to place. The delay of the project being obligated and other factors has led to the need for an aggressive schedule. Andréa Martin noted she was representing FRA as the lead federal agency of the study, and that she is looking forward to working with Iowa DOT and Illinois DOT on the study, and moving ahead with the project. John Morton of HDR introduced the agenda slide of the PowerPoint presentation shown at the meeting in Chicago, as well as via the Adobe Connect web link, and indicated that the agenda (provided to the agencies via the notification e-mail) would be followed for the presentation.

John Morton indicated that the Chicago to Omaha Regional Passenger Rail System Planning Study is part of an FRA Track 3 Application for a Planning Grant. FRA is funding half of the study with Iowa funding the remainder. There will be several decisions documented by the study including a preferred route alternative and identification of cities with station stops, speed of trains and frequency of service. The project is part of the Midwest Regional Rail Initiative (MWRRI), with Chicago as the hub. The study is a Service Level analysis, with a broad, high-level approach to the evaluation of potential route alternatives. A Tier 1 EIS will be prepared, and will identify future Project Level Tier 2 NEPA studies. The Tier 1 Service Level Draft EIS will be distributed for agency and public comment, and comments will be used to prepare a Tier 1 Service Level Final EIS.

The purpose of the project is to provide competitive passenger rail transportation between Chicago and Omaha to help meet future travel demands in the study area. Project needs include increased travel demand from population growth and changing demographics, and an alternative competitive travel mode. The purpose and need statement for scoping is on the public website established for the project, and was provided to agency respondents to the e-mail on the agency scoping meeting.

The major project tasks for this study include the NEPA process, including alternatives analysis, a service development plan, and conceptual engineering. These processes are ongoing concurrently, with the tasks feeding into each other. The study is starting with evaluation of the five previously established routes that connected Chicago to Omaha: a map of the five routes being considered was displayed and identified routes by numbers 1 through 5: 1 is the CN route, 2 is the UP route, 3 is the former Milwaukee Road route, 4 is the Iowa Interstate route, and 5 is the BNSF route, currently used by the California Zephyr (a daily Amtrak train between Chicago, Illinois and Emeryville, California).

The NEPA task is ongoing with GIS data compilation for evaluation of the route alternatives. The NEPA evaluation will be based on corridor-level impact assessment rather than design footprint related assessment. Corridor decisions will be made in Tier 1, but no infrastructure design will be developed until the Tier 2 project level. Noise, vibration, and air quality are among those resources that will be evaluated and will be based on estimated operational data. General station locations will be defined during Tier 1, but no specific locations will be identified. The Tier 1 EIS will evaluate speeds of 79, 90, and 110 mph service (and consider the relationship between speed, ridership, and revenue), and identify the preferred route alternative. A reasonable cost estimate will be developed for the preferred alternative. All of the study outcomes identified (Tier 1 EIS, preferred route alternative, service development plan, and conceptual engineering) are needed for getting FRA implementation funding in the future.

The Alternatives Analysis Task is ongoing and involves two levels of screening, coarse level (done at a high-level) and fine level, that both use four main categories of evaluation criteria: purpose and need, environmental feasibility, technical feasibility, and economic feasibility. Factors being reviewed include, but are not limited to, right-of-way (ROW) availability, population served, environmental resources, and route length. Fine level screening gets into more detail on the four criteria and their application to the remaining alternatives that pass through the coarse level screening step. Fine level screening will involve a ridership evaluation, more detailed characterization of the environment, ridership and revenue potential, and operating, equipment, and maintenance costs. A screen shot of a typical environmental constraints map review within GIS was shown and was considered during the Tier Service Level 1 EA for the Chicago to Iowa City project. The coarse level and fine level steps will be documented in a Draft Alternatives Analysis Report. This report will be available for agency and public input in the spring 2012 timeframe. Information will be available on-line and also be the topic of public meetings. The input received will be used to finalize the report, and identify one or more specific route alternatives to be evaluated in the Tier 1 EIS.

Tim Flagler discussed the Tier 1 EIS approach for environmental resources. Resource impact methodologies are being developed and will be documented in technical memoranda for each resource. Each memorandum will address the regulatory framework for the resource, data gathered for use in the analysis and compiled into a geographic information system (GIS), description of the resource, and an assessment of high level impact analysis along one or more specific route alternatives remaining after the fine level screening process. Typically, a resource study area is about 500 feet on either side of rail centerline along a route alternative. Potential impacts will be quantified for some resources (by number rather than a specific area) and will be qualified for other resources. Potential mitigation approaches will be characterized, but specific mitigation would be addressed during Tier 2 Project Level NEPA analysis. Technical memoranda will be used for input on resources within sections of Chapter 3 (Affected Environment and Environmental Consequences) of the Tier 1 EIS.

John Morton introduced the schedule, indicating that the study is in the public and agency scoping process stage now, with an online open scoping meeting process. The Notice of Intent (NOI) to prepare an EIS has been drafted. Andréa Martin indicated that the NOI will be published in a few weeks. Scoping will continue 30 days after the NOI is published. Public information meetings will be held in spring 2012 for evaluating the range of alternatives, the process for reviewing the alternatives, and on the route alternative(s) to be carried forward in the Tier 1 Service Level EIS. The Draft Tier 1 Service Level EIS is planned to be available for review this fall (with a public hearing), and the Final EIS in winter, followed by the Record of Decision. Future Tier 2 Project Level NEPA documents would address details of the proposed improvements along the preferred route alternative.

Since project inception, the purpose and need has been drafted (and has been sent to responding agencies and is on the public website); public scoping is ongoing using a live public website; initial railroad coordination has been completed; and resource impact methodology, alternatives assessment methodology, and annotated outline for the Tier 1 Service Level EIS have been drafted. An agency and stakeholder involvement plan has been developed, and coarse level screening is occurring. The first agency scoping meeting was held yesterday in Ames, Iowa.

We are seeking agency input to guide study by providing comments on the purpose and need, alternatives process, and resource methodologies. FRA and Iowa DOT are also seeking identification of agency issues of concern and resource information.

John Morton indicated that the public involvement process is ongoing. E-mails to agencies included a link that provides access to the public involvement website. Active public input was discussed noting the number of visitors to the website, those that left comments, and those that requested being placed on a mailing list. There have been several articles in local and regional newspapers and television stations, and there have been paid newspaper advertisements with information on the project. Interested parties can participate through electronic media or phone to request information.

Comments/Responses:

The floor was opened to agency input, and the following is a brief summary of the questions/comments and responses: responses and follow-up interaction on the topic are indented below the question/comment.

Michael Garcia: Is there a memorandum of understanding (MOU) between Iowa DOT and Illinois DOT to study potential routes within the state of Illinois?

> Amanda Martin: Iowa DOT has had some previous discussions about the project with George Weber of Illinois DOT but she couldn't recall if an MOU was specifically discussed. Amanda will discuss an MOU specifically with Ms. Tammy Nicholson of Iowa DOT and get back to Illinois DOT.

Norm West: How is this project different than the Chicago to Iowa City project, and what is the status of that project? Are previous NEPA documents being put aside and is there a fresh start with this project?

> John Morton: For that project, the Iowa legislature did not approve the state match last year. The Chicago to Iowa City Project was consequently split into two projects: Chicago to Moline, IL has state funding and NEPA is ongoing under Illinois DOT direction and Moline to Iowa City, IA. The Moline to Iowa City project will be managed by Iowa DOT, but state match in funding will need to be allocated to progress. Relevant data for the Chicago to Iowa City project will be used for this Project. The Tier 1 Service Level EIS for the Chicago to Omaha project will have a section with a discussion on the other projects.

> Andréa Martin: FRA issued a FONSI for the Tier 1 Service Level Chicago to Iowa City project in November 2011; the FONSI included a list of actions that need to be completed during Tier 2. She will send a copy of the FONSI to USEPA. None of the previous studies are being put aside and are moving along different and independent schedules. Information from past NEPA documents will be taken into account as part of this project's analysis. Iowa DOT will send the PowerPoint to attendees of the scoping meeting, as well as USACE. There appears to be a need for clearly explaining the interrelationships of the different projects in the EIS as well as to the public. Agency comments that were received previously as part of the Chicago to Iowa City, Chicago to Dubuque (IA), and Chicago to Moline (IL) projects will be considered as part of the historical record for the Tier 1 EIS. This project somewhat overlaps with the Chicago to Iowa City project because it could share some of the same track.

> Michael Garcia: The Tier 1 Service Level EA for Chicago to Iowa City is being reassessed by Illinois DOT for the Chicago to Moline section of the route. The Tier 2 Project Level EA has not yet started.

Norm West: Could you please send a direct link for the files you are directing us to rather than just noting the files are on the website?

John Morton: The project website for the public will be updated with information on different projects to differentiate them. A direct link to this information will be provided. At this stage of the Chicago to Omaha project, the level of information for website update will likely be identification of cities that could be directly served by different routes.

Michael Garcia: Illinois DOT intends to include all NEPA projects for Illinois passenger rail projects on an interactive map of Illinois. Amanda Martin should send an email to Miriam Gutierrez requesting that the Illinois DOT High Speed Rail (HSR) link be linked to the Chicago to Omaha project website. We are working toward getting this site fully functional.

Andréa Martin: Past documents as well as those for review on current projects could be posted to links. The Chicago to Detroit project hasn't started yet. FRA will discuss the use of the interactive map with Illinois DOT. FRA will likely have requests for cooperating agencies going out in early March, at the same time the NOI is published (possibly on March 9th). The scoping period will then be open for 30 days from NOI publication.

Norm West: Will the Chicago to Omaha Tier 1 EIS look at broader agency issues? Are you looking for resource agency input on resources such as threatened and endangered species that may be in the area or issues with major water crossings?

John Morton: Yes. Input is being sought from agencies on broad issues and readily-available data. More specific analysis would occur during Tier 2 Project Level analysis.

Shawn Cirton: Because federal agencies have different permitting responsibilities, they may ask for some more detailed information, which might typically be done in Tier 2.

Michael Garcia: The FHWA Tier 1 Process is different than the FRA Tier 1 Process; however, they both still follow NEPA.

Andréa Martin: The FRA has its own implementing regulations, per CEQ. FRA will state clearly the regulations that are being followed in the Tier 1 Service Level EIS and the NOI, and the level of analysis during Tier 1 Service Level and Tier 2 Project Level.

Michael Garcia: Based on his understanding, it doesn't appear that the screening criteria will be reviewed by the agencies or public prior to proceeding with the screening process. Is the intent to eliminate alternatives during screening to a single alternative?

John Morton: The screening criteria and methods are being developed and reviewed by FRA. The coarse level screening process has begun. The website is currently receiving comments on the project. The Draft Alternatives Analysis Report on the alternatives analysis (which will include both the coarse and fine level screening processes) will be placed on the public website for agency and public review, and public meetings will be held in spring 2012. Comments will be considered and used to create a Final Alternatives Analysis Report. What comes out of the Report will be the range of reasonable and feasible alternatives carried forward in the EIS; the intent of the screening is to potentially get down to a single alternative to carry forward in the EIS. The Final Alternatives Analysis Report will be summarized and make up the bulk of Chapter 2 of the EIS.

Amanda Martin: Iowa DOT will provide Walt Zyznieuski the screening criteria for review. Michael Garcia will be copied on everything; Walt will receive information as it pertains to NEPA. Determining the preferred route alternative is FRA's decision.

Janet Vine: The public will have opportunities to provide input on the alternatives screening process. The Draft Alternatives Analysis Report will be published and posted for review, with the public able to provide comments through the publish website or during meetings.

Shawn Cirton: Please review wildlife impacts from noise as well as human impacts (similar to what was done for CN-EJE acquisition). Has the USFWS Rock Island Field Office been contacted concerning this project?

The Rock Island office will likely be the lead contact for USFWS. Shawn Cirton will provide FRA with the contact information for the USFWS Rock Island office.

> Andréa Martin: The Rock Island Office will be coordinated with concerning this project [an e-mail invitation to scoping was provided] and will receive the cooperating agencies letter from FRA in March.

Michael Garcia: Will the Tier 1 EIS be done in a phased approach to identify what you anticipate in the Tier 2 documents or will it address building the entire project at once? Will it address an implementation plan due to funding not being all available at one time? Will it recommend what is needed for Tier 2?

> John Morton: FRA has asked Iowa DOT to define how the service could be implemented. It is most likely that full funding would not be available, but smaller amounts of funding should be available to phase in study and development of segments. The Tier Service Level 1 EIS will have an implementation section to show how reasonable investment can partially meet goals and be used before future improvements can be funded. The Record of Decision (ROD) will also have an implementation strategy and will discuss what is needed in Tier 2.

> Andréa Martin: An implementation plan will be included in the EIS and the ROD. Based on funding constraints, the project would definitely need a phased approach.

> John Morton: The phased approach with an implementation plan is consistent with the philosophy of the MWRRI. The project could be phased geographically as well as in frequency and speed.

Michael Garcia: Will the Tier 1 EIS look at Chicago Union Station (CUS) capacity? There are other projects going on which add more trains into CUS; for example Illinois and Michigan both have projects at the Tier 1 stage that would add more trains. At some point, CUS won't be able to handle more trains.

> John Morton: The two challenges are on both termini – getting into CUS and getting across the river into Omaha. Neither challenge will be solved at the Tier 1 Service Level but there will be enough analysis to show that it can be done, with detailed evaluations to be completed in Tier 2. So CUS capacity will definitely be analyzed during Tier 1; it will be identified as a constraint and a problem.

Michael Garcia: Has coordination been performed with host railroads on how passenger trains will interact with freight trains?

> John Morton: Early coordination has been performed with host railroads concerning the awareness of the project. The railroads haven't signed any agreements on operations or use of tracks, but have responded that they are willing to work with FRA and Iowa DOT on the potential development with various caveats.

Shawn Cirton: Please provide USFWS offices with a more detailed map of the Illinois counties they serve so they can provide more substantive comments

> Andréa Martin: FRA will include the requested map with the cooperating agencies letter.

Frank Shockey: FEMA has new Illinois mapping available in GIS. We should call him if we have trouble obtaining GIS data from FEMA's website. We also should reach out to Iowa and Nebraska FEMA agencies. The new FEMA maps do not reflect recent climate change discussions, so they may change again.

> Norm West: Suggests that it would be wise to consider increased rains and flooding possibilities in the future and not to rely solely on the past data.

> Andréa Martin: Future increased rains and flooding possibilities would be examined in Tier 2.

> Frank Shockey: When looking at specific infrastructure requirements in Tier 2, we will need to look at impacts on flooding. There may be more revised flood maps in the next few years.

Norm West: Have station locations been identified?

> John Morton: We have potential locations identified for the termini, and at some midpoints. The dots on the map (provided with the e-mail notification of the scoping meeting) of route alternatives do not indicate specific locations. Potential station locations will be identified during the fine level screening process. During coarse level screening, we are only looking at population served/ridership potential. Some of the routes go through more densely populated areas than others. The Chicago area population skews the analysis of potential station locations because the population served in the Chicago is so high. For comparisons of the population served along potential routes, we are excluding Chicago and Omaha during coarse level screening because all of the route alternatives will serve those cities.

John Morton and Amanda Martin discussed and showed components of the public website, and showed agencies the basic method of operating and viewing the website. The method for downloading PDFs was demonstrated. The website was recommended for internal agency use, and to provide access to others. The website tracks use; the highest number of hits have been from 1-3 in the afternoon and 9-11 at night, which is not when public meetings are typically held. The website is similar to what had been used for the Canadian National project but has evolved considerably since then.

Action Items:

- FRA will send out Cooperating Agency letters after the NOI is published. [letters were sent]
- FRA will contact Rock Island USFWS as part of agency coordination. [agency coordination occurred]
- FRA will provide more detailed maps of potential routes near Chicago area for USFWS review. [maps sent to USFWS]
- FRA to send FONSI for Chicago to Iowa City Tier 1 Service Level EA to Norm West. [FONSI sent]
- FRA to include reference to FRA environmental procedures in the NOI. [NOI for EIS referenced FRA procedures]
- Iowa DOT will have an internal discussion regarding an MOU with Illinois DOT. [Iowa DOT discussed situation with Illinois DOT]
- Iowa DOT will send PowerPoint to the meeting attendees and USACE who was not in attendance. [PowerPoint was sent to attendees and USACE, who responded but did not attend the meeting]
- Iowa DOT will supplement the Iowa DOT project website with information to help clarify and differentiate various rail passenger projects. [website was supplemented with additional information]
- Iowa DOT will provide HDR with agency comments that were received previously for the NEPA effort for the Chicago to Dubuque project. [agency comments were provided]
- Iowa DOT to send Illinois DOT an email to Miriam Gutierrez with logo that formally requests that a link to the Chicago to Omaha project be added to the Illinois DOT HSR website. [request sent to Illinois DOT]
- Iowa DOT will ensure that Michael Garcia and Walt Zyznieuski receive the Alternatives Analysis methodology and Alternatives Analysis documents for review. [documents were provided to Illinois DOT designees for review]
- Illinois DOT will provide HDR with agency comments that were received previously for the NEPA effort for the Chicago to Moline project. [agency comments were provided]

Chicago to Omaha
Regional Passenger Rail System Planning Study

Meeting: Chicago to Omaha Reg Passenger Rail Study Agency Scoping Meeting - Chicago Date: Feb. 22, 2012

Name	Organization	Address	City State & Zip	Email
1. Janice Reid	HDR	8550 W. Bryn Mawr Chgo	Chicago, IL 60631	janice.reid@hdrinc.com
2. John Morton	HDR	8404 Indian Hills Dr.	Omaha, NE 68114	john.morton@hdrinc.com
3. Michael Garcia	IDOT	2300 S. Dirksen Pkwy, [illegible]	Springfield, IL 62764	mike.garcia4@illinois.gov
4. Norm West	US EPA	77 W Jackson Blvd, E-19J, Chicago 60604		west.norman@epa.gov
5. Todd Popish	IDOT	100 W Randolph Suite 6-600 Chicago	Chicago IL 60601	todd.popish@illinois.gov
*6. Amanda Martin	Iowa DOT			
*7. Janet Vine	Iowa DOT			
*8. Walt Zyznieuski	IDOT			
*9. Brian Goss	HDR			
10. Angela Brazzale	HDR	30 N. LaSalle, #3320	Chicago, IL 60602	Angela.Brazzale@hdrinc.com
11. Andrea Martin	FRA	1200 N.J. Ave SE Mail stop 20	Washington, D.C. 20590	andrea.martin@dot.gov
12. Shawn Cirton	USFWS	1250 S. Grove Av. Av., Barrington, IL 60010 →		shawn_cirton@fws.gov
*13. Tim Flagler	HNTB			
14. Frank Shockey	FEMA Region V	536 S. Clark St. 6th Floor Chicago IL 60605		frank.shockey@dhs.gov
*15. Kelly Farrell	HDR			
*16. Gretchen Ivy	HNTB			
17.				
18.				
19.				
20.				

* Via Teleconference

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office
1511 47th Avenue
Moline, Illinois 61265
Phone: (309) 757-5800 Fax: (309) 757-5807

IN REPLY REFER TO:
FWS/RIFO

April 16, 2012

Ms. Amanda Martin
Freight and Passenger Policy Coordinator Office of Rail Transportation
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

Dear Ms. Martin:

This is in regard to your request for our comments on the proposed Regional Passenger Rail System from Chicago, Illinois, to Omaha, Nebraska – Tier 1 Environmental Impact Statement (EIS) proposed by Department of Transportation (DOT), Federal Railroad Administration (FRA), and Iowa Department of Transportation (IADOT). For the purposes of this letter we will provide information relative to all portions of the project, including Douglas County, Nebraska.

Our data indicate that the species on the enclosed list may occur in the counties of your proposed action. Descriptions of the habitat requirements are included with the list. You may use these descriptions to help you determine if there is suitable habitat within your project area.

In order to address potential impacts to federally listed species on the enclosed list, we recommend that you initiate the Section 7 process by obtaining an official species list and following the steps outlined at http://www.fws.gov/midwest/endangered for Region 3 (Illinois and Iowa) and http://www.fws.gov/mountain-prairie/endspp/ for Region 6 (Douglas County, Nebraska). Through internal review and analysis, you may make a determination(s) regarding whether listed species would be impacted. By following the instructions, you can determine what your action area is, whether listed species may be found within the action area, and if the project may affect listed species. You will find several products on the site that can streamline the consultation process for this and future projects. When determining if listed species may be located within a project area, you can download county specific species lists for all of the states in Region 3 and Region 6.

We also recommend that the project be evaluated for potential impacts to wildlife, particularly migratory birds, from increased noise and vibration resulting from increases in train frequency and speed for the alternatives considered.

We are particularly interested in the feasibility of alternative Route 4 because the portion of the route between Joliet, Illinois, and Chicago, Illinois, could be combined with a potential alternative for the Chicago to St. Louis high speed rail project. The Chicago Field Office has previously identified this potential alternative, carrying passengers east of Joliet, because it would eliminate adverse impacts to the Hine's emerald dragonfly (*Somatochlora hineana*) located in the Lower Des Plaines River Valley. Improvements to the portion of the route between Joliet and Chicago could serve both high speed rail projects and eliminate impacts to the Hine's emerald dragonfly.

National Wetland Inventory maps indicate that there may be wetlands within and adjacent to the project area for all potential alternatives. These areas may be affected by the proposed project. The Corps of Engineers is the Federal agency responsible for wetland regulation, and we recommend that you contact them for assistance in delineating the wetland types and acreage within the project boundary. Priority consideration should be given to avoid impacts to these wetland areas. Any future activities in the study area that would alter these wetlands may require a Section 404 permit. Unavoidable impacts will require a mitigation plan to compensate for any losses of wetland functions and values. The U.S. Army Corps of Engineers, Clock Tower Building, P.O. Box 2004, Rock Island, Illinois, 61201, should be contacted for information about the permit process.

These comments are provided as technical assistance in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq) and the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq). If you have any questions regarding our comments, please contact Heidi Woeber of my staff at (309) 757-5800, extension 203.

Sincerely,

for Richard C. Nelson
Field Supervisor

Enclosure

cc: USDOT/FRA (Andrea Martin)
USFWS-Barrington (Clifton, Lah)
USFWS-Grand Island (George)

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Iowa
County Distribution of Federally Threatened, Endangered, Proposed and Candidate Species

County	Common Name	Scientific Name	Status	Habitat
Adair	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Adams	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Allamakee	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
Appanoose	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Audubon	Indiana bat Map of Indiana bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Benton	Indiana bat Map of Indiana bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Black Hawk	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Boone	Indiana bat Map of Indiana bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Bremer	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Buchanan	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Buena Vista	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Butler	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Calhoun	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Carroll	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Topeka shiner Map of Topeka Schinerranges in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Cass	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Cedar	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Cerro Gordo	*Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Cherokee	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Chickasaw	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Clarke	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Mead's milkweed	*Asclepias meadii*	Threatened	
Clay	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Clayton	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Clinton	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
Crawford	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Dallas	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Davis	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Decatur	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
Delaware	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Northern monkshood	*Aconitum noveboracense*	Threatened	
Des Moines	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Spectaclecase mussel	*Cumberlandia monodonta*	Endangered	Large rivers in areas sheltered from the main force of the current
Dickinson	Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie

	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Dakota skipper	*Hesperia dacotae*	Candidate	Prairies
Dubuque	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins' eye pearly mussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
Emmet	*Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Fayette	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
Floyd	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Franklin	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Fremont	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
Greene	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Grundy	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Guthrie	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Hamilton	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Hancock	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	*Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Hardin	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Northern monkshood	*Aconitum noveboracense*	Threatened	
Harrison	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
Henry	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)

	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Howard	*Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Humboldt	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Ida	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Iowa	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Jackson	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
Jasper	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Jefferson	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Johnson	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
	Eastern massasauga	*Sistrurus catenatus*	Candidate	
Jones	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
Keokuk	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Kossuth	Topeka shiner Map of Topeka shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	*Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Lee	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Sheepnose mussel	*Plethobasus cyphyus*	Endangered	Shallow areas in larger rivers and streams
	Spectaclecase mussel	*Cumberlandia monodonta*	Endangered	Large rivers in areas sheltered from the main force of the current
Linn	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)

	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Louisa	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Eastern massasauga	*Sistrurus catenatus*	Candidate	
Lucas	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Lyon	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Madison	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Mahaska	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)

	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Marion	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Marshall	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Mills	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
	Eastern massasauga	*Sistrurus catenatus*	Candidate	
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Mitchell	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Monona	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Monroe	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Montgomery	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Muscatine	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern massasauga	*Sistrurus catenatus*	Candidate	
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Endangered	Shallow areas in larger rivers and streams
	Spectaclecase mussel	*Cumberlandia monodonta*	Endangered	Large rivers in areas sheltered from the main force of the current
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
O'Brien	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Osceola	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	*Poweshiek skipperling	*Oarisma poweshiek*	Candidate	Remnants of tallgrass prairie
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Page	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Palo Alto	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Plymouth	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Pocahontas	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Polk	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Least tern	*Sterna antillarum*	Endangered	Bare alluvial and dredged spoil islands
Pottawattamie	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Least tern	*Sterna antillarum*	Endangered	Bare alluvial and dredged spoil islands
	Piping plover	*Charadrius melodus*	Endangered	
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
	Eastern massasauga	*Sistrurus catenatus*	Candidate	
Poweshiek	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Ringgold	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
Sac	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Scott	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Endangered	Shallow areas in larger rivers and streams
	Spectaclecase mussel	*Cumberlandia monodonta*	Endangered	Large rivers in areas sheltered from the main force of the current
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Shelby	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Sioux	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Story	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Tama	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Taylor	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Union	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Van Buren	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Wapello	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Warren	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
Washington	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Wayne	Indiana bat Map of Indiana Bat range in Iowa (PDF)	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Webster	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Winnebago	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Winnishiek	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Woodbury	Least tern	*Sterna antillarum*	Endangered	Bare alluvial and dredged spoil islands
	Piping plover	*Charadrius melodus*	Endangered	
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Worth	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Wright	Topeka shiner Map of Topeka Shiner range in Iowa (PDF)	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

Illinois
Federally Endangered, Threatened, and Candidate Species

List Revised March 2012

County	Species	Status	Habitat
Adams **Field Office to Contact:** U.S. Fish and Wildlife Service - Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: rockisland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel (*Lampsilis higginsi*)	Endangered	Mississippi River; Rock River to Steel Dam
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Alexander **Field Office to Contact:** U.S. Fish and Wildlife Service - Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Gray bat (*Myotis grisescens*)	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern (*Sterna antillarum*)	Endangered	Bare alluvial and dredged spoil islands
	Pallid sturgeon (*Scaphirynchus albus*)	Endangered	Large rivers
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Ohio River
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams
Bond **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover *Charadrius melodus*	Endangered	May be present in Bond County during migration.
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies

County	Species	Status	Habitat
Boone **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail RockIsland@fws.gov FAX 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Brown **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail RockIsland@fws.gov FAX 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)*	Threatened	
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Bureau **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail RockIsland@fws.gov FAX 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)* *(Boltonia decurrens)*	Threatened	
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Calhoun **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)*	Threatened	
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Carroll **Field Office to Contact:** U.S. Fish and Wildlife Service	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Higgins eye pearlymussel (*Lampsilis higginsi*)	Endangered	Mississippi River; Rock River to Steel Dam
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Cass **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Prairie bush clover (*Lespedeza leptostachya*) (*Lespedeza leptostachya*)	Threatened	Dry to mesic prairies with gravelly soil
Champaign **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Prairie bush clover (*Lespedeza leptostachya*)	Threatened	Dry to mesic prairies with gravelly soil
Christian **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Clark **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Wabash River

County	Species	Status	Habitat
8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Clay **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Clinton **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover *Charadrius melodus*	Endangered	May be present in Clinton County during migration.
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
	Lakeside daisy (*Hymenoxys acaulis var. glabra*)	Threatened	Dry rocky prairies
Coles **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Snuffbox (*Epioblasma triquetra*)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Cook **Field Office to Contact:** USFWS Chicago Illinois FO 1250 South Grove, Suite 103	Piping plover *Charadrius melodus*	Endangered	Lakeshore beaches
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)

County	Species	Status	Habitat
Barrington, Illinois 60010 (847) 381-2253 email: [illegible]@fws.gov	Hine's emerald dragonfly *(Somatochlora hineana)*	Endangered	Spring fed wetlands, wet meadows and marshes
	Hine's emerald dragonfly *(Somatochlora hineana)*	Critical Habitat Designated	Go here for a map and written description of the areas designated as Critical Habitat (PDF)
	Eastern prairie fringed orchid *(Platanthera leucophaea)* Go here for specific guidance on how to determine whether this species is present at a site.	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Leafy-prairie clover *(Dalea foliosa)*	Endangered	Prairie remnants on thin soil over limestone
	Mead's milkweed *(Asclepias meadii)*	Threatened	Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil
	Prairie bush clover *(Lespedeza leptostachya)*	Threatened	Dry to mesic prairies with gravelly soil
Crawford **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: [illegible]	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Wabash River
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Cumberland **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: [illegible]	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Snuffbox (*Epioblasma triquetra*)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
DeKalb **Field Office to Contact:** U.S. Fish and Wildlife Service	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Dewitt **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Douglas **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Snuffbox (*Epioblasma triquetra*)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Dupage **Field Office to Contact:** USFWS Chicago Illinois FO 1250 South Grove, Suite 103 Barrington, Illinois 60010 (847) 381-2253 email: Chicago@fws.gov [illegible]	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Hine's emerald dragonfly (*Somatochlora hineana*)	Endangered	Spring fed wetlands, wet meadows and marshes
	Hine's emerald dragonfly (*Somatochlora hineana*)	Critical Habitat Designated	Go here for a map and written description of the areas designated as Critical Habitat (PDF)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*) Go here for specific guidance on how to determine whether this species is present on a site.	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Leafy prairie clover (*Dalea foliosa*)	Endangered	Prairie remnants on thin soil over limestone

County	Species	Status	Habitat
	Mead's milkweed *(Asclepias meadii)*	Threatened	Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil
	prairie bush clover *(Lespedeza leptostachya)*	Threatened	Dry to mesic prairies with gravelly soil
Edgar **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Edwards **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Effingham **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Fayette **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover *Charadrius melodus*	Endangered	May be present in Fayette County during migration.
	eastern massasauga *(Sistrurus catenatus)*	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)

County	Species	Status	Habitat
e-mail Marion@fws.gov	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Prairie bush clover (*Lespedeza leptostachya*)	Threatened	Dry to mesic prairies with gravelly soil
Ford **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Mead's milkweed (*Asclepias meadii*)	Threatened	Virgin prairies
Franklin **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover (*Charadrius melodus*)	Endangered	May be present in Franklin County during migration.
Fulton **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Gallatin **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Fat pocketbook mussel (*Potamilus capax*)	Endangered	Mississippi, Wabash, Little Wabash, Ohio Rivers

County	Species	Status	Habitat
Greene **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Grundy **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Hamilton **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Hancock **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel (*Lampsilis higginsi*)	Endangered	Mississippi River; Rock River to Steel Dam
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams
	Spectaclecase mussel (*Cumberlandia monodonta*)	Endangered	Shallow areas in larger rivers and streams
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Hardin **Field Office to**	Gray bat *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests

County	Species	Status	Habitat
Contact: U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Fat pocketbook pearlymussel *(Potamilus capax)*	Endangered	Saline, Middle Fork Saline, and North Fork Saline Rivers
Henderson **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel *(Lampsilis higginsi)*	Endangered	Mississippi River; Rock River to Steel Dam
	Spectaclecase mussel *(Cumberlandia monodonta)*	Endangered	Shallow areas in larger rivers and streams
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Henry **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Iroquois **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Jackson **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office	Gray bat *Myotis grisescens* *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Least tern (*Sterna antillarum*)	Endangered	Bare alluvial and dredged spoil islands
	Pallid sturgeon (*Scaphirynchus albus*)	Endangered	Large rivers
Jasper **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Embarass River
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Jefferson **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover (*Charadrius melodus*)	Endangered	May be present in Jefferson County during migration.
Jersey **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Jo Daviess **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel (*Lampsilis higginsi*)	Endangered	Mississippi River; Rock River to Steel Dam
	Iowa Pleistocene snail (*Discus macclintocki*)	Endangered	North-facing algific talus slopes of the driftless area
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies

County	Species	Status	Habitat
FAX: 309-757-5807	Prairie bush-clover *(Lespedeza leptostachya)*	Threatened	Dry to mesic prairies with gravelly soil
Johnson **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Gray bat *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Kane **Field Office to Contact:** USFWS Chicago Illinois FO 1250 South Grove, Suite 103 Barrington, Illinois 60010 (847) 381-2253 email: Chicago@fws.gov Cathy_Pollack@fws.gov	Eastern prairie fringed orchid *(Platanthaera leucophaea)* See here for specific guidance on how to determine whether this species is present on a site.	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
Kankakee **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Sheepnose mussel *(Plethobasus cyphyus)*	Endangered	Shallow areas in larger rivers and streams
	Snuffbox *(Epioblasma triquetra)*	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Kendall **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Knox	Indiana bat *(Myotis sodalis)*	Endangered	

County	Species	Status	Habitat
Field Office to Contact: U.S. Fish and Wildlife Service Rock Island, Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: [illegible] FAX: 309-757-5807	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Lake **Field Office to Contact:** USFWS Chicago, Illinois FO 1250 South Grove, Suite 103 Barrington, Illinois 60010 (847) 381-2253 email: [illegible]	Piping plover *Charadrius melodus*	Endangered	Wide, open, sandy beaches with very little grass or other vegetation
	Piping plover *Charadrius melodus*	Critical Habitat	Wide, open, sandy beaches with very little grass or other vegetation
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Karner blue butterfly (*Lycaeides melissa samuelis*)	Endangered	Pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis*), the only known food plant of the larvae
	Eastern prairie fringed orchid (*Platanthaera leucophaea*) Go here for specific guidance on how to determine whether this species is present on a site.	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Pitcher's thistle (*Cirsium pitcheri*)	Threatened	Lakeshore dunes
La Salle **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)
	Indiana bat (*Myotis sodalis*)	Critical Habitat designated	Blackball Mine
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Leafy prairie clover (*Dalea foliosa*)	Endangered	Prairie remnants on thin soil over limestone
Lawrence **Field Office to Contact:** U.S. Fish and Wildlife Service	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 Email: [illegible]	Fat pocketbook mussel (*Potamilis capax*)	Endangered	Mississippi, Wabash, Little Wabash, Ohio Rivers
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Wabash River
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Lee **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: [illegible] FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Prairie bush clover (*Lespedeza leucostachya*)	Threatened	Dry to mesic prairies with gravelly soil
Livingston **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: [illegible] FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Logan **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: [illegible] FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Macon **Field Office to Contact:** U.S. Fish and Wildlife Service	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
Rock Island Illinois **Field Office** 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX 309-757-5807	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Macoupin **Field Office to Contact**: U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); Small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Madison **Field Office to Contact**: U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern (*Sterna antillarum*)	Endangered	Bare alluvial and dredged spoil islands
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Pallid sturgeon (*Scaphirynchus albus*)	Endangered	Large rivers
	Spectaclecase mussel (*Cumberlandia monodonta*)	Endangered	Shallow areas in larger rivers and streams
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Marion **Field Office to Contact**: U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies

County	Species	Status	Habitat
Marshall **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Mason **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Massac **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern (*Sterna antillarum*)	Endangered	Bare alluvial and dredged spoil islands
	Fat pocketbook mussel (*Potamilus capax*)	Endangered	Mississippi, Wabash, Little Wabash, Ohio Rivers
	Orange-footed pimpleback pearlymussel (*Plethobasis cooperianus*) (=*P. striatus*)	Endangered	Ohio River below confluence with Cumberland River
	Pink mucket pearly mussel (*Lampsilis orbiculata*) (=*Plethobasis abrupta*)	Endangered	Ohio River
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Ohio River
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams
	Spectaclecase mussel (*Cumberlandia monodonta*)	Endangered	Shallow areas in larger rivers and streams
McDonough **Field Office to Contact:** U.S. Fish and Wildlife Service	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
McHenry **Field Office to Contact:** USFWS Chicago Illinois FO 1250 South Grove, Suite 103 Barrington, Illinois 60010 (847) 381-2253 email: Chicago@fws.gov Cathy_Pollack@fws.gov	Eastern prairie fringed orchid (*Platanthaera leucophaea*) Guidance for surveying is available on how to determine whether this species is present on a site.	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Prairie bush clover (*Lespedeza leptostachya*)	Threatened	Dry to mesic prairies with gravelly soil
McLean **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Menard **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Mercer **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel (*Lampsilis higginsi*)	Endangered	Mississippi River; Rock River to Steel Dam

County	Species	Status	Habitat
1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: rockisland@fws.gov FAX: 309-757-5807	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Monroe **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Gray bat *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern *(Sterna antillarum)*	Endangered	Bare alluvial and dredged spoil islands
	Pallid sturgeon *(Scaphirhynchus albus)*	Endangered	Large rivers
	Illinois cave amphipod *(Gammarus acherondytes)*	Endangered	Cave streams in Illinois sinkhole plair
Montgomery **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Morgan **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)*	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Moultrie **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover *Charadrius melodus*	Endangered	May be present in Moultrie County during migration.

County	Species	Status	Habitat
8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Ogle **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Prairie bush clover (*Lespedeza leptostachya*)	Threatened	Dry to mesic prairies with gravelly soil
Peoria **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Perry **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Piatt **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies

County	Species	Status	Habitat
Pike **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email RockIsland@fws.gov FAX: 309-757-5807	Gray bat *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel (*Lampsilis higginsi*)	Endangered	Mississippi River; Rock River to Steel Dam
	Spectaclecase mussel (*Cumberlandia monodonta*)	Endangered	Shallow areas in larger rivers and streams
	Decurrent false aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Pope **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Gray bat *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern (*Sterna antillarum*)	Endangered	Bare alluvial and dredged spoil islands
	Fat pocketbook mussel (*Potamilis capax*)	Endangered	Mississippi, Wabash, Little Wabash, Ohio Rivers
Pulaski **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Gray bat *Myotis grisescens*	Endangered	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Orangefoot pimpleback pearlymussel (*Plethobasis cooperianus*) (=*P. striatus*)	Endangered	Ohio River below confluence with Cumberland River
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Ohio River
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams
Putnam **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils

County	Species	Status	Habitat
1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Randolph **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern *(Sterna antillarum)*	Endangered	Bare alluvial and dredged spoil islands
	Pallid sturgeon *(Scaphirynchus albus)*	Endangered	Large rivers
	Small whorled pogonia *(Isotria medeoloides)*	Threatened	Dry woodlands
Richland **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Rock Island **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel *(Lampsilis higginsi)*	Endangered	Mississippi River; Rock River to Steel Dam
	Sheepnose mussel *(Plethobasus cyphyus)*	Endangered	Shallow areas in larger rivers and streams
	Spectaclecase mussel *(Cumberlandia monodonta)*	Endangered	Shallow areas in larger rivers and streams
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies
Saint Clair **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern *(Sterna antillarum)*	Endangered	Bare alluvial and dredged spoil islands
	Pallid sturgeon *(Scaphirynchus albus)*	Endangered	Large rivers

County	Species	Status	Habitat
3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Illinois cave amphipod *(Gammarus acherondytes)*	Endangered	Cave streams in Illinois sinkhole plain
	Decurrent false aster *(Boltonia decurrens)*	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Saline **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 email: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Mead's milkweed *(Asclepias meadii)*	Threatened	Virgin prairies
Sangamon **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Schuyler **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)*	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Scott **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)*	Threatened	Disturbed alluvial soils

County	Species	Status	Habitat
8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Shelby **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping plover *Charadrius melodus*	Endangered	May be present in Shelby County during migration.
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Stark **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island, Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Stephenson **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island, Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
Tazewell **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island, Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Lakeside daisy (*Hymenopsis herbacea*)	Threatened	Dry rocky prairies

County	Species	Status	Habitat
Union **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern *(Sterna antillarum)*	Endangered	Bare alluvial and dredged spoil islands
	Pallid sturgeon *(Scaphirhynchus albus)*	Endangered	Large rivers
Vermilion **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Clubshell mussel *(Pleurobema clava)*	Endangered	Vermilion River: North Fork
	Rabbitsfoot *(Quadrula cylindrica cylindrica)*	Candidate	Vermilion River, Salt Fork Vermilion River, Middle Fork Vermilion River, North Fork Vermilion River, Middle Branch North Fork Vermilion River
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Wabash **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern *(Sterna antillarum)*	Endangered	Wabash River, nests on sand bars
	Fat pocketbook mussel *(Potamilis capax)*	Endangered	Mississippi, Wabash, Little Wabash, Ohio Rivers
	Rabbitsfoot *(Quadrula cylindrica cylindrica)*	Candidate	Wabash River
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies
Warren **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies

County	Species	Status	Habitat
Washington **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Wayne **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
White **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail: Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Fanshell mussel (*Cyprogenia stegaria*) (=*C. irrorata*)	Endangered	Wabash River
	Fat pocketbook mussel (*Potamilus capax*)	Endangered	Mississippi, Wabash, Little Wabash, Ohio Rivers
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Candidate	Wabash River
Whiteside **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail: rockisland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel (*Lampsilis higginsii*)	Endangered	Mississippi River; Rock River to Steel Dam
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	Mesic to wet prairies
Will **Field Office to**	Hine's emerald dragonfly (*Somatochlora hineana*)	Endangered	Spring fed wetlands, wet meadows and marshes

County	Species	Status	Habitat
Contact: USFWS Chicago Illinois FO 1250 South Grove Suite 103 Barrington, Illinois 60010 (847) 381-2253 email: Chicago@fws.gov Cathy_Pollack@fws.gov	Hine's emerald dragonfly (*Somatochlora hineana*)	Critical Habitat Designated	Go here for a map and written description of the areas designated as Critical Habitat (PDF)
	Eastern massasauga (*Sistrurus catenatus*)	Candidate	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	Shallow areas in larger rivers and streams
	Snuffbox (*Epioblasma triquetra*)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
	Eastern prairie fringed orchid (*Platanthaera leucophaea*) Go here for specific guidance on how to determine whether this species is present on a site.	Threatened	Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
	Lakeside daisy (*Hymenoxys herbacea*)	Threatened	Dry rocky prairies
	Leafy-prairie clover (*Dalea foliosa*)	Endangered	Prairie remnants on thin soil over limestone
	Mead's milkweed (*Asclepias meadii*)	Threatened	Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil
Williamson **Field Office to Contact:** U.S. Fish and Wildlife Service Marion Illinois Sub-Office 8588 Route 148 Marion, Illinois 62959 Phone: (618) 997-3344, ext. 340 FAX: (618) 997-8961 e-mail Marion@fws.gov	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Winnebago **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 e-mail RockIsland@fws.gov FAX: 309-757-5807	Indiana bat (*Myotis sodalis*)	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid (*Platanthaera leucophaea*)	Threatened	Mesic to wet prairies
	Prairie bush clover (*Lespedeza leptostachya*)	Threatened	Dry to mesic prairies with gravelly soil

County	Species	Status	Habitat
Woodford **Field Office to Contact:** U.S. Fish and Wildlife Service Rock Island Illinois Field Office 1511 47th Avenue Moline, Illinois 61265 (309) 757-5800 email: RockIsland@fws.gov FAX: 309-757-5807	Indiana bat *(Myotis sodalis)*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Decurrent false aster *(Boltonia decurrens)*	Threatened	Disturbed alluvial soils
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	Threatened	Mesic to wet prairies

U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species-list.

Endangered Species Act species-list information for your project is available online and listed below for the following FWS Field Offices:

NEBRASKA ECOLOGICAL SERVICES FIELD OFFICE
FEDERAL BUILDING
203 WEST SECOND STREET
GRAND ISLAND, NE 68801
(308) 382-6468
http://www.fws.gov/nebraskaes

Project Counties:

Douglas, NE

Project Type:

Transportation

Endangered Species Act Species-list

There are a total of 3 species in your species-list

Species that may be affected by your project:

Birds			
Least tern (*Sterna antillarum*) Population: interior pop	Endangered	species info	Nebraska Ecological Services Field Office
Piping Plover (*Charadrius melodus*) Population: except Great Lakes watershed	Threatened	species info	Nebraska Ecological Services Field Office

U.S. Fish and Wildlife Service

Natural Resources of Concern

Whooping crane (*Grus americana*) Population: except where EXPN	Endangered	species info	Nebraska Ecological Services Field Office
Fishes			
Pallid sturgeon (*Scaphirhynchus albus*)	Endangered	species info	Nebraska Ecological Services Field Office
Flowering Plants			
Western Prairie Fringed Orchid (*Platanthera praeclara*)	Threatened	species info	Nebraska Ecological Services Field Office

FWS National Wildlife Refuges

There are no refuges found within the vicinity of your project.

FWS Migratory Birds

Not yet available through IPaC.

FWS Delineated Wetlands

Not yet available through IPaC.

Iowa List of Federally Endangered, Threatened, Proposed, and Candidate Species - by County

If you have questions about this list, please contact our Illinois Field Office at:
U.S. Fish and Wildlife Service, 1511 47th Avenue, Moline, Illinois 61265
Phone: (309) 757-5800
Revised September 2007

County	Common Name	Scientific Name	Status	Habitat
Adair	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
Adams	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Allamakee	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
Appanoose	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Audubon	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Benton	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

County	Common Name	Scientific Name	Status	Habitat
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Black Hawk	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Boone	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Bremer	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Buchanan	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Buena Vista	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Butler	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Calhoun	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Carroll	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Cass	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Cedar	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Cerro Gordo	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

County	Common Name	Scientific Name	Status	Habitat
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Cherokee	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Chickasaw	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Clarke	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Mead's milkweed	*Asclepias meadii*	Threatened	
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	
Clay	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Clayton	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers
Clinton	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
Crawford	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

County	Common Name	Scientific Name	Status	Habitat
Dallas	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Davis	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Decatur	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
Delaware	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Northern monkshood	*Aconitum noveboracense*	Threatened	
Des Moines	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers
Dickinson	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers

County	Common Name	Scientific Name	Status	Habitat
	Dakota skipper	*Hesperia dacotae*	Candidate	Prairies
Dubuque	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers
Emmet	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Fayette	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
Floyd	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Franklin	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Fremont	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
Greene	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Grundy	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Guthrie	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

County	Common Name	Scientific Name	Status	Habitat
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Hamilton	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Hancock	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Hardin	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Northern monkshood	*Aconitum noveboracense*	Threatened	
Harrison	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
Henry	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Howard	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Humboldt	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Ida	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Iowa	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

County	Common Name	Scientific Name	Status	Habitat
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Jackson	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
	Northern monkshood	*Aconitum noveboracense*	Threatened	
	Higgins eye pearlymussel	*Lampsilis higginsi*	Endangered	Mississippi River
	Iowa Pleistocene snail	*Discus macclintocki*	Endangered	North-facing algific talus slopes of the driftless area
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
Jasper	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Jefferson	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Johnson	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Eastern massasauga	*Sistrurus c. catenatus*	Candidate	

County	Common Name	Scientific Name	Status	Habitat
Jones	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic to wet prairies
Keokuk	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Kossuth	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Lee	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers
Linn	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Louisa	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers

County	Common Name	Scientific Name	Status	Habitat
	Eastern massasauga	*Sistrurus c. catenatus*	Candidate	
Lucas	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
Lyon	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Madison	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Mahaska	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Marion	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Marshall	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Mills	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

County	Common Name	Scientific Name	Status	Habitat
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
	Eastern massasauga	*Sistrurus c. catenatus*	Candidate	
Mitchell	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Monona	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
Monroe	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Montgomery	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Muscatine	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgin's eye pearlymussel	*Lampsilis higginsii*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers

County	Common Name	Scientific Name	Status	Habitat
	Eastern massasauga	*Sistrurus c. catenatus*	Candidate	
O'Brien	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Osceola	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Page	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Palo Alto	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Plymouth	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Pocahontas	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Polk	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern	*Sterna antillarum*	Endangered	Bare alluvial and dredged spoil islands
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
Pottawattamie	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

County	Common Name	Scientific Name	Status	Habitat
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Least tern	*Sterna antillarum*	Endangered	Bare alluvial and dredged spoil islands
	Piping plover	*Charadrius melodus*	Endangered	
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
	Eastern massasauga	*Sistrurus c. catenatus*	Candidate	
Poweshiek	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Ringgold	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
Sac	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Scott	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
	Higgins eye pearlymussel	*Lampsilis higginsi*	Endangered	Mississippi River
	Sheepnose mussel	*Plethobasus cyphyus*	Candidate	Rivers
	Spectaclecase mussel	*Cumberlandia monodonta*	Candidate	Rivers
Shelby	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

County	Common Name	Scientific Name	Status	Habitat
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Sioux	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Story	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Tama	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Taylor	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Union	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Van Buren	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Wapello	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula);small stream corridors with well developed riparian woods; upland forests (foraging)
Warren	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows

County	Common Name	Scientific Name	Status	Habitat
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Mead's milkweed	*Asclepias meadii*	Threatened	Virgin prairies
Washington	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Wayne	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Webster	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers
Winnebago	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Winneshiek	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
Woodbury	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Least tern	*Sterna antillarum*	Endangered	Bare alluvial and dredged spoil islands
	Piping plover	*Charadrius melodus*	Endangered	
	Pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large rivers
Worth	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil

County	Common Name	Scientific Name	Status	Habitat
Wright	Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows
	Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil
	Topeka shiner	*Notropis topeka*	Endangered	Prairie streams and rivers

Revised September 2007

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

APR 16 2012

Ms. Andrea Martin
Environmental Protection Specialist
Federal Railroad Administration
1200 New Jersey Avenue Southeast,
(Mail Stop 20),
Washington, DC 20590,

Ms. Tamara Nicholson, Director
Office of Rail Transportation,
Iowa Department of Transportation,
800 Lincoln Way,
Ames, Iowa 50010

Subject: U.S. Environmental Protection Agency Scoping comments for Chicago to Omaha High Speed Rail Proposal

Regions 5 (Chicago), and 7 (Kansas City) of the U.S. Environmental Protection Agency (EPA) have reviewed the pre-scoping materials and have participated in the agency scoping meetings conducted on 21 and 22 February, 2012. The EPA will serve as a cooperating agency in this "Tier 1" NEPA process. Region 7 will be the lead region. The following comments have been prepared to assist in focusing the Environmental Impact Statement (EIS) on issues of importance, to identify known environmental constraints, and to promote effective coordination.

The Purpose and Need statement indicates that the study will evaluate "alternatives for the ***reestablishment*** of intercity passenger rail service from Chicago, Illinois, through Iowa, to Omaha, Nebraska". Since intercity rail passenger service currently exists between Chicago and Omaha, the term "re-established" is inappropriate. The EPA's current understanding of the NEPA analysis objective is that the FRA will evaluate alternative routes for establishing high-speed passenger rail service between the termini.

The Proposed Action seeks to "create a competitive rail transportation alternative to the available automobile, bus, and air service and would meet needs for more efficient travel". The EPA recommends that a clarifying statement be made to ensure that the intended rail service is for *passenger* transportation, (exclusive of transporting freight and other commerce) to allow for comparability among the different transportation modes.

The EPA observes that existing track and current railroad operations represent a baseline condition. New track, track that connects between existing routes, and new track geometries for safety and facilitation of higher speed trains should receive focused analysis above the existing condition. Likewise, the EIS should examine the environmental impacts of the stations and support facilities (e.g., storage and maintenance operations) associated with each of the route alternatives.

The Tier 1 process would be expected to eliminate some of the alternatives from further consideration based upon specific criteria. Such criteria might include: higher operating expenditures due to terrain, higher maintenance due to snow/ice frequency and duration, reconstruction costs, safety issues, ridership projections, planned coordination with related transportation services for passengers, and other operational factors (e.g., refueling and crew changes). The Tier I EIS should evaluate how the proposed high-speed service from Chicago to Omaha will interface with existing service through Omaha to San Francisco. Tier 1 considerations should include: 1) selection of the alternative corridors most likely to achieve the lowest environmentally damaging practical alternative under Clean Water Act Section (CWA) 404; 2) growth-related development impacts, 3) potential for community and wildlife impacts, such as noise/vibration and safety and 4) cumulative impacts to resources of concern.

Future "Tier 2" or project-level analyses will address site-specific environmental impacts of the high speed train system. Integrating the requirements of NEPA and CWA Section 404 in Tier 1 should serve to expedite the environmental review and permitting process in Tier 2.

Mr. Norm West will be the contact in Chicago at (312) 353-5692 or west.norman@epa.gov, and I can be reached at (913) 551-7148 or cothern.joe@epa.gov. As a cooperating agency, we look forward to working with you on this project.

Sincerely,

Joseph E. Cothern

Joseph E. Cothern
NEPA Team Leader
Environmental Services Division

cc. Brian Goss, HDR

U.S. Department
Of Transportation

**Federal Aviation
Administration**

Central Region
Iowa, Kansas
Missouri, Nebraska

901 Locust
Kansas City, Missouri 64106-2325

February 21, 2012

Ms. Janet Vine
Iowa Department of Transportation
NEPA Document Manager
800 Lincoln Way
Ames, IA 50010

Re: Chicago to Omaha Regional Passenger Rail Planning Study

Dear Ms. Vine:

The Federal Aviation Administration (FAA) reviews other federal agency environmental documents from the perspective of the FAA's area of responsibility; that is, whether the proposal will have negative effects on aviation. We generally do not provide comments from an environmental standpoint. Therefore, we have reviewed the material furnished with your e-mail dated 2/15/12 and have no comments regarding environmental matters.

Airspace Considerations

The project may require formal notice and review for airspace review under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. To determine if you need to file with FAA, go to http://oeaaa.faa.gov and click on the "Notice Criteria Tool" found at the left-hand side of the page.

Multiple locations will need to be checked because of the length of the route. You should check portions of the route within 5 miles of a public-use or military airport. Airport locations can be found using the "Circle Search for Airports" tab on the left side of the previously mentioned webpage. Other web-based programs may also be useful to locate airports.

If you determine that filing with FAA is required, I recommend a 120-day notification to accommodate the review process and issue our determination letter. Proposals may be filed at http://oeaaa.faa.gov.

More information on this process may be found at:
http://www.faa.gov/airports/central/engineering/part77/

If you have questions, please contact me at glenn.helm@faa.gov or 816-329-2617.

Sincerely,

Glenn Helm, P.E.
Environmental Specialist

NOTE: This letter was e-mailed to email@chicagotoomaha.com with cc to amanda.martin@dot.iowa.gov and janet.vine@dot.iowa.gov. No hard copy will follow.

Goss, Brian

From:	Ward, Julie [julie.l.ward@nebraska.gov]
Sent:	Thursday, May 17, 2012 2:25 PM
To:	Goss, Brian
Subject:	NEPA REVIEW: Chicago to Omaha Regional Passenger Rail

Good afternoon, Brian. Below are our comments on this project.

RE: NEPA Review – Chicago to Omaha Regional Passenger Rail

The Nebraska Department of Environmental Quality (NDEQ) has reviewed the above-mentioned project. As with any facility, permits may be required prior to beginning construction or operation. At a minimum, you should be aware of the possible requirements for the following permits:

- A Construction Storm Water Permit will be required if there is greater than one acre of disturbance of land, which is likely with this project. Highly chlorinated water for main disinfection will require de-chlorination prior to discharge. Please contact Blayne Renner at the number provided below if you have additional questions regarding the NDEQ Construction Storm Water Permit.

- Wastes generated from construction and/or demolition during this project must be properly disposed at a permitted landfill or recycled. If you have questions related to the Waste Program, please contact Jeff Edwards at the number provided below.

- Check with USACE for Section 404 needs.

- Depending on the final route and location in Douglas County as well as installation of stationary equipment NDEQ Title 129 (outside of city limits) and/or Omaha Air Quality Control regulations (inside of city limits) would apply to the following:

1. Land clearing and construction-disposal of waste materials by open burning must be permitted by NDEQ and/or City of Omaha.
2. Asbestos assessment and abatement is needed prior to any structure demolition. Prior notification to NDEQ and City of Omaha required.
3. Fugitive dust control during all land clearing and construction activities is required by NDEQ and City of Omaha. Any contamination of city
roadways will require prevention and/or clean-up per the City of Omaha specifications.
4. Construction and/or Operating permits for stationary engines, boilers, emergency generation equipment and other equipment may
be required by the City of Omaha Air Quality Control and/or NDEQ.

Construction Storm Water Program – Blayne Renner, 402-471-8330
Waste Compliance – Jeff Edwards, 402-471-8309
Air Quality Program – Yvonne Austin, 402-471-3305

Until further along in the planning process, it is unknown whether there may be additional regulatory requirements. We strongly urge the project sponsors to make contact with the Department; contact numbers are provided above. It has been our experience that early and open communication helps facilitate the permitting process.

If you have questions about the permitting process, or any other questions, feel free to contact me at (402) 471-6974. For more information, please visit our website at www.deq.state.ne.us. Good luck with your project!

Julie L. Ward
National Environmental Policy Act (NEPA) Coordinator
NE Department of Environmental Quality
1200 "N" Street, The Atrium, Suite 400
P.O. Box 98922, Lincoln, NE 68509-8922
Phone: 402.471.6974 | E-mail: julie.l.ward@nebraska.gov

- *Please consider the environment before printing this email.*

From: Zheng, Shuhai [mailto:shuhai.zheng@nebraska.gov]
Sent: Wednesday, June 06, 2012 12:10 PM
To: Martin, Amanda [DOT]
Cc: Dunnigan, Brian
Subject: Tier 1 EIS for the Chicago to Omaha Regional Passenger Rail System

Dear Amanda,

Our agency Director Brian Dunnigan received an e-mail from Tammy Nicholson (Director if Iowa's Office of Rail Transportation) on May 31, 2021, seeking our comments on issues which should be addressed in your Tier EIS for the Chicago to Omaha Regional Passenger Rail System. Mr. Dunnigan forwarded the e-mail message to me and asked me to respond. Brian and I really appreciate the opportunity.

Our agency's statutory responsibilities includes surface water right administration, groundwater well registration and floodplain management programs. Based on my initial review of the 5 proposed routes of the Rail System, I don't believe they will have significant impact on Nebraska's surface and ground water resources. Should the segment of any proposed routes requiring new infrastructures in a floodplain/floodway in Nebraska, its impact on floodplain shall be assessed and addressed. When your project moves into its Tier 2 Phase (design and construction), a floodplain development permit is required from City of Omaha and/or Douglas County before any construction can begin in a floodplain within their jurisdiction.

Please keep us informed about your project progress and the availability of the Tier 1 EIS. If you need additional information from our agency, please feel free to contact me.

Sincerely,

Shuhai

Shuhai Zheng, Ph.D., P.E., CFM
Head, Floodplain/Dam Safety/Survey Division
Department of Natural Resources
P.O. Box 94676
Lincoln, NE 68509
Phone: 402-471-3936
Fax: 402-471-2900
Web: www.dnr.ne.gov

IOWA DEPARTMENT OF
CULTURAL
AFFAIRS
MARY TIFFANY COWNIE, DIRECTOR

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

STATE HISTORICAL SOCIETY of IOWA
JEROME THOMPSON
ADMINISTRATOR

IOWA ARTS COUNCIL
MATTHEW HARRIS
ADMINISTRATOR

600 E. LOCUST
DES MOINES, IOWA
50319

T. (515) 281-5111
F. (515) 282-0502

CULTURALAFFAIRS.ORG

June 11, 2012

In reply refer to:
R&C#: 120500095

David Valenstein, Division Chief
Environment and Systems Planning
Federal railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: FRA – STATEWIDE – CHICAGO TO OMAHA REGIONAL PASSENGER RAIL SYSTEM – PROPOSED TIER 1 ENVIRONMENTAL IMPACT STATEMENT (EIS) PROJECT – INVITATION TO BECOME A COOPERATING AGENCY

Dear Mr. Valenstein,

Thank you for notifying our office about the above referenced proposed project. Thank you for inviting our agency to become a Cooperating Agency as part of the environmental review process. We accept your invitation.

We understand that the intent of the Federal Railroad Administration is to initiate and conduct a tiered environmental assessment process. It appears that the Tier 1 EIS project will be exploring and considering a number of alternatives for passenger rail routes between Chicago, Illinois and Omaha, Nebraska. We understand that the purpose of the Tier 1 does not involve consultation regarding specific construction activities or about the potential historic properties that may be affected by specific construction activities. We understand that those consultations will occur as part of the Tier 2 NEPA documents and perhaps in separate Section 106 consultation documents.

Based on the information provided regarding the undertaking, it is unclear at this time whether any historic properties would be affected by use of any of these possible routes. However, our office is aware that the rail segment from Davenport to Iowa City (which would be part of Route 4) was one of the earliest railroad lines constructed in the state of Iowa. It appears that the location of this rail line has not changed very much since its original construction in 1855. We are also aware that two significant historic events occurred on this rail line segment. On March 10, 1859, John Brown and his contingent of men and freedom seekers boarded a boxcar on an eastbound train at West Liberty and left the state of Iowa for the last time at Davenport on their way to Chicago and eventually Canada. This was John Brown's last trip through Iowa prior to the raid at Harpers Ferry. Also, this line was used by the Mormons during their exodus from the state of Illinois to transport many people to Iowa City. Upon reaching Iowa City (which was then the end of the rail line during that time period), the Mormon families began on the Mormon Handcart Expedition which headed westward eventually leading to their new home in Utah.

Please reference the Review and Compliance Number provided above in all future submitted correspondence to our office for this project. We look forward to further consulting with your agency and the Iowa Department of Transportation on this project. Should you have any questions please contact me at the number below.

Sincerely,

Douglas W. Jones

Douglas W. Jones, Archaeologist and Review and Compliance Program Manager
and Interim Deputy State Historic Preservation Officer
State Historic Preservation Office
State Historical Society of Iowa
(515) 281-4358
doug.jones@iowa.gov

cc: Ralph Christian, Historian, State Historical Society of Iowa
Daniel Higginbottom, Archaeologist, State Historical Society of Iowa
Andrea Martin, Federal Railroad Administration
Amanda Martin, IDOT, Ames
Jerome Thompson, Interim Iowa State Historic Preservation Officer

From: Phan, Dee (FTA)
Sent: Wednesday, May 30, 2012 12:53 PM
To: Martin, Andrea (FRA)
Subject: Re: Tier 1 EIS for Chicago to Omaha Regional Passenger Rail System

Andrea,

Thank you for your letter dated May 17, 2012, whereby you invited FTA to become a Cooperating Agency on the proposed subject project. We decline to be a Cooperating Agency because we have no jurisdiction or authority pertaining to the project at this time.

Thank you,

Dee Phan

Environmental Protection Specialist
FTA Region VII
901 Locust St., Suite 404
Kansas City, MO 64106
Phone: 816-329-3934
Fax: 816-329-3921
Email: Dee.Phan@dot.gov

Nebraska Game and Parks Commission
2200 N. 33rd St. / P.O. Box 30370 / Lincoln, NE 68503-0370
Phone: 402-471-0641 / Fax: 402-471-5528 / www.OutdoorNebraska.org

July 3, 2012

Tammy Nicholson, Director
Office of Rail Transportation
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

RE: Tier 1 EIS for the Chicago to Omaha Regional Passenger Rail System

Dear Ms. Nicholson:

Nebraska Game and Parks Commission (NGPC) staff members have reviewed the information for the proposal identified above. This review was requested pursuant to the National Environmental Policy Act (NEPA). The Nebraska Game and Parks Commission is the state agency responsible for managing the fish, wildlife, and parkland resources in Nebraska. Our comments are for your consideration and are offered to reduce impacts to natural resources in the portion of the project area that is in Nebraska.

As we understand, the majority of the project lies outside the boundaries of the state of Nebraska. Only a very small portion of the project will involve a crossing of the Missouri River, and rail to an endpoint station/terminal in or near downtown Omaha.

As mentioned above, the project would involve a crossing of the Missouri River. In general, NGPC has concerns for impacts to wetlands, streams and riparian habitats. We encourage that impacts to wetlands, streams, and associated riparian corridors be avoided and minimized, and that any unavoidable impacts to these habitats be mitigated. If any fill materials will be placed into any wetlands or streams as a result of the proposed project, the U.S. Army Corps of Engineers should be contacted to determine if a 404 permit is needed.

Several state-listed threatened and endangered species are known to occur in the Missouri River, including the state-listed endangered pallid sturgeon (*Scaphirhyncus albus*), the state-listed threatened lake sturgeon (*Acipenser fulvescens*), and the state-listed endangered sturgeon chub (*Macrhybopsis gelida*).

The pallid sturgeon feeds on small fish and invertebrates and is known to use sites with sharp slopes associated with downstream edges of submerged riverine sandbars. Most occurrence records are near confluences, islands, and at the downstream margins of sandbars. The primary migration and spawning periods for pallid sturgeon in the Missouri River bordering Nebraska are from March 1 to June 30.

The lake sturgeon is believed to occupy similar habitats as the pallid sturgeon (see above), but spends a greater proportion of its time in the Missouri than the Platte River. Lake sturgeon feed on invertebrates and small fish and can be found at the downstream margins of island and river confluences. This fish spawns between February 1 and July 31, depending on river conditions.

The sturgeon chub is associated with fast flowing, turbid water and gravel substrate. This species has been collected in side chutes and backwaters, as it is thought that these kinds of areas provide spawning habitat for the fish. Sturgeon chub feed on invertebrates. This fish spawns between February 1 and July 31, depending on river conditions.

If the rail line would cross the Missouri River on an existing bridge structure, then adverse impacts to the above-mentioned fish species are not likely to occur. However, if the rail line would cross the Missouri River on a new alignment or would cross on an existing structure that would be upgraded, and involve bridge construction activities taking place in the water, then there is potential for impacts to these fish species. If construction work would need to take place in the water, we would recommend that construction activities be avoided in the Missouri River during the primary migration and spawning periods for the listed fish species mentioned above. Avoiding work in the river during these timeframes will help prevent material, including riverbed and riverbank sediment stirred up during construction activities, from covering eggs and altering spawning habitat. Also, construction/repair activities in the river can alter fish movements by creating sound barriers and/or altering flow patterns, which can adversely affect migration patterns.

Migratory Bird Treaty Act

Under the federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712: Ch. 128 *as amended*) construction activities in grassland, wetland, stream, woodland, and river bank habitats that would otherwise result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of April 1 to July 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15, whereas sedge wrens, which occur in some wetland habitats, normally nest from July 15 to September 10.

If development of the project is planned to occur during the primary nesting season or at any other time which may result in the "take" of nesting migratory birds, we would request that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the absence or presence of nesting migratory birds. If a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities, the U.S. Fish and Wildlife Service should be contacted immediately. For more information about the MBTA and avoiding impacts to migratory birds, or to report active bird nests that cannot be avoided by planned construction activities, please contact the U.S. Fish and Wildlife Service, Nebraska Field Office in Grand Island, NE. Adherence to these guidelines will help avoid the unnecessary take of migratory birds.

Bald and Golden Eagle Protection Act
The federal Bald and Golden Eagle Protection Act (Eagle Act) provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). Bald eagles utilize mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska, including the Missouri River. The bald eagle southward migration begins as early as October and the wintering period extends from December-March. The golden eagle is found in arid open country with grassland for foraging in western Nebraska and usually near buttes or canyons which serve as nesting sites. Golden eagles are often a permanent resident in the Pine Ridge area of Nebraska. Additionally, many bald and golden eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-mile of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Both bald and golden eagles frequent river systems in Nebraska during the winter where open water and forested corridors provide feeding, perching, and roosting habitats, respectively. The frequency and duration of eagle use of these habitats in the winter depends upon ice and weather conditions. Human disturbances and loss of wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These affects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species.

To comply with the Eagle Act, it is recommended that the project proponent determine whether the proposed project would impact bald or golden eagles. If it is determined that either species could be affected by the proposed project, we recommend that the project proponent notify this office as well as the U.S. Fish and Wildlife Service office in Grand Island for recommendations to avoid adverse impacts to bald and golden eagles.

Thank you for the opportunity to review this proposal. We look forward to receiving a copy of the draft EIS when it becomes available. If you have any questions regarding these comments, please feel free to contact me at (402) 471-5423 or carey.grell@nebraska.gov.

Sincerely,

Carey Grell

Carey Grell
Environmental Analyst
Environmental Services Division

U.S. Department of
Homeland Security

United States
Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: dwb
Phone: (314)269-2378
Fax: (314)269-2737
Email: [illegible]@uscg.mil
www.uscg.mil/d8/westernriversbridges

16591.1/Omaha
June 25, 2012

Mr. David Valenstein, Division Chief
Federal Railroad Administration
Environment and Systems Planning
1200 New Jersey Avenue, SE
Washington, DC 20590

Subj: CHICAGO TO OMAHA REGIONAL PASSENGER RAIL SYSTEM, TIER 1 ENVIRONMENTAL IMPACT STATEMENT (EIS)

Dear Mr. Valenstein:

This is in reply to your letter of May 17, 2012, concerning the proposed Chicago to Omaha Regional Passenger Rail System.

The General Bridge Act of 1946 requires that the location and plans for bridges over navigable waters of the United States be approved by the Commandant, U.S. Coast Guard prior to commencing construction. The rivers within the subject project may be considered navigable waterways of the United States for bridge administration purposes.

Applications for bridge permits should be addressed to Commander (dwb), Eighth Coast Guard District, 1222 Spruce Street, St. Louis, Missouri 63103-2832, Attn: Bridge Branch. The application must be supported by sufficient information to permit a thorough assessment of the impact of the bridge and its immediate approaches on the environment. We recommend that the impacts of procedures for constructing cofferdams, sand islands, and falsework bents, etc., that will be employed to build the bridge and demolish the old bridge be discussed. The Environmental Assessment (EA) should also contain data on the number, size and types of vessels currently using the waterway. This information should be compared with past and projected future trends on the use of the waterway.

We agree to serve as a Cooperating Agency for the project from a navigation standpoint. We should be given the opportunity to review the EA and be consulted before a decision is made to prepare a Finding of No Significant Impact (FONSI) in lieu of an EIS. Our review and recommendations on the vertical and horizontal clearance requirements for river traffic will be coordinated with the Iowa Department of Transportation Bridge and Structure Division office.

Subj: CHICAGO TO OMAHA REGIONAL PASSENGER RAIL SYSTEM, 16591.1/Omaha
TIER 1 ENVIRONMENTAL IMPACT STATEMENT (EIS) June 25, 2012

We appreciate the opportunity to comment on the project in this early stage. You can contact Mr. Rodney Wurgler at the above telephone number if you have questions regarding our comments or requirements.

Sincerely,

William F. Kastner
for ERIC A. WASHBURN
Bridge Administrator, Western Rivers
By direction of the District Commander

From:	andrea.martin@dot.gov
To:	anne.haaker@illinois.gov; jerome.thompson@iowa.gov; jill.dolberg@nebraska.gov
Cc:	Amanda.Martin@dot.iowa.gov; brad.koldehoff@illinois.gov; Goss, Brian
Subject:	RE: Chicago, IL to Omaha, NE, Regional Passenger Rail System Planning Study
Date:	Tuesday, July 31, 2012 7:52:28 AM

Good morning; two weeks ago I sent an email to you about the Chicago, IL to Omaha, NE, Regional Passenger Rail System Planning Study APE.

I wanted to clarify information in the correspondence; the proposed APE would extend 250 feet on either side of the rail centerline similar to other Midwest passenger rail corridors, for an estimated total of 500 feet. Additionally, Route Alternative 4-A is being evaluated as the Build Alternative and includes a portion of the California Zephyr route from Chicago Union Station to Wyanet, IL along the former Burlington line (currently the Burlington Northern and Santa Fe Railway (BNSF)). The California Zephyr route continues from Wyanet to Omaha along BNSF rail whereas the Build Alternative includes the former Rock Island line (now Iowa Interstate Railroad) between Wyanet and Omaha, NE.

Please do not hesitate to contact me if you have any questions. Thank you again for your assistance, and I look forward to working with you as our project moves forward.

Andrea

From: Martin, Andrea (FRA)
Sent: Thursday, July 19, 2012 10:29 AM
To: anne.haaker@illinois.gov; 'jerome.thompson@iowa.gov'; 'jill.dolberg@nebraska.gov'
Cc: Martin, Amanda [DOT] (Amanda.Martin@dot.iowa.gov); brad.koldehoff@illinois.gov; Martin, Andrea (FRA)
Subject: RE: Chicago, IL to Omaha, NE, Regional Passenger Rail System Planning Study

RE: Chicago, IL to Omaha, NE, Regional Passenger Rail System Planning Study

Dear SHPO:

On March 15, 2012, the Federal Railroad Administration (FRA) published a Notice of Intent (NOI) http://www.gpo.gov/fdsys/pkg/FR-2012-03-15/pdf/2012-6304.pdf to prepare a Tier 1 Environmental Impact Statement (EIS) to evaluate potential passenger rail improvements for the Chicago to Omaha Regional Passenger Rail System in compliance with the National Environmental Policy Act (NEPA). The NOI identified FRA as lead federal agency for purposes of Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470(f)), and determined, pursuant to 36 CFR Section 800.3(a), that the proposed project qualified as an undertaking subject to Section 106 review. FRA will coordinate public involvement for purposes of Section 106 with the NEPA public scoping process for the preparation of the Tier 1 Service Level EIS.

As part of the effort to identify historic properties for purposes of Section 106, FRA proposes an Area of Potential Effects (APE) that would include 500 feet from the rail centerline of Route Alternative 4-A (see attachment). Route Alternative 4-A is the current California Zephyr route between Chicago, IL and Omaha, NE and occurs entirely on the former Burlington line, now Burlington Northern and Santa Fe Railway (BNSF). Route Alternative 4-A extends along the BNSF between Chicago Union Station and Wyanet, Illinois and then along the former Rock Island line, now Iowa Interstate Railroad, between Wyanet and Omaha. This alternative will be carried forward for detailed evaluation under the Tier 1 EIS after the alternatives screening: http://www.iowadot.gov/chicagotoomaha/pdfs/DraftAlternativeAnalysisReport.pdf.

The APE will constitute the area within which detailed review of existing information on historic properties will proceed, including examination of records maintained by your office and others. . The Tier 1 analysis would be performed without any field work for environmental resources; specific effect determinations would not be conducted during Tier 1. Iowa Department of Transportation will be contacting the SHPO offices for more information

After the Tier 1 Record of Decision is signed by FRA, future design is planned to be performed to identify a preferred footprint, and any necessary field studies for cultural resources would be conducted during Tier 2 Project Level NEPA evaluations. Effect determinations on historic properties would be proposed to State Historic Preservation Offices (SHPOs) and Tribal Historic Preservation Offices (THPOs), as appropriate. If any adverse effects are identified during the Tier 2 Project Level NEPA process, they would be addressed through consultation and in compliance with 36 CFR 800.5 and 800.6. Please respond to this determination of the APE with your concurrence. If we do not receive your response within 30 days of receipt, FRA will assume your concurrence in accordance with 36 CFR Section 800.3(c)(4).

Thank you for your consideration of this matter. If you have any questions or concerns, please contact me at 202-493-6201, or by email Andrea.Martin@dot.gov.

Sincerely,

Andréa Martin
Environmental Protection Specialist
Federal Railroad Administration

Attachment: Map of Route Alternative 4-A

cc: Amanda Martin, Project Manager, Iowa DOT
Brad Koldehoff, Illinois DOT

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 67, Room 118
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

IN REPLY REFER TO

December 17, 2012

9043.1
ER 12/816

Joseph C. Szabo, Administrator
Federal Railroad Administration
1200 New Jersey Avenue S.E, Mail Stop 20
Washington, D.C. 20590

Dear Mr. Szabo:

The Department of the Interior has reviewed the Draft Environmental Impact Statement (EIS) Department of Transportation (DOT), Federal Railroad Administration (FRA) for Chicago to Council Bluffs - Omaha Regional Passenger Rail System Planning Study Tier 1 Service Level, from Chicago, Illinois through Iowa and Omaha, NE, and offers the following comments provided by the U.S. Fish and Wildlife Service.

General Comments

The Secretary of the Interior, acting through the Fish and Wildlife Service, has primary responsibility for the management of the nation's fish and wildlife resources. The Fish and Wildlife Act of 1956, as amended, requires the Secretary to determine the policies and procedures necessary to implement fish and wildlife laws efficiently and in the national public interest. 16 U.S.C. § 742f(a). The Secretary has additional responsibilities to protect and manage the nation's fish and wildlife resources under other statutory authorities, namely: the Bald and Golden Eagle Act, 16 U.S.C. §§ 668-669(d); the Endangered Species Act, as amended, 16 U.S.C. §§ 1531-1543; and the Migratory Bird Treaty Act, 16 U.S.C. §§ 703-711.

To ensure the adequate and equitable protection, mitigation of damage to, and enhancement of fish and wildlife resources, Federal Railroad Administration/U.S.DOT, Iowa DOT should consult with the U.S. Fish and Wildlife Service (FWS) and State natural resource agencies to identify necessary studies. FWS has participated in scoping meetings for this Project and is aware that required studies will be addressed during the Tier 2 phase of this project. Most mitigation measures represent commitments for further coordination with this agency during Tier 2 studies as more detailed information on the design of the Project is developed.

Fish and Wildlife Trust Resources

There are significant public resources that must be protected or enhanced in some areas affected by the proposed project. In this regard, FWS concerns with the proposed Regional Passenger

Rail System from Chicago to Omaha and associated supporting development include potential adverse impacts to federal trust fish and wildlife resources and their supporting riparian, wetland, and terrestrial habitats. Particularly important are potential effects of project operation on the terrestrial environment, wetlands habitat, and migration pathways. In addition, lands managed as part of the National Wildlife Refuge System are located near the project and may be affected by project impacts to rivers (Mississippi River and Missouri River) and surrounding landscapes.

Threatened & Endangered Species

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. Listed species for counties in Illinois and Iowa (Region 3), and Nebraska (Region 6), may be viewed at http://www.fws.gov/midwest/Endangered for Region 3 and http://www.fws.gov/mountain-prairie/endspp/ for Region 6. At a minimum, project evaluations should contain delineations of whether or not habitat for these species occurs within project boundaries, or will be affected by project construction and subsequent operation. In cases where these species are known to occur or potential habitat is rated moderate to high, surveys may be necessary. Please contact this office for further information should these species or their habitats be identified in the project area, or be affected by project activities.

As of August 9, 2007, the bald eagle is no longer included on the list of threatened and endangered species, but it remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle is a potential resident in parts of the project area and nests have been historically documented in the project area. Project evaluations should include potential impacts to the bald eagle and its habitat. For more information concerning the bald eagle protection, or if impacts to this species are expected, the USFWS should be contacted.

Migratory Birds

We recommend that the project be evaluated for potential impacts to wildlife, particularly migratory birds, from increased noise and vibration resulting from increases in train frequency and speed for the alternatives considered.

If you have questions regarding these comments, please contact Heidi Woeber, U.S. Fish and Wildlife Service, 1511 47th Avenue, Moline, IL 61265, (309) 757-5800, ext. 209.

Sincerely,

Robert F. Stewart

Robert F. Stewart
Regional Environmental Officer

cc: Andrea Martin, FRA
Tammy Nicholson, IA DOT
Miriam Gutierrez, IL DOT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

DEC 2 1 2012

Andréa Martin
Environmental Protection Specialist
Federal Railroad Administration
1200 New Jersey Avenue Southeast (Mail Stop 20),
Washington, DC 20590

Dear Ms. Martin:

RE: Draft Environmental Impact Statement for Chicago to Council Bluffs - Omaha Regional Passenger Rail System Planning Study Tier 1 Service Level, from Chicago, Illinois through Iowa and Omaha, Nebraska

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act, the U.S. Environmental Protection Agency Regions 5 and 7, have reviewed the Federal Railroad Administration's Draft Environmental Impact Statement on the Planning Study for the Regional Passenger Rail System. This DEIS was assigned a Council on Environmental Quality identification number of 20120354.

Our review has concluded that adequate analysis of environmental issues relevant to the selection of the preferred alternative was performed. Therefore, EPA has assigned a rating of Lack of Objections to the DEIS. A copy of EPA's rating system is enclosed for your information.

To assist the FRA in enhancing the Final EIS, and to focus Tier II analysis, EPA provides the following comments:

1. Coarse and Fine level screening occurred within corridors that were 500 foot wide and 100 foot wide(plus a buffer of 25-50 feet), respectively (ES. 3.2.1, ES. 3.2.2.2). However the table of impact (ES-1) does not clearly indicate at what scale the potential impacts are accounted. EPA recommends that the FEIS more clearly describe the study envelopes of: existing Right of Way, Right of Way (plus any additional included study area) for the fine screening, and the 500 foot study area in the coarse screening.

2. ES. 4.22 (Energy Use and Climate Change) predicts considerable decreases in automobile and bus passenger-miles per year and resultant decreases in greenhouse gasses. This section also predicts an automobile fuel decrease of approximately 12 million gallons. Does these predictions account for the increased diesel fuel usage for the rail system?

3. Section 2.2.2.2 (Station Stops). Vitally important to air quality analysis in Tier II studies, will be the amount of time spent by the train at these stations, the emission factors of the locomotives while idling, the land-use/human population at that location, and the baseline air quality condition (attainment/non-attainment/maintenance) at those stops. EPA invites FRA to use of

spatial data tools such as NEPAssist (http://nepassisttool.epa.gov/nepassist/entry.aspx) to help convey the potential impact of rail system pollutant sources upon receptors near these stops.

4. Section 3.10.2 provides some general information on three Superfund sites. For additional information on these sites, and most recent points-of-contact please refer to the following fact sheets: http://www.epa.gov/region07/cleanup/npl_files/iad980687933.pdf, http://www.epa.gov/region07/cleanup/npl_files/ia0001610963.pdf and, http://www.epa.gov/region07/cleanup/npl_files/ia0001610963.pdf.

5. The Draft EIS states that there will be a connection built for the BNSF and Amtrak lines and ancillary facilities built around Wyanet, Illinois. Currently, there are no existing facilities, nor a connection between BNSF and Amtrak lines. Further examination and information related to environmental and public health impacts should be included in the Tier II documents. This analysis should include noise, air emission (especially diesel), storm water run-off, implications to local traffic and any impacts to sensitive populations.

Thank you for the opportunity to review and provide comments on the DEIS. If you have questions or require additional clarification, please contact Shanna Horvatin at 312-886-7887, or myself at 913-551-7148.

Sincerely,

Joseph E. Cothern

Joseph E. Cothern
NEPA Team Leader

cc: Amanda Martin, Freight and Passenger Rail Policy Coordinator,Office of Rail Transportation
Iowa Department of Transportation, 800 Lincoln Way, Ames, IA 50010

Draft Environmental Impact Statement Rating Definitions

Environmental Impact of the Action

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative. EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

Metra
The way to really fly
547 W. Jackson Blvd. Chicago, IL 60661 (312) 322-6900 TTY# 1-312-322-6774

January 30, 2013

Ms. Amanda Martin
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

Dear Ms. Martin:

Metra offers the following comments regarding the Chicago to Council Bluffs – Omaha Tier 1 Service Level Draft Environmental Impact Statement (EIS).

The document states that Alternative 4, which utilizes Metra Rock Island District (RID) track between Chicago and Joliet, is "neither reasonable or feasible" because it lacks a connection to Chicago Union Station (CUS). However, the Chicago – St. Louis High Speed Rail Final EIS, released in late October, identified the RID as the preferred route between Joliet and Chicago. A connection would be added between the RID and Norfolk Southern/SouthWest Service track at 40th Street, allowing trains to enter CUS. Chicago – Omaha service utilizing the RID could also use this connection, and utilize additional track and signals along the corridor added to accommodate the St. Louis service.

Metra understands that capacity modeling will take place during the Tier 2 study. Thorough analysis is critical in order to fully identify the track and signal improvements and additional right-of-way needed to support the new service in addition to existing and proposed freight, commuter, and intercity passenger trains on the route, especially in the congested Chicago – Aurora segment. Here, capacity is particularly constrained during peak commuter traffic periods in the morning and afternoon. Metra wants to ensure that capacity is preserved for future expansion of Metra service in this successful and growing commuter corridor. Metra strongly recommends that the project team work closely with the BNSF and other railroad owners in the study area, so that the next phase of analysis accurately reflects current and future demands on the rail network.

As noted in the Tier 1 EIS document, Preliminary Engineering and an Environmental Assessment of a proposed extension of commuter service on the BNSF to Oswego are currently underway. The potential addition of Metra traffic on this segment of the line needs to be considered during Tier 2 when determining infrastructure improvements and right-of-way costs for the Chicago – Omaha service.

Currently, the south side of CUS is at capacity during much of the day, with a limited ability to accommodate additional trains. Recommendations to address this issue were developed as part of the CUS Master Plan study, and also include the relocation of Metra's SouthWest Service from CUS to LaSalle Street Station, as proposed in the CREATE Program. These recommendations, their timeline for implementation, and previous proposals for new train service that would utilize the south platforms of CUS, should be considered during the Tier 2 analysis.

Metra requests that additional efforts should be made to include all stakeholders in the process early and often during subsequent portions of this study. If you have any questions, or would like to arrange a meeting or conference call, don't hesitate to contact me directly or Lynnette Ciavarella at (312) 322-8022 or lciavare@metrarr.com to facilitate this conversation.

Sincerely,

Alexander D. Clifford
Executive Director/CEO

cc: D. Orseno, S. Smith, L. Ciavarella

Chicago to Omaha
Agency Comments on the Draft EIS

#5599 Web Comment from D Cavin (City of Durant, IA) 12/12/2012

Website Comment

Summary: As a small city, our biggiest concerns are the speed the trains will travel through our city, and the maintenance of the crossings, as well as the # of trains. Our city is split by the Rock Isalnd Line tracks. Existing trains travel 45 mph through town or faster. There have been numerous times in the last 6 months where all our crossings were blocked by a train. THis severely impedes our emergency vehicles from getting from side of the city to the other or even out into the rural areas they cover. We also do not want the responsibility of maintaining the crossings or upgrading the existing. We had hoped the passenger rail would actually by pass the City of Durant since we would not any depot for passengers to load or unload. What are the plans for small towns affected by passenger rail? We certainly do not want an increase in the number of trains passing through. Personally, I feel it is unfair that larger metropilis cities are favored and will benefit the most. THe smaller cities, once again, will just be run over, and we are struggling to survive now with DNR compliance for waste water and storm water requirements. THen the cutting of commercial property taxes.....when do little cities get a chance to be heard? We have to rtavel miles and miles to even get to a public hearing. Some may view this as exciting news, however, small city governments, view it as another hammer coming down on them with little choice to oppose.

Deana Cavin
City of Durant

#5771 Comment Letter from R Stewart (DOI) 12/17/2012

Comment

Summary: Dear Mr. Szabo: The Department of the Interior has reviewed the Draft Environmental Impact Statement (EIS) Department of Transportation (DOT), Federal Railroad Administration (FRA) for Chicago to Council Bluffs - Omaha Regional Passenger Rail System Planning Study Tier 1 Service Level, from Chicago, Illinois through Iowa and Omaha, NE, and offers the following comments provided by the U.S. Fish and Wildlife Service. General Comments The Secretary of the Interior, acting through the Fish and Wildlife Service, has primary responsibility for the management of the nation's fish and wildlife resources. The Fish and Wildlife Act of 1956, as amended, requires the Secretary to determine the policies and procedures necessary to implement fish and wildlife laws efficiently and in the national public interest. 16 U.S.C. § 742f(a). The Secretary has additional responsibilities to protect and manage the nation's fish and wildlife resources under other statutory authorities, namely: the Bald and Golden Eagle Act, 16 U.S.C. §§ 668-669(d); the Endangered Species Act, as amended, 16 U.S.C. §§ 1531-1543; and the Migratory Bird Treaty Act, 16 U.S.C. §§ 703-711. To ensure the adequate and equitable protection, mitigation of damage to, and enhancement of fish and wildlife resources, Federal Railroad

Administration/U.S.DOT, Iowa DOT should consult with the U.S. Fish and Wildlife Service (FWS) and State natural resource agencies to identify necessary studies. FWS has participated in scoping meetings for this Project and is aware that required studies will be addressed during the Tier 2 phase of this project. Most mitigation measures represent commitments for further coordination with this agency during Tier 2 studies as more detailed information on the design of the Project is developed. Fish and Wildlife Trust Resources There are significant public resources that must be protected or enhanced in some areas affected by the proposed project. In this regard, FWS concerns with the proposed Regional Passenger Mr. Joseph C. Szabo 2 Rail System from Chicago to Omaha and associated supporting development include potential adverse impacts to federal trust fish and wildlife resources and their supporting riparian, wetland, and terrestrial habitats. Particularly important are potential effects of project operation on the terrestrial environment, wetlands habitat, and migration pathways. In addition, lands managed as part of the National Wildlife Refuge System are located near the project and may be affected by project impacts to rivers (Mississippi River and Missouri River) and surrounding landscapes. Threatened & Endangered Species Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. Listed species for counties in Illinois and Iowa (Region 3), and Nebraska (Region 6), may be viewed at http://www.fws.gov/midwest/Endangered for Region 3 and http://www.fws.gov/mountainprairie/endspp/ for Region 6. At a minimum, project evaluations should contain delineations of whether or not habitat for these species occurs within project boundaries, or will be affected by project construction and subsequent operation. In cases where these species are known to occur or potential habitat is rated moderate to high, surveys may be necessary. Please contact this office for further information should these species or their habitats be identified in the project area, or be affected by project activities. As of August 9, 2007, the bald eagle is no longer included on the list of threatened and endangered species, but it remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle is a potential resident in parts of the project area and nests have been historically documented in the project area. Project evaluations should include potential impacts to the bald eagle and its habitat. For more information concerning the bald eagle protection, or if impacts to this species are expected, the USFWS should be contacted. Migratory Birds We recommend that the project be evaluated for potential impacts to wildlife, particularly migratory birds, from increased noise and vibration resulting from increases in train frequency and speed for the alternatives considered. If you have questions regarding these comments, please contact Heidi Woeber, U.S. Fish and Wildlife Service, 1511 47th Avenue, Moline, IL 61265, (309) 757-5800, ext. 209.

Robert Stewart
US Department of Interior

#6046 Comment Letter from USEPA 12/21/2012

Comment

Summary: In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act, the U.S. Environmental Protection Agency Regions 5 and 7, have reviewed the Federal Railroad Administration's Draft Environmental Impact Statement on the Planning Study for the Regional Passenger Rail System. This DEIS was assigned a Council on Environmental Quality identification number of20120354. Our review has concluded that adequate analysis of environmental issues relevant to the selection of the preferred alternative was performed. Therefore, EPA has assigned a rating of Lack of Objections to the DEIS. A copy of EPA's rating system is enclosed for your information. To assist the FRA in enhancing the Final EIS, and to focus Tier II analysis, EPA provides the following comments: 1. Coarse and Fine level screening occurred within corridors that were 500 foot wide and 100 foot wide (plus a buffer of 25-50 feet), respectively (ES. 3 .2.1, ES. 3 .2.2.2). However the table of impact (ES-1) does not clearly indicate at what scale the potential impacts are accounted. EPA recommends that the FEIS more clearly describe the study envelopes of: existing Right of Way, Right of Way (plus any additional included study area) for the fine screening, and the 500 foot study area in the coarse screening. 2. ES. 4.22 (Energy Use and Climate Change) predicts considerable decreases in automobile and bus passenger-miles per year and resultant decreases in greenhouse gasses. This section also predicts an automobile fuel decrease of approximately 12 million gallons. Does these predictions account for the increased diesel fuel usage for the rail system? 3. Section 2.2.2.2 (Station Stops). Vitally important to air quality analysis in Tier II studies, will be the amount of time spent by the train at these stations, the emission factors of the locomotives while idling, the land-use/human population at that location, and the baseline air quality condition (attainment/non-attainment/maintenance) at those stops. EPA invites FRA to use of spatial data tools such as NEPAssist (http: //nepassisttool.epa.gov/nepassist/entry.aspx) to help convey the potential impact of rail system pollutant sources upon receptors near these stops. 4. Section 3.1 0.2 provides some general information on three Superfund sites. For additional information on these sites, and most recent points-of-contact please refer to the following fact sheets: http:/ /www.epa.gov/region07 /cleanup/npl files/iad98068793 3 .pdf, http://www .epa.gov/region07 /cleanup/npl files/iaOOO 1610963 .pdf and, http://www .epa.gov/region07 /cleanup/npl files/iaOOO 161 0963 .pdf. 5. The Draft EIS states that there will be a connection built for the BNSF and Amtrak lines and ancillary facilities built around Wyanet, Illinois. Currently, there are no existing facilities, nor a connection between BNSF and Amtrak lines. Further examination and information related to environmental and public health impacts should be included in the Tier II documents. This analysis should include noise, air emission (especially diesel), storm water run-off, implications to local traffic and any impacts to sensitive populations. Thank you for the opportunity to review and provide comments on the DEIS. If you have questions or require additional clarification, please contact Shanna Horvatin at 312-886-7887, or myself at 913-551-7148.

Joe Cothern
US Environmental Protection Agency

#5769 Email Comment from K Andersen (Metra) 12/21/2012

Comment

Summary: Metra is still preparing comments to the Draft EIS, and unfortunately our response will not be ready by the end of the comment period on 12/26/12. We will submit our comments in January.

Kristen Andersen
Metra Commuter Rail

#5845 Comment Letter from IA SHPO 12/5/2012

Comment

Summary: We have received and reviewed the above referenced document. We understand that the intent of the Federal Railroad Administration is to initiate and conduct a tiered environmental assessment process. We understand that the purpose of the Tier 1 does not involve consultation regarding specific construction activities or about the potential historic properties that may be affected by specific construction activities. We understand that those consultations will occur as part of the Tier 2 NEPA documents and perhaps in separate Section 106 consultation documents. We do not have any comments on this draft document. We look forward to further consulting with your agency and the Iowa Department of Transportation on this project. Please reference the Review and Compliance Number provided above in all future submitted correspondence to our office for this project. Should you have any questions please contact me at the number below.

Douglas Jones
State Historical Society of Iowa

#5495 Letter from F. Martin Fee 11/21/2012

Comment

Summary: To Whom It May Concern: Thank you for your correspondence dated November 10, 2012 concerning the subject project The Iowa Tribe of Kansas and Nebraska shares the same concerns as the Winnebago and Yankton Sioux Tribes. Like the Yankton Sioux it is highly probable that the proposed routes and construction will fall within our ancestral lands, therefore, we are requesting to be included in any traditional cultural property (TCP) study and project coordination.

F. Martin Fee
Iowa Tribe of KS and NE

#5408 Email Comment from R Wurgler (US Coast Guard) 11/26/2012

Comment

Summary: Ms. Amanda Martin, My office is trying to determine if any new bridge will be built for this proposed project or are you planning to rehabilitate any bridges for this project?

Rodney Wurgler
US Coast Guard

#5410 Support Letter from City of Mount Vernon 11/26/2012

Comment

Summary: The City of Mount Vernon would like to take this opportunity to send a letter of support for the continuation and advancement of the development of a high speed, regional intercity passenger rail system serving Iowa and the Midwest. At Mount Vernon City Council meeting earlier this week, the draft environmental impact statement was discussed. The Council went on record in unanimous support of this endeavor and wish to convey this to you and the Office of Rail Transportation. The potential of this initiative in the longer term with respect to both positive economic and environmental impact should not be underestimated. If you have any furthe1 questions or are in need of clarification of our position and interest, please do not hesitate to contact us.

Scott Peterson
City of Mount Vernon

#5429 Web Comment from J Howe 11/28/2012

Website Comment

Summary: I (and family) in SW Iowa utilize the Chicago-CA Amtrak system at every opportunity available. A Chicago-Omaha route through central Iowa would be a big boost to Iowa. It is a sensible response to challenges of environmental degradation, urban development/redevelopment/growth management, and energy conservation. Iowans want transportation diversity and choice. Intermediate distance travel is best served by fast and reliable train service, in contrast with air and auto modes. I serve as governor-appointed At-Large member of Iowa's 5-member City Development Board. We deal with annexation/territorial expansion of cities. Many of the causes of poor urban development (sprawl upon the countryside and infrastructure inefficiencies) are directly relate to over-dependence on automobile transportation. Substantial expansion of passenger rail cannot help but relieve these underlying causes. By far, it is the least disruptive of good urban design efforts and quality of life outcomes.

Jay Howe
City Development Board (State of Iowa)

#5648 Email Comment from J Howe (City Development Board) 12/14/2012

Comment

Summary: I am not available to appear personally at the Council Bluffs, IA hearing. I fully support the passenger rail program for the Chicago-Omaha/CB route as proposed. It would be a significant step towards as well as a model for: 1. relief from growing auto and airplane congestion, 2. relief from urban sprawl development when highway capacities and extensions occur, and 3. relief from huge amounts of energy consumed (and pollution emitted) in transporting people in much less efficient ways than otherwise possible, i.e., train travel.

Jay Howe
City Development Board (State of Iowa)

#5441 Web Comment from S Maurice 11/29/2012

Website Comment

Summary: Our family lives just 20 minutes from Iowa City, IA. This is a very acceptable distance for us to drive and park to go to Omaha to the zoo with our kids or to go to the Chicago area to visit family. Either choice of build or no-build is better than driving. 79 mph is certainly faster than I would ever want to drive on an interstate to get to the same place as by train. I would welcome passenger train service this convenient to where I live. Thanks for the opportunity to participate in this comment forum. Respectfully, Steven Maurice

Steven Maurice
City of Mount Vernon, IA

#5476 Email Comment from B Taylor-McLaren 11/30/2012

Comment

Summary: As a long-time resident of Atlantic, IA, I would like to offer this letter in support of Passenger Rail trains coming through our town. I am still a relatively young adult at 39 years old, and it pains me sorely to see the small towns in our area losing revenue and population to the nearby cities of Omaha and Des Moines. I feel strongly that having Atlantic as a potential connection in the proposed passenger rail line will build and buffer the economy locally and provide the potential for greater security and higher quality of life for future generations residing in our area.

Billie Taylor-McLaren
Cass County

#5505 Web Comment from G Fruin 12/4/2012

Website Comment

Summary: The City of Iowa City would like to thank the Department of Transportation staff and their consultant team. Throughout the entire EIS study they have done an excellent job of keeping interested parties informed. From email updates to in-person meetings and online open houses, there has been a consistent flow of information that has been greatly appreciated. The City of Iowa City continues to be a strong advocate for an expanded regional passenger rail network throughout the State. As our surrounding states develop a robust regional rail network, Iowa must also proceed or risk placing itself in a competitive economic disadvantage for decades to come. We encourage the State to proceed with phase one of the regional line, which will connect Iowa City to Chicago. As demand for passenger rail grows and as funding opportunities become available, the service should be expanded to other population centers throughout Iowa. Passenger rail statistics reveal a rapidly increasing public demand for service. Amtrak ridership throughout the country has experienced record ridership in nine of the last ten years. Ridership on midwestern rail routes utilizing Chicago as a hub have similiarly experienced tremendous growth in recent years. Iowa City believes the timing is right to begin to develop this important piece of the State's future transportation network. We stand ready to work with the Department of Transportation and again express our appreciation for their efforts to date.

Geoff Fruin
City of Iowa City, Iowa

#5535 Web Comment from J Cory (City of West Des Moines) 12/6/2012

Website Comment

Summary: Under Appendix B - Chapter 3 Figures - Part 3 Figure 117, The map shows several pink dots representing Historic Sites and I'm just curious if there is more explanation of these? Phone is 515-222-3492 or email is fine. Thanks!! Joe

Joe Cory
City of West Des Moines

#5721 Web Comment from S Prior (IA Dept of Health) 12/19/2012

Website Comment

Summary: I have eagerly awaited progress with this project for years and plan on using this regularly once it is up and running. I think the route from the quad cities to omaha through des moines is a logical course to take. i understand that other routes will be available connecting more communities to the railroad. it makes a lot of sense and i would happily pay more taxes to support this project.

Sieglinde Prior
IA Dept. of Public Health

#5772 Web Comment from J Bohac 12/26/2012

Website Comment

Summary: Passenger Rail from Omaha to Chicago is a great way to meet the travel demands of our future. I am excited to have Des Moines considered as one of the main stops. I think its important to limit the number of stops to more major cities along the route to keep the travel time in line with travel by car so the attractiveness of this new mode of transportation is kept high. I oversee the Traffic and Transportation Division for the City of Des Moines and would welcome involvement in determination of development of the rail station in the city. We can also work together on parking related needs associated with the new station if it ends up in downtown.

Jennifer Bohac
City of Des Moines

#5777 Email Comment from M Hayes (USACE) 12/19/2012

Comment

Summary: Andrea: In giving this a quick read, I'm very surprised that this project appears to be already down to one 'build' alternative (Alternative 4/4-A) after the Tier I analysis . Could that be true, or am I misunderstanding something? Also, I noted on Figure ES-3 that evidently there is a city called Galesburg in central Iowa along Alternative Route 4/4-A about where Des Moines used to be. I'm familiar with Galesburg, Illinois, but in over 25 years of working in the 404 Regulatory arena in Iowa, I never realized there was a Galesburg in that state! Considering mitigation for unavoidable impacts to wetlands and waters, they need to realize there are very few wetland mitigation banks in Iowa. There are no stream mitigation banks in the state and there are no "in-lieu-fee" programs in effect.

Mike Hayes
USACE

#5780 Email Comment from Senator Hogg 12/18/2012

Comment

Summary: Dear Ms. Nicholson: I am writing to express my support for the Chicago to Omaha rail improvements assessed in the Tier I Service Level Draft Environmental Impact Statement (Draft EIS). I believe the build alternative through Iowa City, Grinnell, and Des Moines is the best alternative and is a win-win-win-win project for Iowa: 1. Economic Benefits – The Draft EIS identifies “economic benefits provided through job creation, joint development, improved accessibility, and increased economic activity.” 2. Reduced Highway Congestion – The build alternative will reduce automobile traffic by “approximately 434.9 million passenger-miles per year.” Without the project, “nearly 75 percent of I-80 in Iowa would be bordering on unstable traffic flow.” 3. Reduced Oil Use – The build alternative will reduce gasoline consumption by 12 million gallons each year, reducing security risks associated with our dependence on oil. 4. Reduced Carbon Pollution – The build alternative will reduce carbon pollution that forces more climate change by more than 15,000 tons per year. To the extent that the Draft EIS has identified some minor adverse impacts, I know the Iowa DOT and its federal partners can minimize those impacts. In any event, the large benefits for jobs, our economy, mobility, reduced congestion, reduced oil use, and reduced carbon pollution are worth the costs associated with the build alternative. Thank you in advance for your consideration of my comments.

Rob Hogg
Iowa Senate

#6012 Comment Letter from Johnson County MPO 1/17/2013

Comment

Summary: In 2009, the Metropolitan Planning Organization of Johnson County (MPOJC) supported a proposed passenger rail service from Chicago to Iowa City; a service that would provide an environmentally friendly, convenient, and inexpensive travel option for the residents of metropolitan Iowa City and the neighboring communities, as well as the many college students in the Iowa City-Cedar Rapids corridor. After years of working with the Iowa Department of Transportation (lOOT), the Federal Rail Administration (FRA), and the Illinois Department of Transportation, MPOJC continues to support the proposed passenger rail service from Chicago to Iowa City and we also enthusiastically support passenger rail service to Des Moines and Council Bluffs/Omaha. Our board met on December 12, and reaffirmed its support, and requested that I send you this letter, asking you to accept the associated federal funding. I'm sure that you are aware of the many benefits of passenger rail service and we also understand that some Iowans question the investment in passenger rail service. The representatives of the MPOJC see passenger rail service as an opportunity to provide Iowa with a necessary and convenient travel option for business and pleasure travelers, seniors, students, and others in nearby communities. We understand that for every $1 invested in passenger rail service in Iowa, we can expect an estimated $1.70 in return. This kind of Investment would allow for needed economic growth opportunities as experienced in many other parts of the country and would benefit not only those communities with a station stop but Iowa as a whole, similar to the interstate system and airports. New commercial and residential developments are likely to spring up near passenger rail depots, helping to reinvigorate an area or community. It is estimated that 600 new and permanent jobs will be created as part of the Chicago to Iowa City passenger rail route alone with business activity increasing by $25 million per year, which increase various tax bases. Improving the regional rail infrastructure will benefit freight rail service as well, which is important to Iowa's economy, including agriculture. Investment in passenger rail service is a bold move for Iowa but it also prepares us for the growing challenge of moving people efficiently and conveniently in the future. This is an opportunity that may not be available to Iowa for quite some time if we don't proceed now and will put Iowa at a disadvantage when it comes to keeping Iowans in Iowa and providing the economic growth opportunities that will separate Iowa from other states without rail service. MPOJC and the Iowa City metropolitan area have committed to providing and maintaining a passenger rail station, have committed to using local funds to support the ongoing operating subsidy (in conjunction with other communities on the proposed passenger rail route and the lOOT), and have continued to plan for and promote this extremely important project for Iowa's future. Again, the MPOJC strongly supports the passenger rail project from Chicago to Iowa City, and we encourage you to accept the federal rail funding to complete the proposed project. We also strongly support your consideration of future passenger rail service from Iowa City to Des Moines and Council Bluffs/Omaha as well as other passenger rail routes proposed in Iowa. All routes are an important part of Iowa's future.

Gerald Kuhl
Metropolitan Planning Organization of Johnson County

#6090 Comment Letter from Metra 1/30/2013

Comment

Summary: Dear Ms. Martin: Metra offers the following comments regarding the Chicago to Council Bluffs - Omaha Tier I Service Level Draft Environmental Impact Statement (EIS). The document states that Alternative 4, which utilizes Metra Rock Island District (RID) track between Chicago and Joliet, is "neither reasonable or feasible" because it lacks a connection to Chicago Union Station (CUS). However, the Chicago - 51. Louis High Speed Rail Final E15, released in late October, identified the RID as the preferred route between Joliet and Chicago. A connection would be added between the RID and Norfolk Southern/SouthWest Service track at 40th Street, allowing trains to enter CUS. Chicago - Omaha service utilizing the RID could also use this connection, and utilize additional track and signals along the corridor added to accommodate the St. Louis service. Metra understands that capacity modeling will take place during the Tier 2 study. Thorough analysis is critical in order to fully identify the track and signal improvements and additional right~of~way needed to support the new service in addition to existing and proposed freight, commuter, and intercity passenger trains on the route, especially in the congested Chicago - Aurora segment. Here, capacity is particularly constrained during peak commuter traffic periods in the morning and afternoon. Metra wants to ensure that capacity is preserved for future expansion of Metra service in this successful and growing commuter corridor. Metra strongly recommends that the project team work closely with the BNSF and other railroad owners in the study area, so that the next phase of analysis accurately reflects current and future demands on the rail network. As noted in the Tier 1 EIS document, Preliminary Engineering and an Environmental Assessment of a proposed extension of commuter service on the BNSF to Oswego are currently underway. The potential addition of Metra traffic on this segment of the line needs to be considered during Tier 2 when determining infrastructure improvements and right-of-way costs for the Chicago - Omaha service. Currently, the south side of CUS is at capacity during much of the day, with a limited ability to accommodate additional trains. Recommendations to address this issue were developed as part of the CUS Master Plan study, and also include the relocation of Metra's SouthWest Service from CUS to LaSalle Street Station, as proposed in the CREATE Program. These recommendations, their timeline for implementation, and previous proposals for new train service that would utilize the south platforms of CUS, should be considered during the Tier 2 analysis. Metra requsts that additional efforts should be made to include all stakeholders in the process early and often during subsequent portions of this study. If you have any questions, or would like to arrange a meeting or conference call, don't hesitate to contact me directly or Lynnette Ciavarella at (312) 322-8022 or Iciavarc@metrarr.com to facilitate th is conversation.

Alexander Clifford
Metra

APPENDIX P

NOISE AND VIBRATION
INTERIM IMPLEMENTATION PHASE

Table 1. Train Traffic Assumptions for Full Implementation

	Line Segment	EF trains qty.	EF length ft	EF locos qty.	EF speed mph	EP trains qty.	EP length ft	EP locos qty.	EP speed mph	FF trains qty.	FF length ft	FF locos qty.	FF speed mph	FP trains qty.	FP length ft	FP locos qty.	FP speed mph
A	Chicago-Aurora	40	6000	3	45	102	700	1	60	60	6000	3	45	116	700	1	60
B	Aurora-Wyanet	24	6000	3	45	8	800	2	70	36	6000	3	45	22	700	2	100
C	Wyanet-Silvis	7	5300	2	35					14	8000	3	35	14	640	2	100
D	Silvis-Rock Island	15	3400	2	5					22	6000	2	5	14	640	2	40
E	Rock Island-Iowa City	6	6000	2	35					12	7000	3	35	14	640	2	100
F	Iowa City	8	5900	2	5					14	6500	2	5	14	640	2	40
G	Iowa City-E. Des Moines	6	6000	2	35					12	7000	3	35	14	640	2	100
H	Des Moines	8	2500	2	10					14	6500	2	10	14	640	2	40
I	W. Des Moines-Council Bluffs	5	5000	2	35					10	6000	3	35	14	640	2	100
J	Council Bluffs-Omaha	60	8000	3	10					90	8000	3	10	14	640	2	40

Table 2. Train Traffic Assumptions for Interim Implementation Phase

	Line Segment	EF trains qty.	EF length ft	EF locos qty.	EF speed mph	EP trains qty.	EP length ft	EP locos qty.	EP speed mph	FF trains qty.	FF length ft	FF locos qty.	FF speed mph	FP trains qty.	FP length ft	FP locos qty.	FP speed mph
A	Chicago-Aurora	40	6000	3	45	102	700	1	60	60	6000	3	45	110	700	1	60
B	Aurora-Wyanet	24	6000	3	45	8	800	2	70	36	6000	3	45	16	700	2	70
C	Wyanet-Silvis	7	5300	2	35					14	8000	3	35	8	640	2	70
D	Silvis-Rock Island	15	3400	2	5					22	6000	2	5	8	640	2	40
E	Rock Island-Iowa City	6	6000	2	35					12	7000	3	35	8	640	2	70
F	Iowa City	8	5900	2	5					14	6500	2	5	8	640	2	40
G	Iowa City-E. Des Moines	6	6000	2	35					12	7000	3	35	8	640	2	70
H	Des Moines	8	2500	2	10					14	6500	2	10	8	640	2	40
I	W. Des Moines-Council Bluffs	5	5000	2	35					10	6000	3	35	8	640	2	70

Note:
Line Segment J is not included for the interim implementation phase because service would not be established between Council Bluffs and Omaha.

Table 3. Reduction in Noise Contour Distance (Feet) from Track Center Under Interim Implementation Phase

Noise Condition	Full Implementation Future Build Wayside Moderate	Full Implementation Future Build Wayside Severe	Full Implementation Future Build Horn Moderate	Full Implementation Future Build Horn Severe	Interim Implementation Phase Reduction in Future Build Wayside Moderate	Interim Implementation Phase Reduction in Future Build Wayside Severe	Interim Implementation Phase Reduction in Future Build Horn Moderate	Interim Implementation Phase Reduction in Future Build Horn Severe
1	476	272	828	525	-3	-2	-7	-6
2	494	285	853	546	-3	-2	-8	-6
3	417	299	656	397	-9	-9	-6	-5
4	382	211	609	364	-8	-5	-6	-4
5	333	182	541	318	-7	-5	-6	-4
6	408	188	511	404	-24	-11	-16	-20
7	256	173	449	256	-12	-10	-15	-10
8	482	278	913	594	-7	-4	-9	-7
9	434	247	843	540	-6	-4	-9	-7
10	361	166	476	363	-25	-11	-18	-20
11	234	154	419	236	-13	-11	-16	-11
12	227	118	409	229	-13	-7	-16	-10
13	430	242	835	531	-9	-6	-13	-10
14	322	177	666	412	-7	-5	-12	-9
15	359	166	475	362	-25	-11	-18	-20
16	223	146	402	226	-13	-10	-16	-10
17	286	202	606	366	-12	-11	-20	-14
18	254	135	550	327	-11	-7	-19	-13
19	370	175	589	357	-20	-10	-20	-14
20	331	153	454	338	-27	-12	-20	-21
21	271	127	367	204	-71	-10	-17	-4

APPENDIX Q

TIER 1 DRAFT EIS COMMENTS AND RESPONSES

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Table 1. Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study Tier 1 Draft EIS Comments and Responses

Comment Number	Draft EIS Topic	Commenter	Affiliation	Comment	Response
5267	Public Involvement	Scott Koch	Greater Des Moines Convention & Visitors Bureau	Do you have a twitter account or anything I can tweet out? What about Facebook?	Hello, Thank you for your interest in the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Information about the project can be found by following the Iowa DOT Twitter at https://twitter.com/iowadot. In addition, Share Links built into the project website at www.iowadot.gov/chicagotoomaha/ will have updated information you can share through Facebook and Twitter. Thank you for your comment.
5263	Noise – Loud Rail Traffic; Safety – Grade Crossings	Frank Salomon	Greater Des Moines Convention & Visitors Bureau	Greetings. In reading the new draft EIS, part 7, I was pleased to find awareness that grade-crossing and noise are concerns. SAFETY GATES: I ask you to make sure in particular that four-part gates and other safety measures are written firmly into the project core, and not left as expensive loose ends for municipalities to cover. A few feet from my house, on Greenwood Ave. (IA 52246), rails with NO gates at all run across the access way to a children's day care center. This is already frightening, with freight trains, and with high-speed traffic it would become deadly. NOISE: As I understand it, four-part gates would obviate the requirement that locomotives sound their horns at the crossing. Horns, and not motor noise, are the main noise impact here. The rails apparently also need an additional improvement to mitigate screeching wheels. Please understand that I am generally pro-rail, but only if HSR in undertaken with FULL concern for environmental needs. Highways already compromise a lot of real estate; let's not let rails add to the problem. Thanks for your attention. Frank Salomon	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Grade Crossings: Based on criteria developed by the FRA (Federal Railroad Administration) as part of implementation of a new intercity passenger rail service, gates and flashing lights will be required for every public crossing along the entire route, including crossings that now only have flashing lights and/or passive signage. For speeds of 79 mph or less, gates are installed on 2 quadrants rather than 4. If the speeds are ultimately higher than 79 mph, there will be a requirement to install additional safety mechanisms at the crossings. Noise: A locomotive is required to sound their horn for safety purposes, unless a community has established a Quiet Zone status. For a community to become a Quiet Zone community, the local jurisdiction must work with the Federal Railroad Administration (FRA) as well as the host railroad to determine eligibility for a community becoming a Quiet Zone designee. Typically, additional safety improvements are required at crossings and the cost is the responsibility of the local community. Since that initial request must come directly from the city officials, we recommend that you continue to work with your local officials to discuss options for establishing Quiet Zone(s).
5379	Safety – Public; Transportation – Highway Congestion	Paul Weihe	Students Concerned About the Environment	Thank you for posting the EIS document, for the proposed high-speed rail line between Chicago & Omaha. I am unsure if it contains answers to two questions. Would you please respond either with answers by email, or direct me to the relevant page(s) of the document on which such answers can be found? 1. Assuming the proposed line is built, fewer people will be driving the route by personal vehicle (automobile). Would there be a difference (based on established statistics) in resultant deaths, due to fewer automobile fatalities? I would assume that more people riding the rails would lead to fewer dying in automobiles on the route. 2. Assuming the line is not built, would it be safe to assume that more people would be driving more highway miles? If so, would more highway routes/lanes/wider highways result? More highway interchanges? More parking lots built? And, have those impacts been quantified and included in your EIS? I appreciate your attention to this matter.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Based on the study criteria we did not research how a proposed new regional passenger rail service would affect highway fatality rates on the current highway system. It would make sense that statistically as you decrease ADT (Average Daily Traffic) on a roadway, you are likely to increase safety. When we go through the exercise of determining a benefit-cost ratio for this route, which will occur over the next few months, we will take into consideration the values for human life, human injury, and property damage. My thoughts are that the volume of passenger rail are so low compared with over all traffic that we'll need to address capacity and growth regardless of whether we have passenger rail or not. Our major highways and interstates are seeing more annual traffic each year and so it is likely that if we don't have alternative transportation options, the traveling public will use what exists. The benefit-cost ratio does include a monetized value for avoided highway congestion on a per-passenger-mile basis, which incorporates broad measures for avoided highway maintenance, avoided highway construction, and avoided travel time delay. It does not measure for avoided parking lot construction. If other options don't exist, it is likely that the Iowa Department of

Comment Number	Draft EIS Topic	Commenter	Affiliation	Comment	Response
					Transportation will have to plan for improvements necessary for the additional traffic, which could lead to additional lanes, more interchanges, etc.
5405	Safety - Public	Brian Recker	Individual	Will this system have security? All the conveniences and cost savings that can be attained by travelling by rail are negated if people are afraid to ride it. Thank you for your time.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Amtrak, who would likely be the operations provider for this service, is under the jurisdiction of the Transportation Security Administration (TSA). Amtrak also maintains a police force that works with TSA on various protocols to insure safety of travelers. Amtrak and the TSA employ various methods including pre-trip screening of passenger manifests and random surveillance aboard trains and at stations, often in cooperation with local law enforcement. Amtrak trains are also subject to the laws and regulations of other authorities like the Drug Enforcement Agency and U.S. Border Patrol, who may also act to protect trains and passengers.
5408	Tier 2 Study	Rodney Wurgler	US Coast Guard	Ms. Amanda Martin, My office is trying to determine if any new bridge will be built for this proposed project or are you planning to rehabilitate any bridges for this project?	Thank you for taking the time to provide comments as part of the Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study (the Study). Iowa DOT has conducted analyses of Route Alternative 4-A concerning bridge crossings of navigable rivers that could require USCG permits. Based on the information prepared for the 2010 Chicago to Iowa City Passenger Rail Service application submitted to FRA, and the preliminary analysis completed thus far on the Study, we do not anticipate replacing or conducting any major rehabilitation to the Government Bridge in Moline, Illinois, which crosses the Mississippi River. At this time in the Study, we do not know specific infrastructure requirements for crossing the Missouri River and have identified two potential locations for crossing the river between Council Bluffs, Iowa, and Omaha, Nebraska (see the Draft EIS, Figure 2-4): either at the non-operational CN Railway (former Illinois Central) crossing or at or adjacent to the operational Union Pacific Railroad crossing. Since this Study is being evaluated under NEPA through a Tier I EIS, it does not involve detailed engineering to specifically identify a Missouri River bridge crossing location and what would need to be done with rail bridges over navigable waters. We are deferring the detailed analysis until Tier 2, when we can obtain the necessary funding to perform the planning and engineering analyses to determine the specific location of the Missouri River bridge, and whether a new bridge or reconstruction of an existing bridge would be required. After acquiring funding for Tier 2, we would be conducting Tier 2 environmental analyses concerning the environmental impacts associated with the alignment (including the crossing of navigable waters), as well as determining permitting needs with the USCG.
5486	Corrections to the Document	Corey Hlavacek	Individual	Iowa DOT Staff, In browsing the PDF document “Chapter 2 Alternatives,” (http://www.iowadot.gov/chicagotoomaha/pdfs/draftEIS/Chapter%202%20Alternatives.pdf) I noticed that the map “Figure 2-1” was plotted incorrectly or in a way that may cause confusion for unfamiliar reviewers. Galesburg, IOWA is correctly plotted in its approximate location, however no rail lines, especially the IAIS, run through the town. In addition, the map has the city of Osceola, Illinois plotted correctly in its location. Again, neither IAIS nor BNSF pass through Osceola, Illinois. Osceola, Iowa is significant because the California Zephyr runs through it on BNSF Railway Company’s Tracks, while Galesburg, Illinois is a big hub for BNSF Railway Company and a pass-through location for two State of Illinois sponsored AMTRAK routes and two long distance Amtrak routes. Also see Figure ES-3	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Figures ES-3 and 2-1 in the Final EIS were revised to remove Galesburg, Iowa, and Osceola, Illinois. When these figures were updated, Des Moines, Iowa, was added to both figures. • Yes, the state of Iowa does have the ability to potentially enter into a private-public partnership or alternative funding option, but the Iowa Department of Transportation has not explored these options for the Chicago to Council Bluffs-Omaha passenger rail service. • Iowa cannot enter into a design build arrangement. • Iowa would probably consider it, if it is shown to be feasible, desirable, and legal. • Food and beverage service will be offered. The service design is too conceptual to determine whether there are two classes of service, and since contract negotiations with Amtrak haven’t even begun on the Illinois side, it’s unknown what they will

Comment Number	Draft EIS Topic	Commenter	Affiliation	Comment	Response
				http://www.iowadot.gov/chicagotoomaha/pdfs/draftEIS/ExecutiveSummary.pdf. I thought you might like to consider this as you prepare for public meetings and a future tier II EIS. I also, have a few questions for you: • Does the Iowa Department of Transportation hold the power to enter into public-private partnerships or alternative financing facilities, or would that power need to be granted by the legislature? Understanding that the Chicago – Omaha route is significantly rural which would reduce investor interest, will there be any investigation into private interests that may be willing to enter into a design, finance, build, operate arrangement (or some combination thereof)? • Also, would the operation of the route be put out for bid? I know that the state of Illinois contracts for service with Amtrak due to a number of labor and host railroad considerations. However, as proven in other states Amtrak may not be the most competitive operator of passenger services depending on the circumstances (i.e. MARC - Bombardier Transportation, VRE – Keolis, New Mexico Rail Runner Express and TRE – Herzog, etc.). • Finally, will consideration be given to the offering food and beverage service and two classes of service (business vs. coach)? Respectfully, Corey Hlavacek	determine to establish.
5433	Public Involvement	Anonymous	Individual	You state that there will be 3 public meetings but there are no times listed for the meetings. What would the proposed start and stop times be? Would these be 'open house' meetings or a formal structured meeting?	The dates, times, and locations were listed on the website and noted on meeting announcements. The meetings are a combination of open house style, including a formal presentation with a question and answer session.
5443	Routes – Route Alternative 1	Arthur Roche	Individual	I live near Dubuque, and am disappointed that the more northernly alternative was dropped. With a 90 minute commute to Iowa City from Dubuque, the train from there to Chicago would not be a big improvement over driving.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Due to the fact that the majority of the service to get from Chicago to Dubuque is in the State of Illinois, the Illinois Department of Transportation (ILDOT) is the lead agency for that effort. The ILDOT has recently discussed providing a service from Chicago to Dubuque and is currently analyzing the feasibility of providing the improvements necessary for future service. The City of Dubuque is also working with the State of Illinois and Iowa to determine the necessary steps to be ready for a potential station stop in the City of Dubuque. As part of the Alternatives Analysis portion of our study, we performed a thorough analysis of the CN (Canadian National) route from Chicago to Dubuque, through Waterloo, Fort Dodge and on to Council Bluffs. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues All of the analysis performed was reviewed and completed in cooperation with the FRA (Federal Railroad Administration) and the ILDOT (Illinois Department of Transportation).

Comment Number	Draft EIS Topic	Commenter	Affiliation	Comment	Response
5478	Support the Project; Routes – Location Specific Comment	Mark Moore	Friends of the Depot	Dear Sirs; I am past chairman of Friends of the Depot in Burlington, Iowa. We are very interested in the Chicago-Omaha route going through here and using the BNSF mainline to Omaha. The California Zephyr serves us, and is being patronized heavily now. Its on time performance is improving and is a strong ridership going both directions. A dedicated Chicago Omaha train through here is a must. It would be patronized heavily, and is necessary to provide a commuter type service that would have strong on time performance and convenient boarding times both directions. We are planning to re-open our large waiting room, restart the restaurant here, and make our depot a community center. This will become a key stop on this Amtrak route. I work with Derrick James heavily and am forwarding this to him as well. Brian Perkins is our district manager in Galesburg and works with us as well. We also would like to see a Burlington / St. Louis train again, which is a route of high potential. Now it has no service, and would be a heavily patronized route if restarted. The Mark Twain Zephyr used to travel this route daily. We are hoping to renovate it and bring it here for display.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. We understand and agree the importance of the existing California Zephyr service that currently runs through Burlington, Iowa. That service is considered long distance service and is not funded by the Iowa Department of Transportation (Iowa DOT). As part of long-distance service, the California Zephyr is funded by Amtrak and Amtrak is responsible for all decisions associated with that service. Recently, Iowa DOT partnered with BNSF and Amtrak to apply for federal funding to provide upgrades to track infrastructure to provide better on-time performance of that service and better serve the customers who want to utilize long distance service. The Chicago to Omaha route which Iowa DOT is proposing would expand service in Iowa and provide a passenger rail service referred to as Intercity Passenger Rail Service (500 miles or less in length and provides daily round trip travel options). This service is in addition to the long-distance service provided by Amtrak and is not intended to replace the current California Zephyr. Expanded intercity service could ultimately provide seven round-trip trains per day to Des Moines, IA and five round-trip trains per day to Council Bluffs, IA/Omaha, NE. Based on many years of planning the Midwest Regional Rail Initiative, with eight other Midwest states, it was determined that a regional route from Chicago to Omaha would meet the needs of intercity passenger rail service for the State of Iowa. As part of the Chicago to Council Bluffs-Omaha study, we were required by the FRA (Federal Railroad Administration) to analyze all of the existing or previously established passenger rail routes from Chicago to Omaha. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues We also note your comments regarding additional passenger rail service to St. Louis. In closing, the California Zephyr provides a very important transportation service to the state of Iowa. Any new intercity service being introduced from Chicago to Council Bluffs/Omaha would ultimately allow even more citizens the option to use passenger rail as an alternative mode and provide an additional efficient and cost effective travel option.
5484	Routes – Routing Process	Leroy Perkins	Individual	Good Morning!! Thanks for the note. However, you still didn't give any answer as to the present thought - Is it planned to leave the South route in place if there becomes a North route?? Leroy	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. We understand and agree the importance of the existing California Zephyr service that currently runs through Burlington, Iowa. That service is considered long distance service and is not funded by the Iowa Department of Transportation (Iowa DOT). As part of long-distance service, the California Zephyr is funded by Amtrak and Amtrak is responsible for all decisions associated with that service. Recently, Iowa DOT partnered with BNSF and Amtrak to apply for federal funding to provide upgrades to track infrastructure to provide better on-time performance of that service and better serve the customers who want to utilize long distance service.

Comment Number	Draft EIS Topic	Commenter	Affiliation	Comment	Response
					The Chicago to Omaha route which Iowa DOT is proposing would expand service in Iowa and provide a passenger rail service referred to as Intercity Passenger Rail Service (500 miles or less in length and provides daily round trip travel options). This service is in addition to the long-distance service provided by Amtrak and is not intended to replace the current California Zephyr. Expanded intercity service could ultimately provide seven round-trip trains per day to Des Moines, IA and five round-trip trains per day to Council Bluffs, IA/Omaha, NE. Based on many years of planning the Midwest Regional Rail Initiative, with eight other Midwest states, it was determined that a regional route from Chicago to Omaha would meet the needs of intercity passenger rail service for the State of Iowa. As part of the Chicago to Council Bluffs-Omaha study, we were required by the FRA (Federal Railroad Administration) to analyze all of the existing or previously established passenger rail routes from Chicago to Omaha. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues In closing, the California Zephyr provides a very important transportation service to the state of Iowa. Any new intercity service being introduced from Chicago to Council Bluffs/Omaha would ultimately allow even more citizens the option to use passenger rail as an alternative mode and provide an additional efficient and cost effective travel option.
5485	Routes – Routing Process	Leroy Perkins	Individual	Good Morning!! A while back I e-mailed a question but to date have not heard back as to the thoughts on the question. I'll send it along again and see if you folks are really reading these - Question = If a new route is decided upon in the North part of the state or mid-central, will that do away with the present South route,... OR will it remain and we will then have two (2) routes through the state??	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. We understand and agree the importance of the existing California Zephyr service that currently runs through Burlington, Iowa. That service is considered long distance service and is not funded by the Iowa Department of Transportation (Iowa DOT). As part of long-distance service, the California Zephyr is funded by Amtrak and Amtrak is responsible for all decisions associated with that service. Recently, Iowa DOT partnered with BNSF and Amtrak to apply for federal funding to provide upgrades to track infrastructure to provide better on-time performance of that service and better serve the customers who want to utilize long distance service. The Chicago to Omaha route which Iowa DOT is proposing would expand service in Iowa and provide a passenger rail service referred to as Intercity Passenger Rail Service (500 miles or less in length and provides daily round trip travel options). This service is in addition to the long-distance service provided by Amtrak and is not intended to replace the current California Zephyr. Expanded intercity service could ultimately provide seven round-trip trains per day to Des Moines, IA and five round-trip trains per day to Council Bluffs, IA/Omaha, NE. Based on many years of planning the Midwest Regional Rail Initiative, with eight other Midwest states, it was determined that a regional route from Chicago to Omaha would meet the needs of intercity passenger rail service for the State of Iowa. As part of the Chicago to Council Bluffs-Omaha study, we were required by the FRA (Federal Railroad Administration) to analyze all of the existing or previously established passenger

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					rail routes from Chicago to Omaha. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues In closing, the California Zephyr provides a very important transportation service to the state of Iowa. Any new intercity service being introduced from Chicago to Council Bluffs/Omaha would ultimately allow even more citizens the option to use passenger rail as an alternative mode and provide an additional efficient and cost effective travel option.
5560	Cultural Resources; Routes – Route Alternative 4A; Cumulative Impacts; Public Involvement	Carol Preston	Homestead Iowa	Amanda, I reviewed some of the material of Tier 1 study and it appears that the route 4A is the most favored at this point. I live in Homestead and would be affected significantly by this choice. (1)First I would like to request/suggest that meetings with the communities involved would be implemented soon. Often many of us can't make it to the meetings in Chicago, Des Moines or Council Bluffs, nor do many have access to internet for the online meetings. (2)Looking at the map, our village of Homestead would be quite severely impacted by passenger trains, 14 trips a day, running 80-110 mph. This would impact our quality of life, generating much more noise and impact our properties with regards to values, and potential for structural damage due to vibration. Approximately 3/4 of the village would be very strongly impacted. Many homes in the village are historic and on the National Register of Historic Properties. No external changes to the historic properties can be made without permitting and approval by the Amana Colonies Land Use District. Please tell me how you plan to address those issues and if property owners would be compensated. (3)Please provide a map of the current right of way and in comparison, the future right of way if this route is chosen? What are the policies affecting property owners, if this routes puts a home in the vibration contour and severe-moderate noise zone? (4)One more question about the map. I was looking at this map showing the potential passenger train routes, one that would go through Homestead. http://www.iowadot.gov/chicagotoomaha/pdfs/draftEIS/Appendix%20B%20-%20Chapter%203%20Figures_pt%202%20of%203.pdf The area to the north and west of Homestead is marked on this map as USFWS land. I thought it was Amana owned land. Can you tell me where this information was acquired? Again, I would like to encourage this project to reach out to the impacted communities for one on one conversations about the impact of a passenger trains.	Responses below are keyed to numbered paragraphs above only for the purpose of showing/tracking the responses. (1) Iowa DOT has held meetings with communities upon request. Please contact us to arrange a meeting. (2) Iowa DOT realizes that communities along the proposed rail corridor would experience increased noise and vibration levels. Based on a review of modeled noise and vibration contours shown on Appendix B Figure 82 that includes Homestead, there is potential for increased noise and vibration impacts from the full implementation of the Build Alternative. The majority of Homestead properties appear to be outside the severe noise impact contour and vibration impact contour. The Tier 1 Final EIS includes information in Appendix P on the interim implementation phase where four round trip passenger trains would be scheduled to pass through this portion of the project area at speeds of up to 79 mph; consequently, the noise contours would be narrower in the Homestead area according to Noise Condition 15. This would be the last phase of the Project that would be implemented within a 20-year planning horizon. During Tier 2 NEPA review, detailed design information would be generated to facilitate development of a Tier 2 noise and vibration study identifying the specific projected impacts. Where severe noise impacts (as defined by FTA/FRA methods) are predicted to occur, a noise mitigation analysis may be performed. There is some potential that noise mitigation measures will be evaluated using Iowa DOT cost effectiveness metrics, similar to how highway traffic noise mitigation is evaluated. This process compares the estimated noise reduction of a noise abatement measure (typically a noise wall) and its construction cost. Results of that evaluation are compared with a cost effectiveness threshold. If the modeled noise wall does not provide the minimum noise reduction, or exceeds the cost thresholds, it is not considered eligible for implementation. In those circumstances, noise mitigation measures would have been considered to be not reasonable and feasible. Typically, acquisition and direct compensation are not noise or vibration impact mitigation strategies. The Tier 1 process involved a desktop review of databases of properties listed on, or eligible for listing on, the National Register of Historic Places. During Tier 2, cultural resource studies would also be conducted to review all properties not previously evaluated for listing on the NRHP. The potential for adverse impacts to NRHP eligible and listed properties would be evaluated during Tier 2. If adverse

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					effects would be projected to occur, these impacts would be addressed through the National Historic Preservation Act Section 106 consultation process. (3) Detailed maps of right-of-way (ROW) boundaries were not acquired for the approximately 500-mile corridor during Tier 1, but would be acquired during the Tier 2 process. Boundaries of needed ROW would be estimated during Tier 2 as detailed design information is developed. Refer to the FRA guidance entitled, "Compliance with the National Environmental Policy Act in Implementing the High-Speed Intercity Passenger Rail Program", dated August 13, 2009. This guidance document provides an overview of the environmental review process for Tiered NEPA reviews for high-speed intercity passenger rail projects. Because of the speed regimes proposed for this project, FRA approved the use of FTA noise and vibration impact assessment methods (FTA, May 2006); Section 3.8.1 of the Tier 1 Draft EIS provides additional information on the methods used for characterizing the noise and vibration environment and predicting impacts. (4) The area you refer to was identified as the Mark Twain National Wildlife Refuge Complex and the shape file was acquired through Iowa Department of Natural Resources (Iowa DNR). This complex includes Port Louisa National Wildlife Refuge along the Mississippi River Flyway that also includes the Iowa River Study Corridor of 50,000 acres along 45 river miles within Tama, Benton, and Iowa counties. Of the 50,000 acres, only 10,000 are owned by the U.S. Fish and Wildlife Service, and managed by Iowa DNR, who also owns and manages land in the Corridor for Wildlife Management Areas and other purposes. Much of the land in the corridor is privately owned. The boundary shown is the figure you referenced is representative of the Study Corridor boundary. Iowa DNR is developing a management plan for the corridor that will delineate the specific boundaries of Federally owned and state owned lands by category. According to Iowa DNR, the actual federal wildlife refuge and state lands were reported to be outside the area of the rail corridor. The management plan and boundary information will be used during Tier 2 to address potential impacts to federal, state, and local owned conservation lands.
5535	Cultural Resources	Joe Cory	City of West Des Moines	Under Appendix B - Chapter 3 Figures - Part 3 Figure 117, The map shows several pink dots representing Historic Sites and I'm just curious if there is more explanation of these? Phone is 515-222-3492 or email is fine. Thanks!! Joe	The introduction to Chapter 3 referenced the Appendix B figures, but lacked a discussion of the various items in the legend. Section 3.11.2 referenced the Appendix B figures and noted that they showed historic sites, but none that were archaeological because of confidentiality requirements. To clarify, geographic information system (GIS) databases of sites listed on the National Register of Historic Places (NRHP), or that were evaluated and determined to be eligible for listing on the NRHP, were acquired from the State Historic Preservation Offices of Illinois, Iowa, and Nebraska. These sites were plotted in a GIS developed for the project and plotted on aerial photographs along with the Potential Impact Area (an area that includes existing ROW and estimated additional ROW that would be necessary for track and siding construction and improvements at station locations). The locations were represented as a pink dot on the Appendix B figures, but were not field verified. Those sites within the Potential Impact Area were identified and included in Table 3.11-1. The future Tier 2 studies would include field verification of the historic site locations and surveys for previously unevaluated properties. Sections 3.11.4 and 3.11.5 provided additional information on how the historic sites would be addressed in Tier 2.
5569	Routes – Location Specific Comment	Coleman Weidenbusch	Individual	Why would you terminate at Omaha when the state capitol is less than 50 miles further? Omaha - Lincoln is a potential commuter market.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. At this time, the State of Nebraska has not shown an interest in partnering with the state of Iowa to study service beyond the state line. Based on many years of planning the Midwest

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					Regional Rail Initiative, with eight other Midwest states, it was determined that a regional route from Chicago to Omaha would meet the needs of intercity passenger rail service for the State of Iowa. When Iowa applied for the funds to support this study, we contacted the State of Nebraska, but they requested not to be a partner on the effort nor provide any support for the study. We know there is some interest by some communities in Nebraska to continue to service, but there has been no discussion of state support at this time.
5663	Oppose the Project; General; Funding of the Project; Safety – Grade Crossings	Anonymous	Individual	For the cost of studying this boondoggle the IDOT could probably invest the cost and give everyone a free ride on the Mega Bus forever. On top of that it would be much quicker, safer(including those grade crossing accidents) and fuel and time efficient to run several bus trips a day when people want to go rather than running a mostly empty train once a day. My children ride the Express Busses on the Baltimore - New York corridor rather than AMTRAK. The bus is faster than the regular train and a small fraction of the fare of the faster train. Of course Amtrak in general -- like your proposal -- is a large capital cost to the tax payer and a permanent drain on the taxpayer to operate. Possibly a hundred years from now, or maybe a few decades sooner if the East stops using coal, someone might convince the UP that passenger service on their medium speed double track line would be profitable. Until then forget about wasting money on passenger train service in Iowa.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. As a transportation agency, we look at all modes of transportation and the future modal needs of the citizens and traveling public. Based on many years of planning the Midwest Regional Rail Initiative, with eight other Midwest states, it was determined that a regional intercity passenger rail route from Chicago to Omaha would meet a need of the increasing demand on our congested highways and airports. Although the Mega Bus (which is a private entity) is an option for folks traveling from Chicago to Council Bluffs-Omaha, it is not always the most viable option. As transportation planners, we must consider all options and the future demands on our entire transportation system. Passenger rail does provide an economical service as well as being ADA (American Disabilities Act) compliant, with Wi-Fi capabilities and reliable during inclement weather.
5590	Routes – Location Specific – Des Moines	Ryan Galloway	Hatch Development Group	Iowa DOT: Please consider the feasibility of moving the California Zephyr Route to the Route 4A as this will increase the overall ridership since it will allow Des Moines area residents to access both Chicago and Colorado via Amtrak. The distance and hassle of driving to Osceola in order to take Amtrak to either Chicago or westward to Colorado is prohibitive for most Central Iowans. Thank you, Ryan Galloway Hatch Development Group	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. The California Zephyr service is considered long distance service and is not funded by the Iowa Department of Transportation (Iowa DOT). As part of long-distance service, the California Zephyr is funded by Amtrak and Amtrak is responsible for all decisions associated with that service. Recently, Iowa DOT partnered with BNSF and Amtrak to apply for federal funding to provide upgrades to track infrastructure to provide better on-time performance of that service and better serve the customers who want to utilize long distance service. The Chicago to Omaha route which Iowa DOT is proposing would expand service in Iowa and provide a passenger rail service referred to as Intercity Passenger Rail Service (500 miles or less in length and provides daily round trip travel options). This service is in addition to the long-distance service provided by Amtrak and is not intended to replace the current California Zephyr. Expanded intercity service could ultimately provide seven round-trip trains per day to Des Moines, IA and five round-trip trains per day to Council Bluffs, IA/Omaha, NE. The California Zephyr is only a one round trip per day service and runs at different times of the day than what we anticipate for the new Intercity Passenger Rail service. As well, we plan to phase the new Intercity service over many years due to the costs associated with the additional capital needs to implement the service, so it will take many years to fully implement the service along the full corridor. The existing BNSF line (which hosts the California Zephyr) has the necessary infrastructure right now for the one trip per day the California Zephyr requires.
5666	Support the Project; Routes – Location Specific Comment; Funding of the	Alex Nagel	Canadian Pacific Railway	To All Concerned: As a native Iowan, it is vitally important to me (and incredibly great to see) that IDOT is taking the lead in supporting new passenger rail service in the Chicago - Omaha corridor to supplement the service already provided via the current BNSF mainline route. I think this is something that Iowa has NEEDED for decades since that fulcrum day of May 1, 1971 (which	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. As part of the Alternatives Analysis portion of our study, we performed a thorough analysis of all the other potential routes from Chicago to Council Bluffs-Omaha (CN, UP, Old Milwaukee line, IAIS and BNSF). Based on the Alternative Analysis exercise and additional

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	Project			I remember all too well as an 11-year old). That said, I can understand IDOT's position that it believes that the best route across Iowa to supplement the current service via BNSF would be to utilize the Iowa Interstate (IAIS) mainline route as it serves the Quad Cities, Iowa City, and Des Moines. Certainly, from a sheer population standpoint, this is the way you would have to go if using those parameters in the decision-making process. However, at the same time, I would strongly URGE IDOT not to make a hasty decision on this. The reason being is that the monumental cost that will be incurred in upgrading the IAIS mainline from Wyanet, Illinois (where the future connection will be built to connect IAIS with BNSF) to Council Bluffs to F.R.A. Class IV standards that would allow 79 mph passenger operation. You are not only talking about new rail, ties, and ballast but also new signaling AND quite possibly PTC (positive train control) that will be mandated after 2015. These are huge undertakings to raise this mainline from Class III to Class IV and the cost could be prohibitive I fear. Towards that end, I would strongly encourage IDOT to take another look at Union Pacific's ex-CNW "Overland Route" mainline across Iowa and Illinois. This is a mainline that already has the infrastructure in place to handle 79 mph (or faster) passenger trains. The problem here, of course, is that UP has historically had a hostile relationship with Amtrak and the "Overland Route" mainline can see anywhere from 60-80 trains a day in the Chicago - Missouri Valley segment (most trains now use the "cutoff" from Missouri Valley via Blair to Fremont which means less traffic on the old CNW passenger main from Missouri Valley to Council Bluffs). But you still do serve very strong population centers such as Clinton, Cedar Rapids, Ames, Boone, and Carroll. I would also not entirely discount the CN (ex-IC/ICG/CC/IC) Iowa Division mainline either as the CN has done considerable work on the Iowa Division after the former ICG let the Iowa Division go to hell in the early 1980's. You do not have nearly the amount of freight traffic on the CN's Iowa Division save for 337/338 between Kirk Yard in Gary, Indiana and Waterloo and the Waterloo - Ft. Dodge (567/568) trains plus the unit grain and ethanol trains that originate in various locations. The problem here, of course, is the "dark" segment from Tara to Council Bluffs; currently limited to 49 mph for freight. Considerable work would have to be done on this segment to get it passenger-ready. Ironically, however, it is the stretch from Denison to Council Bluffs where the CN and UP mainlines run basically side-by-side where a paired track arrangement could be worked out that would vastly enhance capacity for UP and tip the scales in favor of UP's route across Iowa. Again, I STRONGLY urge IDOT to look at the options here. Let's not also forget either that the proposed Amtrak service from Chicago to Dubuque NEEDS to be extended to Waterloo! In the final analysis, however, the bottom line is that Iowa NEEDS passenger rail service in the Chicago - Omaha corridor to supplement the service already provided on BNSF's mainline across Iowa. My home state has basically been living in the dark ages as far as passenger rail service is concerned since May 1, 1971 and it's high time that situation changes. Please feel free to contact me anytime if you have any questions or concerns....	analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues All of the analysis performed was reviewed and completed in cooperation with the FRA (Federal Railroad Administration) and the ILDOT (Illinois Department of Transportation). You can view this document at the following link: http://www.iowadot.gov/chicagotoomaha/pdfs/draftEIS/Appendix%20A%20-%20Alternatives%20Analysis%20Report%20(For%20Print).pdf

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5669	Support the Project	Kelly Hingtgen	Individual	I am wondering if you have any information on the proposed railway to Dubuque? Is this still an option or from what I am reading; there is only one alternative route? Council Bluffs to Omaha as you have listed. Thank you for your help	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Due to the fact that the majority of the service to get from Chicago to Dubuque is in the State of Illinois, the Illinois Department of Transportation (ILDOT) is the lead agency for that effort. The ILDOT has recently discussed providing a service from Chicago to Dubuque and is currently analyzing the feasibility of providing the improvements necessary for future service. The City of Dubuque is also working with the State of Illinois and Iowa to determine the necessary steps to be ready for a potential station stop in the City of Dubuque. As part of the Alternatives Analysis portion of our study, we performed a thorough analysis of the CN (Canadian National) route from Chicago to Dubuque, through Waterloo, Fort Dodge and on to Council Bluffs. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues All of the analysis performed was reviewed and completed in cooperation with the FRA (Federal Railroad Administration) and the ILDOT (Illinois Department of Transportation).
5599	Economic Impacts; Funding of the Project; Safety – Grade Crossings; Rail – Current Rail Traffic	Deana Cavin	City of Durant, IA	As a small city, our biggest concerns are the speed the trains will travel through our city, and the maintenance of the crossings, as well as the # of trains. Our city is split by the Rock Island Line tracks. Existing trains travel 45 mph through town or faster. There have been numerous times in the last 6 months where all our crossings were blocked by a train. This severely impedes our emergency vehicles from getting from side of the city to the other or even out into the rural areas they cover. We also do not want the responsibility of maintaining the crossings or upgrading the existing. We had hoped the passenger rail would actually by pass the City of Durant since we would not have any depot for passengers to load or unload. What are the plans for small towns affected by passenger rail? We certainly do not want an increase in the number of trains passing through. Personally, I feel it is unfair that larger metropolis cities are favored and will benefit the most. The smaller cities, once again, will just be run over, and we are struggling to survive now with DNR compliance for waste water and storm water requirements. Then the cutting of commercial property taxes.....when do little cities get a chance to be heard? We have to travel miles and miles to even get to a public hearing. Some may view this as exciting news, however, small city governments view it as another hammer coming down on them with little choice to oppose.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route 4A, along the Iowa Interstate Railroad across Iowa and through Durant. The following reasons are noted in the Draft EIS: 1) Has low construction complexity and low constructions costs 2) Has modest grade crossing complexity 3) Does not require a new bridge over the Mississippi River 4) Is the shortest route alternative 5) Has close to the shortest travel time 6) Serves a large population 7) Has a direct connection to Union Station in downtown Chicago 8) Has no unreasonable environmental resource issues All of the analysis performed was reviewed and completed in cooperation with the FRA (Federal Railroad Administration) and the ILDOT (Illinois Department of Transportation). There are currently freight trains that go through Durant on the Iowa Interstate line and even though the new passenger trains will add to that volume there are some aspects of this new service that we would like to mention. Initially we will only introduce 4 new trains per day (2 round trips). There will likely be a train that runs early morning, late morning and then those 2 trains will run again in the evening and late evening. Another aspect to consider is that the passenger trains are much

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					shorter in length than most freight trains and due to the on-time performance requirements associated with passenger trains, they will not be stopping in the towns that do not have a station stops. This will allow the passenger train to quickly pass through town and not cause much of crossing interruption. As part of the infrastructure requirements with introducing new passenger trains, each public crossing will have flashing lights and gates, so there will be even more protection for the traveling public at each crossing. This will provide additional safety from all the rail activity on the line (freight and passenger). Those improved crossings will be paid for and maintained by the State of Iowa in an agreement with the host railroad (Iowa Interstate) and the passenger operator (likely Amtrak). The communities along the line will not have to bear any additional costs associated with these improvements. All of the public involvement activities associated with this project have been in-person at the designated venues as well as on-line. We also have provided the public the opportunity to view documents at many local libraries and they can call our toll-free hotline to ask questions and make comments or provide comments via e-mail, phone or in writing.
5637	Rail – Speed	Amelia Lobo	Individual	110 MPH is slow for a modern rail system. What would be required to upgrade to high-speed rail? Could it be done on the same system? Even at 75/100 mph, it is better than what we have. It's time!	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. The proposed system is a shared use corridor, using existing freight rail to host passenger rail for speeds greater than 110 mph, a separate track would be required and costs would be very high and prohibitive.
5638	Routes – Location Specific – Des Moines; Funding of the Project	Kevin Collier	Individual	I appreciate the opportunity for IDOT planners to visit Des Moines and speak; however, the potential for non-implementation of plans to route Des Moines have been implied throughout the study. I am afraid that Des Moines residents will not have access to the passenger rail. As part of the feasibility study, I am concerned why the capital city of Des Moines was not chosen as a major city of implementation in the funding scope. It is also unfortunate that federal funds were not allocated to the state of Iowa. I hope that with responses to the Des Moines forum will encourage lenders to fund Iowa transit. Des Moines and other cities in Iowa have the potential to become world-class cities and it is high-time that lenders understand and realize Iowa's potential. I feel that farm life in Iowa will not be comprised. Question: Why is it the state of Iowa ranks [low] in funding for public transportation? Why does the state of Iowa have difficulty matching federal fund requirements?	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. This study does look at a future new intercity passenger rail service from Chicago all the way to Council Bluffs-Omaha. One major reason that route 4A, which is the Iowa Interstate Railroad route that goes through Iowa, was deemed as the preferred route alternative was due to the fact that it did go through the most densely populated communities in the state (including the Des Moines metro area). Incremental Service: Due to the funding commitment associated with a corridor, which is almost 500 miles, we will have to implement the service incrementally. Phase 1 of service (Chicago, IL to Moline, IL) is currently being implemented by the State of Illinois and they hope to have service up and running by the end of 2015. Iowa has received the federal funding to implement Phase 2 (Moline, IL to Iowa City, IA) but we currently do not have the required 20 percent state funding match to use those funds. If the legislature chooses to provide that match money, we can move forward with implementing Phase 2. Future Phases: As part of this study, we will prepare an implementation plan, which will discuss our 20 year future plan for additional incremental phases to complete the service. Those phases would include Phase 3 (Iowa City to Des Moines) and two additional phases. Depending on the success of Phase 1 & 2, we could ideally plan to obtain the necessary federal and state funding to move forward with the Phase 3. Iowa has public transit available in all 99 counties Fifteen states currently provide state supported intercity passenger rail and Iowa is poised to be the next state to add service assuming we obtain the necessary funding match for Phase 2.
5640	Transportation – Alternative	Paul Jagnow	Individual	First of all, thank you for making the information available, and for giving us a chance to comment on-line. I question the viability of a	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha

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	Transportation Mode; Funding of the Project			program that gets me to a point in another city, and then just drops me there. The proposed service is not significantly faster than driving, and if I drive, I can go where I need to be...with out getting stuck at the train station. The latter is not convenient. Overall cost of using the rail system seems like it might be more expensive (and slower) than driving. That's especially true if I have to rent a car or take long taxi rides to get to my ultimate destination. That begs the question, why would people use the rail system? What I see lacking in the presentations is the cost of using the system, the cost of building it, and the yearly cost of running the system. If the system cannot support itself, it is my opinion that it should not be built. I suspect very strongly that the system will be a huge tax burden that will last forever. If it were a "money maker", someone in private industry would already be implementing it. Since that's not happening, it would suggest that it's a money-losing, not a money-making proposition. I'd rather see the money spent on interstate system updates that would help all of us, not on a system that will have limited usefulness and limited appeal. So, how about some financial projections. Is it money maker, or a tax burden forever? What's the cost of using the system, when overall travel costs (like taxi fare) are included? It appears to me that there is an effort to engage us with details that might be very irrelevant so that we don't think about the potential tax burden or the real cost of using the rail system. The latter items need more visibility. They are, to my way of thinking, the main issues. Regards, Paul	Regional Passenger Rail System Planning Study. Below is information prepared in attempt to answer your questions. Competition with auto travel: We have determined through our analysis that a new intercity passenger rail service is competitive with auto travel. Also a key component of implementing intercity passenger rail is to provide transit connections to and from the station; these are being developed by the cities with station stops involved in the study. A new intercity passenger rail service will also be required to comply with a 90% on-time performance standard. That means the service is required to be on-time 90% of the time with very limited delays in a given time period. This standard is implemented through an agreement signed by the host railroad, service operator and state. Feasibility of the service: Up to this point in the study we have provided information to show which route would be preferred for service and the potential environmental impacts associated with a new service on that particular route. We will be going through an extensive analysis process next to determine feasibility. We do not determine feasibility by merely asking the citizens of the state if they will utilize the service once it is implemented. The next documentation process in the project to ultimately determine service use and financial feasibility is referred to as the Service Development Plan (SDP). The SDP provides much more detailed documentation of the feasibility of the service with the following documents: benefit/cost ratio, financial plan, conceptual engineering, final ridership and revenue forecasting and implementation plan. Ultimately as part of this effort, we must show the feasibility of this service or the Federal Railroad Administration (FRA) will not allow us to be eligible for future federal funds. Many states and regions in the U.S. want to facilitate new intercity passenger rail service and ultimately will compete to seek a federal funding source to support those efforts, just like Iowa, so we must provide detailed analysis to show that a service we are requesting funding for, is truly feasible.
5647	Routes – Location Specific – Grinnell	Barb Rhoads	Individual	Hello Amanda, I attended the public hearing at the Council Bluffs Public Library on 12-13-12 regarding the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. The presentation was very well done and was very informative. Your department has done a lot of work. I just wanted to take this opportunity to express my input: I interpret this study is to reveal that the impact of the passenger rail system "as proposed' would be a feasible transportation alternative to traveling by car, bus, or air. I believe this proposed passenger rail system is not a feasible alternative to current modes of transportation here in Iowa. The information provided so far does not justify moving forward with the project. There is not a proven demand or need for this rail system in Iowa. People saying they would use the system if it were in place does not demonstrate a Need for the system. I believe the burden of the massive expense to the State and Federal budget to pay for this does not justify the relatively small benefit that a rail system from Chicago to Omaha would provide.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Up to this point in the study we have provided information to show which route would be preferred for service and the potential environmental impacts associated with a new service on that particular route. We will be going through an extensive analysis process next to determine feasibility. We do not determine feasibility by merely asking the citizens of the state if they will utilize the service once it is implemented. The next documentation process in the project to ultimately determine service use and financial feasibility is referred to as the Service Development Plan (SDP). The SDP provides much more detailed documentation of the feasibility of the service with the following documents: benefit/cost ratio, financial plan, conceptual engineering, final ridership and revenue forecasting and implementation plan. Ultimately as part of this effort, we must show the feasibility of this service or the Federal Railroad Administration (FRA) will not allow us to be eligible for future federal funds. Many states and regions in the U.S. want to facilitate new intercity passenger rail service and ultimately will compete to seek a federal funding source to support those efforts, just like Iowa, so we must provide detailed analysis to show that a service we are requesting funding for, is truly feasible.
5771	Tier 2 Study; Threatened & Endangered Species;	Robert Stewart	US Department of Interior	Dear Mr. Szabo: The Department of the Interior has reviewed the Draft Environmental Impact Statement (EIS) Department of Transportation (DOT), Federal Railroad Administration (FRA) for Chicago to Council Bluffs - Omaha Regional Passenger Rail System	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. The Draft EIS was reviewed in consideration of your comments. The issues of potential concern were identified in

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	Wildlife; Agency Coordination; Wetlands			Planning Study Tier 1 Service Level, from Chicago, Illinois through Iowa and Omaha, NE, and offers the following comments provided by the U.S. Fish and Wildlife Service. General Comments The Secretary of the Interior, acting through the Fish and Wildlife Service, has primary responsibility for the management of the nation's fish and wildlife resources. The Fish and Wildlife Act of 1956, as amended, requires the Secretary to determine the policies and procedures necessary to implement fish and wildlife laws efficiently and in the national public interest. 16 U.S.C. § 742f(a). The Secretary has additional responsibilities to protect and manage the nation's fish and wildlife resources under other statutory authorities, namely: the Bald and Golden Eagle Act, 16 U.S.C. §§ 668-669(d); the Endangered Species Act, as amended, 16 U.S.C. §§ 1531-1543; and the Migratory Bird Treaty Act, 16 U.S.C. §§ 703-711. To ensure the adequate and equitable protection, mitigation of damage to, and enhancement of fish and wildlife resources, Federal Railroad Administration/U.S.DOT, Iowa DOT should consult with the U.S. Fish and Wildlife Service (FWS) and State natural resource agencies to identify necessary studies. FWS has participated in scoping meetings for this Project and is aware that required studies will be addressed during the Tier 2 phase of this project. Most mitigation measures represent commitments for further coordination with this agency during Tier 2 studies as more detailed information on the design of the Project is developed. Fish and Wildlife Trust Resources There are significant public resources that must be protected or enhanced in some areas affected by the proposed project. In this regard, FWS concerns with the proposed Regional Passenger Rail System from Chicago to Omaha and associated supporting development include potential adverse impacts to federal trust fish and wildlife resources and their supporting riparian, wetland, and terrestrial habitats. Particularly important are potential effects of project operation on the terrestrial environment, wetlands habitat, and migration pathways. In addition, lands managed as part of the National Wildlife Refuge System are located near the project and may be affected by project impacts to rivers (Mississippi River and Missouri River) and surrounding landscapes. Threatened & Endangered Species Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. Listed species for counties in Illinois and Iowa (Region 3), and Nebraska (Region 6), may be viewed at http://www.fws.gov/midwest/Endangered for Region 3 and http://www.fws.gov/mountainprairie/ endspp/ for Region 6. At a minimum, project evaluations should contain delineations of whether or not habitat for these species occurs within project boundaries, or will be affected by project construction and subsequent operation. In cases where these species are known to occur or potential habitat is rated moderate to high, surveys may be necessary. Please contact this office for further information should these species or their habitats be identified in the project area, or be affected by project activities. As of August 9, 2007, the bald eagle is no longer included on the list of threatened and endangered species, but it remains	the document and will be more fully described and evaluated in Tier 2 studies and documents.

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				protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle is a potential resident in parts of the project area and nests have been historically documented in the project area. Project evaluations should include potential impacts to the bald eagle and its habitat. For more information concerning the bald eagle protection, or if impacts to this species are expected, the USFWS should be contacted. Migratory Birds We recommend that the project be evaluated for potential impacts to wildlife, particularly migratory birds, from increased noise and vibration resulting from increases in train frequency and speed for the alternatives considered. If you have questions regarding these comments, please contact Heidi Woeber, U.S. Fish and Wildlife Service, 1511 47th Avenue, Moline, IL 61265, (309) 757-5800, ext. 209.	
5909	Public Involvement	Dennis Witt	Individual	Can you send me any other additional information as I wasn't able to attend any of the meetings, send this out to me if you could? Thank you.	Mailed meeting materials
5777	Wetlands; Corrections to the Document	Mike Hayes	USACE	Andrea: In giving this a quick read, I'm very surprised that this project appears to be already down to one 'build' alternative (Alternative 4/4-A) after the Tier I analysis . Could that be true, or am I misunderstanding something? Also, I noted on Figure ES-3 that evidently there is a city called Galesburg in central Iowa along Alternative Route 4/4-A about where Des Moines used to be. I'm familiar with Galesburg, Illinois, but in over 25 years of working in the 404 Regulatory arena in Iowa, I never realized there was a Galesburg in that state! Considering mitigation for unavoidable impacts to wetlands and waters, they need to realize there are very few wetland mitigation banks in Iowa. There are no stream mitigation banks in the state and there are no "in-lieu-fee" programs in effect.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. During the NEPA scoping process, several options for providing passenger rail service were identified as "route alternatives," and these alternatives were reviewed and screened for their ability to meet the purpose and need for the project, their technical feasibility, their economic feasibility, and environmental concerns related to their construction and operation. The results of this screening process were documented in an Alternatives Analysis Report. A draft of that report was made available to public and agency reviewers online through the project website (http://www.iowadot.gov/chicagotoomaha) and was revised in response to comments received. After reviewing and screening the route alternatives and considering public and agency input, it was determined that only one route alternative (4-A) was reasonable and feasible for carrying forward for detailed study in the Tier 1 Draft EIS. The Draft EIS also evaluated the No Build Alternative and addressed potential impacts of initial implementation of the Build Alternative, increased impacts as the passenger rail service expanded, and impacts of full implementation. Consequently, FRA believes that NEPA requirements for analysis of alternatives were met in the Tier 1 Draft EIS. Figures ES-3 and 2-1 in the Final EIS were revised to remove Galesburg, Iowa, and Osceola, Illinois, and to add Des Moines, Iowa. In recognition of your comment concerning potential wetland mitigation options, which may vary by state and USACE jurisdiction, the following sentence was added in Section 3.16.5, Potential Mitigation Measures, in the second paragraph, after the second sentence: "The mitigation strategies to be identified and selected will account for the fact that not all mitigation options are available to all states and USACE Districts."
5782	Routes – Alternative Route; Rail – Current Rail Traffic; Phasing/Phased implementation	Lawrence Malmin	Individual	To the D.O.T. Study Group. Thanks for your very thorough work & generous deadline. Please let me know @ your convenience, if Iowa underwrites the AMTRAK Zephyr. I did not think of this question during the Des Moines hearing. Most of the people in your audience experienced quality rail service before AMTRAK as well as AMTRAK today. Have any of the Study Committee members ridden regular AMTRAK, ACELA or European rail?	Thank you for your comment on the Chicago to Omaha Regional Passenger Rail System Planning Study. Public comments provide valuable input and contribute to the development of a complete environmental analysis. We appreciate your input and participation in the project. The Iowa Department of Transportation does not provide any state funding to support the California Zephyr service. That service is managed by a cooperative effort between Amtrak and the BNSF (Burlington Northern Santa Fe) Railroad. Any changes to the California Zephyr would be determined by Amtrak. Due to the federal requirements associated with introducing

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				Iowa is known as "Fly-Over Country" & Central Iowa is the "Missing Link" for Passenger Rail Service… not something to be proud of. Three of us @ the Botanical Center hearing, including Wally Taylor felt the study group focused on one option, which is the most expensive, will not be funded by the State, would take decades to complete and require State subsidies. The person next to me & his wife drove hundreds miles to catch AMTRAK's (Northern route). Even a hundred & eighty mile round trip from Ames to Osceola, is not convenient. Iowa is shamefully behind other States, because of AMTRAK's rigid positions. Could you to suggest in your final report that AMTRAK consider routing trains two days a week through central Iowa where potential riders are, to test the market? That would still leave AMTRAK service five days a week where the people aren't. (Pardon my grammar.) The Zephyr avoids Iowa population centers, thousands of new riders and income. Unfortunately, the federal government tolerates and funds such gross inefficiencies. If you would suggest movement, on this issue, via your Study, it would be to your considerable credit. Connector service from the Mississippi to the Missouri, with first class rail cars, would be worth market testing. Improvements for speed could follow. Much of the route would easily tolerate sixty mph & there is almost no freight traffic from Ia. City west. Several IARP members plan to lobby Legislators in person, but that's not likely to go anywhere unfortunately.	new passenger rail service on an existing freight railroad (sidings, crossovers, station accommodations, signaling, crossing safety, etc.) it is highly unlikely that Amtrak would do a test run of service on the Iowa Interstate Railroad, in its current condition, to test the market. The study team we have assembled for this particular study brings many years of transportation planning, environmental planning and railroad engineering experience and expertise as well as riding Amtrak as a passenger. An alternatives analysis was conducted to evaluate several potential routes, and preliminary cost information was considered in comparing the routes. Route Alternative 4A had the next to lowest implementation cost and the highest projected revenue of the alternatives evaluated.
5769	Agency Coordination; Corrections to the Document	Kristen Andersen	Metra Commuter Rail	Metra is still preparing comments to the Draft EIS, and unfortunately our response will not be ready by the end of the comment period on 12/26/12. We will submit our comments in January.	Your agency responded on December 21, 2012 that Metra would be submitting comments on the subject document. We find no record of your comment submittal, and the comment period closed on December 26, 2012. We are in the process of addressing comments and preparing the Tier 2 Final EIS. To maintain our schedule, we would appreciate receipt of any comments from Metra by February 1, 2013. Thank you.
6046		Joe Cothern	US Environmental Protection Agency	In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act, the U.S. Environmental Protection Agency Regions 5 and 7, have reviewed the Federal Railroad Administration's Draft Environmental Impact Statement on the Planning Study for the Regional Passenger Rail System. This DEIS was assigned a Council on Environmental Quality identification number of20120354. Our review has concluded that adequate analysis of environmental issues relevant to the selection of the preferred alternative was performed. Therefore, EPA has assigned a rating of Lack of Objections to the DEIS. A copy of EPA's rating system is enclosed for your information. To assist the FRA in enhancing the Final EIS, and to focus Tier II analysis, EPA provides the following comments: 1. Coarse and Fine level screening occurred within corridors that were 500 foot wide and 100 foot wide (plus a buffer of 25-50 feet), respectively (ES. 3 .2.1, ES. 3 .2.2.2). However the table of impact (ES-1) does not clearly indicate at what scale the potential impacts are accounted. EPA recommends that the FEIS more clearly describe the study envelopes of: existing Right of Way, Right of Way (plus any additional included study area) for the fine screening, and the 500	Thank you for your participation in the review process and for providing comments on the Draft Environmental Impact Statement. The following are responses to your numbered comments: 1. Your comment on the coarse and fine level screening discussion from the Executive Summary also applies to Sections 2.1.4.1 and 2.1.4.2 in Chapter 2. Table ES-1 noted in your comment was derived from Table 2-4, and the information provided in Tables ES-1 and 2-4 was reported by resource in Chapter 3. Whereas the coarse and fine level screening results were determined through GIS analysis of set corridor dimensions and focused on resources that would be primarily affected from construction disturbance, the values calculated for the Build Alternative were based on GIS analysis of the Potential Impact Area and modeling of projected passenger rail operations. As noted on page ES-16 and also page 2-17, "The existing ROW and estimated additional ROW that would be necessary for track and siding construction and improvements at station locations constitutes the Potential Impact Area." The Potential Impact Area was wider and includes more area than the fine-level screening corridor to account for design options reviewed during development of the Build Alternative. Page 2-18 notes "There are multiple alignment options through East Des Moines, Iowa, and across the Missouri River between Council Bluffs, Iowa and Omaha, Nebraska, as well as multiple station location options in Des Moines, Council Bluffs, and Omaha. Consequently, the

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				foot study area in the coarse screening. 2. ES. 4.22 (Energy Use and Climate Change) predicts considerable decreases in automobile and bus passenger-miles per year and resultant decreases in greenhouse gasses. This section also predicts an automobile fuel decrease of approximately 12 million gallons. Does these predictions account for the increased diesel fuel usage for the rail system? 3. Section 2.2.2.2 (Station Stops). Vitally important to air quality analysis in Tier II studies, will be the amount of time spent by the train at these stations, the emission factors of the locomotives while idling, the land-use/human population at that location, and the baseline air quality condition (attainment/non-attainment/maintenance) at those stops. EPA invites FRA to use of spatial data tools such as NEPAssist (http: //nepassisttool.epa.gov/nepassist/entry.aspx) to help convey the potential impact of rail system pollutant sources upon receptors near these stops. 4. Section 3.1 0.2 provides some general information on three Superfund sites. For additional information on these sites, and most recent points-of-contact please refer to the following fact sheets: http:/ /www.epa.gov/region07 /cleanup/npl files/iad980687933 .pdf, http://www .epa.gov/region07 /cleanup/npl files/iaOOO 1610963 .pdf and, http://www .epa.gov/region07 /cleanup/npl files/iaOOO 161 0963 .pdf. 5. The Draft EIS states that there will be a connection built for the BNSF and Amtrak lines and ancillary facilities built around Wyanet, Illinois. Currently, there are no existing facilities, nor a connection between BNSF and Amtrak lines. Further examination and information related to environmental and public health impacts should be included in the Tier II documents. This analysis should include noise, air emission (especially diesel), storm water run-off, implications to local traffic and any impacts to sensitive populations. Thank you for the opportunity to review and provide comments on the DEIS. If you have questions or require additional clarification, please contact Shanna Horvatin at 312-886-7887, or myself at 913-551-7148.	Potential Impact Area includes all alignments and locations currently under consideration." The exact ROW boundaries of the railroad corridors were not known at the time the evaluations occurred, and as noted previously, the exact boundaries of ROW needed to construct the improvements are unknown during Tier 1. However, the current and future needed ROW would be delineated to address impacts during Tier 2 projects. 2. The predictions did account for the increased diesel fuel usage by railroad locomotives. The text in the Executive Summary was derived from Energy Use and Climate Section 3.22.4, which contains summarized information from Air Quality Section 3.9.4 and Appendix F. Appendix F provides emission calculations and fuel consumption information in gallons per year for various transportation modes, including new passenger rail. A sentence referencing Appendix F has been added to Section 3.22.4. 3. In the Tier 2 studies, the time trains spend idling at stations, the emission factors of the locomotives, the surrounding land use and human population at the station areas, and baseline air quality in those station areas will be considered in the air quality analysis (in addition to other appropriate factors) as well as the information provided by the NEPAssist tool. 4. The information cited for the three Superfund sites has been reviewed and Section 3.10.2 has been updated with the supplementary information. Section 3.10.4, which addresses potential impacts of the Build Alternative, was also revised to account for the updated site conditions and address the likelihood of impacts based on recent cleanup efforts at these three sites. 5. The Potential Impact Area for this Tier 1 EIS included the connection area west of Wyanet, Illinois. Figure 39 in Appendix B shows this connection area including a riparian corridor, streams, wetlands and floodplain (according to GIS data), and farmlands. Consequently, these potential impacts were included within the overall impacts reported for the Build Alternative. Environmental impacts associated with the Wyanet Connection, as well as the need for permitting, are being addressed as part of the Chicago to Quad Cities Expansion Program Tier 2 NEPA documents currently under preparation by Illinois DOT. If there is a need for further improvements to the Wyanet Connection as part of the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Program, they will be addressed in future Tier 2 evaluations and NEPA documentation.
6090	Rail – Improvements; Rail – Current Rail Traffic; Station Facilities & Upgrades; Public Involvement; Routes – Route Alternative 4; Agency Coordination	Alexander Clifford	Metra	Dear Ms. Martin: Metra offers the following comments regarding the Chicago to Council Bluffs - Omaha Tier I Service Level Draft Environmental Impact Statement (EIS). 1. The document states that Alternative 4, which utilizes Metra Rock Island District (RID) track between Chicago and Joliet, is "neither reasonable or feasible" because it lacks a connection to Chicago Union Station (CUS). However, the Chicago - 51. Louis High Speed Rail Final E15, released in late October, identified the RID as the preferred route between Joliet and Chicago. A connection would be added between the RID and Norfolk Southern/SouthWest Service track at 40th Street, allowing trains to enter CUS. Chicago - Omaha service utilizing the RID could also use this connection, and utilize additional track and signals along the corridor added to accommodate the St. Louis service. 2. Metra understands that capacity modeling will take place during the Tier 2 study. Thorough analysis is critical in order to fully identify the track and signal improvements and additional right-of-way needed to support the new service in addition to existing and	Thank you for your participation in the review process and for providing comments on the Draft Environmental Impact Statement. The following are responses to your comments: 1. The rationale for eliminating Route Alternative 4 for not being reasonable or feasible because it lacks a connection to CUS remains valid for the Chicago to Council Bluffs-Omaha passenger rail project (the Project) because the connection does not yet exist. Although, as specified in your letter, a new connection from Metra's Rock Island District track to CUS is proposed, the connection still needs to be evaluated in a Tier 2 NEPA document and designed and constructed. The proposed connection would require land acquisition in an urban setting. In addition, the capacity and level of service of the proposed connection is unknown. Consequently, the potential exists that the connection might not be present, or may not have adequate capacity, which would affect planning and design for the Project. The comparison of route alternatives for the Project was conducted based on the review of existing conditions, including the lack of a Wyanet Connection. Costs (as well as other evaluation criteria) for that connection under Route Alternative 4-A were included in the consideration of the Chicago to Council Bluffs-Omaha project, as were costs for the connection to CUS in Route Alternative 4. The construction of

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				proposed freight, commuter, and intercity passenger trains on the route, especially in the congested Chicago - Aurora segment. Here, capacity is particularly constrained during peak commuter traffic periods in the morning and afternoon. Metra wants to ensure that capacity is preserved for future expansion of Metra service in this successful and growing commuter corridor. Metra strongly recommends that the project team work closely with the BNSF and other railroad owners in the study area, so that the next phase of analysis accurately reflects current and future demands on the rail network. As noted in the Tier 1 EIS document, Preliminary Engineering and an Environmental Assessment of a proposed extension of commuter service on the BNSF to Oswego are currently underway. The potential addition of Metra traffic on this segment of the line needs to be considered during Tier 2 when determining infrastructure improvements and right-of-way costs for the Chicago - Omaha service. Currently, the south side of CUS is at capacity during much of the day, with a limited ability to accommodate additional trains. Recommendations to address this issue were developed as part of the CUS Master Plan study, and also include the relocation of Metra's SouthWest Service from CUS to LaSalle Street Station, as proposed in the CREATE Program. These recommendations, their timeline for implementation, and previous proposals for new train service that would utilize the south platforms of CUS, should be considered during the Tier 2 analysis. 3. Metra requests that additional efforts should be made to include all stakeholders in the process early and often during subsequent portions of this study. If you have any questions, or would like to arrange a meeting or conference call, don't hesitate to contact me directly or Lynnette Ciavarella at (312) 322-8022 or Iciavarc@metrarr.com to facilitate this conversation.	a connection between Route Alternative 4 and CUS is not reasonable or feasible for the Project based upon the anticipated ridership and revenue the service is expected to generate. 2. Tier 2 will include detailed capacity modeling and a thorough analysis of track and signal improvements, and the ROW needed to support the new service in consideration of existing passenger and freight service. FRA, Iowa DOT, and Illinois DOT will work closely with railroad owners and operators to accurately capture current and future demands on the rail network. The Tier 2 evaluations will include consideration of ongoing projects such as commuter service on the BNSF to Oswego, the relocation of Metra's SouthWest service, and a potential connection from Metra's Rock Island District track to CUS. 3. Additional coordination will be occurring with all stakeholders as the process continues for the Chicago to Council Bluffs-Omaha passenger rail project.
5774	Station Facilities & Upgrades, Corrections to the Document, Elderly, People with Disabilities, Cumulative Impacts, Rail Improvements, Phasing/ Phased Implementation, Tier 1 Study	Alan Kline	Individual	GENERAL COMMENTS: While the intended Project is needed, desired by a significant percentage of the public, and long overdue, the Draft EIS is an incredible mish-mash of ineptitude, poor judgment, and overblown planning. The project plan is poorly focused, and staging is not well defined. The goal of the Draft EIS appears to be the creation of an overblown project with unnecessary construction which would provide little utility to the Project, but considerable profit to the consultant and contractors. Overall, the adverse environmental effects of the proposed project, at the initial level of service, are virtually nil. Reducing the level of construction needed in the initial stages would allow the entire Chicago-Omaha route to be implemented at a much earlier time. The Draft EIS places far too much emphasis on traffic headed towards Chicago, and does not recognize the added utility which would be provided by appropriate direct connections at Omaha. I agree that the BNSF-IAIS alternative is not only the ideal alternative for this project, but the only feasible routing. This option serves the greatest number of Iowans at the lowest possible cost. Iowa DOT and its consultants showed extreme incompetence and poor judgment by even including the ex-Milwaukee Road route in	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study (the Chicago to Council Bluffs-Omaha Study). Based on many years of planning the Midwest Regional Rail Initiative, with eight other Midwest states, it was determined that a regional route from Chicago to Omaha would meet the needs of intercity passenger rail service for the State of Iowa. As part of the Chicago to Council Bluffs-Omaha Study, we were required by the FRA (Federal Railroad Administration) to analyze all of the existing or previously established passenger rail routes from Chicago to Omaha. The National Environmental Policy Act of 1969 (NEPA) requires a review of a range of alternatives; consequently, all previously established routes were initially considered. Based on the Alternative Analysis exercise and additional analysis through the development of the Draft Environmental Impact Statement, it was determined that the preferred route for expanded intercity passenger rail is Route Alternative 4-A. Although a Tier 1 NEPA analysis was conducted on a Chicago to Iowa City route, it is considered to be a separate (although related) project, as is the Chicago to Quad Cities component of the route that is being studied under a Tier 2 analysis by the Illinois Department of Transportation. As you noted in your comment, relevant information for those studies was incorporated in the Chicago to Council Buffs-Omaha Study. Although NEPA and FRA environmental regulations requires the evaluation of a rail program from its termini, the information from

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				the initial consideration of routes for the Project. Given the fact that more than two-thirds of the route in Iowa has been dismantled for many years and that the route, when in service, missed virtually every population center of consequence in both Iowa and Illinois (excepting Chicago and Omaha/Council Bluffs), the route should never have reached even the initial stage of consideration. This poor judgment and lack of competence is repeated throughout the document. The goal of the Project at this stage should be to deliver an initial level of service--two to four trains per day over the entire route--in the shortest possible timeframe and at the lowest possible cost. The EIS should not address any issues related to the ultimate goal of seven trains per day, and the possible construction issues related to that goal, until the initial level of service is in operation and the demand for expanded service is evident. The initial level of service can be achieved with minimal construction in Iowa--primarily layover facilities and stations--and can be achieved entirely within the footprint of existing railroad properties. The Executive Summary states the assumption that the Chicago-Moline portion of the route is in operation. Essentially, the Chicago-Moline planning documents are incorporated by reference. Despite this, the EIS wastes considerable time and resources reinventing the wheel, and covers the same territory covered by the previous Chicago-Iowa City documents. Because the Chicago-Iowa City portion of the route has been covered by previous Tier 1 documents, repeating that study in this document is a waste of time and financial resources. As stated above, further studies that may be necessary for increased service can be delayed until such time as the demand for that service warrants. It also appears that virtually no input was sought from the railroads which actually own the lines over which the proposed service would operate. For example, the EIS makes assumptions about the width of Iowa Interstate's right-of-way. Wouldn't it have been relatively simple, and make the document much more accurate, to actually contact the railroad and seek specific information? Considering the fact that the CEO of IAIS' parent company is on record offering his company's support to this Project, it should have been easy to obtain the railroad's cooperation. The document also makes certain projections and assumptions with regard to future levels of freight service on the IAIS--also without any basis in factual evidence from the railroad. I believe that the sections of the EIS which deal with added infrastructure would be far more credible if they were based on the real-world experience of the people who actually own and operate these railroads, and not on the hypotheses of academics, bureaucrats and consultants. While the Draft EIS is replete with copies of letters and email from various public agencies, I have yet to find any from IAIS, BNSF, or UP. **SPECIFIC COMMENTS**: Additional tracks: The current level of freight service on the Iowa	previous studies was used to reduce the effort needed for an analysis of the entire corridor. Railroads have been contacted and involved with evaluating the feasibility of the Chicago to Council Bluffs-Omaha Project. However, a detailed analysis of existing right-of-way is beyond the scope of a Tier 1 analysis because the details of project design and selection of specific locations for stations, layover facilities, and maintenance facilities are not yet known. These elements of the Project will be further evaluated during Tier 2 analyses, as noted in Chapter 5 of the Tier 1 EIS. Thank you for your specific comments on station locations, crossing locations, and layover/maintenance facility locations. Your input will be considered in development of an additional study, called the Service Development Plan (SDP). The SDP will publish in tandem with the final Tier 1 Environmental Impact Statement for the Chicago to Council Bluffs-Omaha Study. This SDP describes the operation, maintenance, equipment, infrastructure, organization, implementation schedule, finances and economics of a regional passenger railroad transportation service proposed to operate between Chicago, Illinois, and Council Bluffs, Iowa. The passenger transportation service contemplated in this SDP would be incrementally implemented from east to west, and through frequency increases, until it ultimately delivers four round-trips per day between the end point cities, operating at a maximum speed of 79 mph. The service would be owned and operated by the States of Iowa and Illinois. The SDP is a component of a Tier 1 Environmental Impact Statement for the Chicago to Council Bluffs/Omaha, Nebraska corridor. This EIS contemplates a further increase of passenger rail service in this corridor consisting of a geographic extension from Council Bluffs to Omaha; a frequency increase to seven round trips per day between Chicago and Des Moines, Iowa, and five round trips per day between Des Moines and Omaha; and an increase in maximum speed to 110 mph. In developing this plan, all of the railroads impacted by the selection of Route Alternative 4-A were consulted. Phased implementation is planned for the passenger rail service between Chicago and Council Bluffs-Omaha to enable Iowa DOT, Illinois DOT, and FRA to provide incremental project funding as it becomes available. This would involve launch of an initial service consisting of two daily round trips operating at 79 mph between Chicago and Moline, which is currently under development by the Illinois DOT with an anticipated start of service in 2015. Subsequently, in Phase 2 these two daily roundtrips would be extended westward to Iowa City in 2017, and in Phase 3 to Des Moines in 2022. Phase 4 would establish four daily roundtrips between Chicago and Des Moines in 2025, and Phase 5 would extend these 4 round trips to Council Bluffs in 2030. A long-term goal for the corridor is to implement 110 mph maximum speed service with seven round trips serving Des Moines and five round trips to Omaha, but no implementation schedule has been established at this time. All future planning, design, and construction activities would be outlined in the Program Implementation Schedule generated for each phase of the Service. Your specific comments will also be considered when Tier 2 studies are performed to address design details and decisions not known at this time during the Tier 1 NEPA process.

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				Interstate is such that the initial proposed service, at 79mph, should easily be accommodated by the existing rail line, and no additional main track construction is required. The length and location of existing sidings, as indicated by the current IAIS timetable, appears to be quite adequate for the initial level of service. Comment from the IAIS is required to confirm or deny this assumption. **Mississippi River crossing**: There is no need to consider any plan for construction of a new bridge across the Mississippi River. The existing Government Bridge ("Arsenal Bridge") is entirely adequate for any level of service anticipated in the foreseeable future. The bridge is well-maintained by the Army, and I have heard nothing to indicate that the bridge, assuming that the level of maintenance continues, is nearing the end of its useful life. Constructing a new bridge that would be connected to the IAIS line presents nearly insurmountable financial, political and environmental issues. Fortunately, those issues need not be considered. **Iowa City station**: The existing depot structure in Iowa City (ex-Rock Island; currently owned by IAIS) is vacant and presently on the real-estate market. Acquiring this facility for the project offers an opportunity to renovate a historic structure with no environmental impact, returning the structure to its original intended purpose. **Iowa City layover facility**: The Iowa Interstate recently vacated its Iowa City locomotive facility, and because the Iowa City layover facility is intended only as an interim facility, it may be possible to use the existing facility on a short-term basis with minimal modifications. It also seems reasonable to think that IAIS would be willing to discuss the use of a track within the existing yard for use as a layover track. Neither of these possibilities would create any adverse environmental effects. One locomotive idling at the existing locomotive facility would have far less environmental impact than the half-dozen engines which might have been present at any given time, during previous use of the facility by the IAIS and Rock Island. **Des Moines routing options**: The most important issues to be considered are improvements to the Union Pacific-owned section of line between East Des Moines (IAIS milepost 353.2) and the point where IAIS ownership resumes, a short distance west of the junction with UP's north-south mainline (UP CPU074). Comments suggesting an overpass crossing the UP at this point are simply unrealistic in terms of constructability and cost. It would be far more productive to discuss with UP options which could improve the flow of both passenger and freight traffic through this area. Vacant land, formerly used for railroad purposes, exists between SE 14th Street and the Des Moines river and could be used for a layover facility. While this would require a short reverse move from a downtown station, the use of push-pull trainsets would minimize this issue, and this location for a layover facility would eliminate the need to handle diesel fuel in the downtown area. **Des Moines station location**: A public comment included in the	

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				Draft EIS suggests that the station be located near Waukee, citing the Jordan Creek Town Center shopping mall and the west campus of Des Moines Area Community College as reasons. I strongly urge that no consideration whatever be given to this suggestion. Jordan Creek mall and the DMACC campus are local destinations which would produce little if any ridership for an intercity service. Further, a far-western station location removes the service from the vast majority of the metro area population, would require significant changes to existing public transit services, and would require considerable driving from Altoona, Ankeny and Indianola, among other cities. Removing the station location to such a far-western location would also introduce significant adverse environmental-justice (Title VI) effects, as it would render use of the service by a large portion of the minority community either impractical or impossible. It makes far more sense to locate the Des Moines station in the downtown location suggested by the Draft EIS. The downtown area offers a far wider range of attractions which would induce intercity passenger traffic, is the heart of the Des Moines business community, and is centrally located to attractions in other parts of the metro area. While it would be historically desirable to acquire and renovate the existing Rock Island depot, this may not be the ideal alternative for this Project. It is not clear that the current owner would be willing to sell at a price that makes economic sense for this project. Further, the existing depot is located about one and one-half blocks east of the new Des Moines Area Regional Transit Authority "Central Station" hub--a significant distance for passengers with children and/or luggage, the elderly and disabled, and for anyone during times of adverse weather. It may make more sense to acquire the properties between Fifth and Sixth avenues, north of the IAIS tracks, to construct a new facility. These properties, owned by Polk County and Wells Fargo, are currently in use as parking lots, and thus would not require demolition of existing buildings. In this case, the rail station would be located directly across the street from the transit hub. The station should be sized to accommodate future passenger rail service between Minneapolis/St. Paul and Kansas City. It would also make environmental and economic sense to construct a facility which could also accommodate intercity buses (replacing the existing, decrepit intercity bus depot in Des Moines) as well as shuttles to Des Moines International Airport. In short, locating as many public urban and intercity transportation options as possible, in a two-square-block area, presents an unmatched opportunity to the project. **Council Bluffs station and/or terminal**: I do not support any implementation of the project which would terminate the service, even for a short term, in Council Bluffs. It is imperative that the service connect at the earliest possible time to Amtrak services at the Omaha depot. The Draft EIS gives little consideration to passengers who may wish to travel to the western end of this Project and then connect to existing Amtrak service at Omaha. Requiring such passengers to use a connecting bus from Council Bluffs to Omaha,	

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				or worse still, requiring those passengers to provide their own connection, damages the traffic potential of the western end of the route. Requiring such a connection on an interim basis would damage the credibility of the service in such a way that regaining those passengers would be difficult when through service to Omaha is established. If a Council Bluffs station is established, Finally, if a Council Bluffs station could be justified financially and politically, just across the river from Omaha, consideration should also be given to a Davenport station, just across the river from Moline. Council Bluffs/Omaha routing issues: The only logical route from the IAIS to Omaha is: onto the UP at Council Bluffs, across the UP Missouri River bridge, and cross over onto the BNSF to access the Amtrak depot. There appears to be no need to construct a new bridge across the Missouri River; again, confirmation from the UP is required. **Omaha depot**: There are no acceptable station sites in Omaha, with the exception of the existing Amtrak depot. As pointed out above, it is imperative for passengers of this Project to have the most convenient possible connection to and from Amtrak's California Zephyr at Omaha. No location other than the existing Amtrak depot offers such a convenient connection. Using the existing depot eliminates any need for major construction--the only construction necessary would be a crossover from the westward BNSF main to the eastward BNSF main, which has the platform at the Amtrak depot. Construction of this crossover would be within existing railroad rights-of-way and have no adverse environmental impact. Use of the Omaha Union Station does not appear possible or feasible. The building has been converted to other uses, and passengers coming to that station from the existing Amtrak depot would need to cross both the BNSF and UP main tracks. Pedestrian grade crossings would undoubtedly be unacceptable to both carriers, and constructing a pedestrian underpass would be prohibitively expensive, particularly in comparison to use of the existing Amtrak station. ADA issues would also have a significant cost impact on such an underpass. The old Burlington station is far too large for the initial stage of the proposed project, and requires extensive structural repairs and renovation, making it financially infeasible for this project. At some point, should this service prove successful enough to justify the seven round-trip level of service, Amtrak, the city of Omaha, and the Nebraska and Iowa DOT's may wish to revisit the subject. However, this is not an appropriate time. Suggestions to locate an Omaha depot at any location other than the existing Amtrak depot appear to be nothing more than a failure by the project team to envision this service as an interconnecting part of the national passenger rail system, and an effort by the consultants to inflate the cost of the project and therefore, their profit.	
5766	Support the Project, Corrections to the Document, NEPA, Alternatives,	Wallace L. Taylor	Sierra Club, Iowa Chapter	To Whom It May Concern: The following comments on the Tier 1 Environmental Impact Statement (EIS) for passenger rail are submitted on behalf of the Iowa Chapter of the Sierra Club. The Sierra Club is the nation's largest grassroots environmental organization with over 600,000 members. Its Iowa Chapter has approximately 5,000 members.	Thank you for taking the time to provide us with comments as part of our Draft Environmental Impact Statement effort for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study. Your comments focus on the alternatives analysis component of the Tier 1 Draft Environmental Impact Statement (Draft EIS), and compliance with the National Environmental Policy Act of 1969 (NEPA) and Section 4(f) of the Department of Transportation Act of 1966.

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	Cultural Resources, Transportation – Highway Congestion, Elderly, People with Disabilities, Parks, Section 4(f), Energy Use			The Iowa Chapter of the Sierra Club enthusiastically supports passenger rail and supports its expansion in Iowa. We support public transportation solutions that are more efficient users of transportation fuels. By reducing the amount of fuels used, our reliance on fossil fuels is reduced. The extraction of fossil fuels destroys the environment. The combustion of fossil fuels creates greenhouse gases that cause climate change. The benefits of reduced reliance on fossil fuels include reduced air pollution. Public transportation, such as rail, results in reduced vehicle miles traveled and reduced infrastructure devoted to cars and congestion. These solutions also preclude building more highways that go through natural areas and historical sites. Additionally, public transportation benefits those who do not own and drive a car, including elderly, disabled, and low-income families. With regard to the EIS, we agree with the initial decision to examine alternative routes using preexisting rail lines. Using existing rail lines would obviously have less impact than constructing a new route that would impact formerly unused land and resources. We are concerned, however, that the analysis of alternatives is inadequate and does not comply with NEPA and its accompanying regulations. The analysis of alternatives is contained in Appendix A of the Draft EIS, rather than in the body of the document. Thus, the only alternatives "analysis" in the body of the Draft EIS is a comparison of the preferred alternative and the no build alternative. That means there is actually no analysis of alternatives in the Draft EIS itself. And even the analysis of alternatives in Appendix A is inadequate, especially with respect to environmental concerns. Environmental impacts, of course, are the raison d'etre of an EIS. But the Draft EIS for this project spends only a few very short paragraphs discussing these impacts in the course-level screening, and for the fine-level screening adds nothing more than a chart adding up the number of environmental resources that might be impacted by each alternative. There is no description or comparison of the nature and extent of the relative impacts of each alternative on the environment. The National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq., "declares a broad national commitment to protecting and promoting environmental quality." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348, 109 S.Ct. 1835 (1989). NEPA explains that policy as follows: The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private	The response below addresses your comments. <u>Alternatives Analysis and NEPA Process</u> The focus of a Tier 1 analysis, as governed by Federal Railroad Administration (FRA) requirements, is to address the broader questions relating to cities and stations served, route alternatives, service levels, types of operations, ridership projections, and major infrastructure components. FRA determined that it was necessary to do a Tier 1 analysis because of the complexity of managing the NEPA process for such a large-scale project (approximately 500 miles in length; traveling through Illinois, Iowa, and into Omaha, Nebraska). A Tier 1 study allows FRA and other agencies to utilize an initial phase that focuses on the broad issues, such as purpose and need, general location (corridors), land use implications of alternative routes, environmental fatal flaws, etc.; before expending the resources that are needed for subsequent detailed analyses of the many Tier 2 subsections that are necessary in a lengthy corridor such as this. As such, the Tier 1 broad analysis of route alternatives is a valid approach for complying with NEPA on large-scale projects (*Guidelines on the Use of Tiered Environmental Impact Statements for Transportation Projects*, prepared for AASHTO by PB Americas, Inc. and Perkins Coie LLP, June 2009). As noted in Attachment E of the Alternatives Analysis Report in the response to the Illinois Department of Natural Resources comment, the intent of the environmental screening process at the Tier 1 level was to identify environmental fatal flaws; and that purpose and need, engineering, and cost considerations were the main drivers for screening out alternatives. Key environmental resources were evaluated in a study area around each route alternative corridor, based on publicly available data such as open-source aerial imagery and geographic information system (GIS) data. The corridors considered in the Tier 1 Alternatives Analysis are substantially wider than the Right-of-Way (i.e. impact area) that is expected to be needed for the project. This width leaves flexibility for specific alignments within the corridor to be determined in Tier 2, when a higher degree of engineering is available, and also allows for avoidance and minimization of impacts within the corridor. The Alternatives Analysis report was included as an appendix because it is a lengthy methodical discussion of the information that was considered in the analysis, and as such, is more appropriate as an appendix item. (Council on Environmental Quality, NEPA's Forty Most Asked Questions [25a]) . Section 2.1 of the Tier 1 Draft EIS includes much of the information derived from the Alternatives Analysis Report, as a summary of the analysis and conclusions, and was revised in the Tier 1 Final EIS in response to comments on the Draft EIS. Although the route alternatives were evaluated and screened down to one reasonable and feasible route alternative for evaluation in the Tier 1 Draft EIS, the Draft EIS still evaluated other alternatives being considered. For example, different routes are still under consideration in the Des Moines metropolitan area and the Omaha/Council Bluffs metropolitan area. The specific locations of some stations, layover facilities, and maintenance facilities are as yet unknown, and the Draft EIS and Final EIS included an evaluation of impacts at these different locations. An operational regime of speeds up to 110 miles per hour (mph) was evaluated for potential impacts, noting that phased implementation would commence at slower speeds. <u>Section 4(f) Analysis</u>

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				organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans. 42 U.S.C. § 4331(a). NEPA has in fact become the "basic national charter for protection of the environment." 40 C.F.R. § 1500.1. Compliance with NEPA ensures that federal agencies will consider significant environmental impacts of federal action, make available the relevant information, and open to public scrutiny their decision making process. Churchill County v. Norton, 276 F.3d 1060, 1072 (9th Cir. 2001). Section 102(2) of NEPA, 42 U.S.C. § 4332(2), is "one of the 'action-forcing' provisions intended as a directive to 'all agencies to assure consideration of the environmental impact of their actions in decisionmaking.'" Kleppe v. Sierra Club, 427 U.S. 390, 409, 96 S.Ct. 2718 (1976)(quoting Conference Report on NEPA, 115 Cong. Rec. 40416 (1969)). The provision also ensures that "agencies act according to the letter and spirit of the Act." 40 C.F.R. § 1500.1(a). NEPA does not mandate a particular outcome for a proposed project. Rather, it is a procedural statute that prescribes the process by which the agency is to reach an informed decision. Robertson, 490 U.S. at 350-51, 109 S. Ct. at 1846. In reviewing an agency's efforts to comply with NEPA a court must determine whether the agency took a "hard look" at the environmental impacts of a project before acting. Sierra Club v. Kimbell, 623 F.3d 549 (8th Cir. 2010). An agency takes a hard look when it "obtains opinions from experts outside the agency, gives careful scientific scrutiny, and responds to all legitimate concerns that are raised." Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 377, 109 S.Ct. 1851 (1989). But the agency cannot take a hard look and then "ignore what it saw." Audubon Soc. of Cent. Arkansas v. Dailey, 977 F.2d 428, 436 (8th Cir. 1992). An EIS must discuss reasonable alternatives "to the proposed action." 42 U.S.C. § 4332(2)(C)(iii). The alternatives analysis is the "heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA demands that the agency "rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14. The "existence of a viable but unexamined alternative renders an environmental impact statement inadequate." Resources Ltd. v. Robertson, 35 F.3d 1300, 1307 (9th Cir. 1994). The cursory treatment given to the alternatives in this case does not satisfy these requirements. Appendix A of the Draft EIS also states that each of the five alternatives impacts Section 4(f) properties. Section 4(f) of the Transportation Act, 49 U.S.C. § 303, prohibits the Secretary of Transportation from approving a project that requires the use of a public park, recreation area, wildlife and waterfowl refuge, or land of an historic site of national, state, or local	Although Route Alternative 4-A could potentially impact slightly more Section 4(f) resources than other alternatives, the analysis was based on a buffer without conceptual engineering, allowing flexibility in design to avoid or minimize impacts on the resources. The potential impacts identified do not constitute a Section 4(f) "use". A determination still needs to be made during Tier 2 as to whether certain properties are protected under Section 4(f). Additionally, a determination of adverse effect would need to be conducted for historic resources for determining a Section 4(f) "use" and this effort would not be conducted until Tier 2. Consequently, a Section 4(f) evaluation could not be conducted during Tier 1; full evaluations or other Section 4(f) documentation would be developed during Tier 2 along with NEPA documentation for individual Project sections. Because Illinois forest preserves, which are considered to be a Section 4(f) resource, exist on both sides of the railroad ROW for all route alternatives, the potential exists for all route alternatives to impact Section 4(f) properties. Although not reported in the Alternatives Analysis Report, Route Alternative 3 that was eliminated from fine level screening also passed through potential Section 4(f) properties, including parks and forest preserves. Consequently, there is no feasible and prudent avoidance alternative when considering the route alternatives analyzed. Similar to Section 4(f) properties, a detailed analysis of specific impacts on Section 6(f) properties was deferred until Tier 2. FRA, Iowa Department of Transportation (Iowa DOT), and Illinois Department of Transportation (Illinois DOT) will evaluate impacts on Section 4(f) and Section 6(f) properties, with the design process avoiding the properties when possible and minimizing the impacts if the properties are unavoidable. Close coordination with the officials that have jurisdiction of the properties would be performed during Tier 2 concerning any potential impacts and the need for specific mitigation. Changes documented in the Final EIS Since issuance of the Draft EIS, comments on the document have been reviewed in consideration of updating the document to create a Final EIS. Iowa DOT has drafted a Service Development Plan (SDP), a planning document that addresses the rationale for and details of the proposed passenger rail service, including a plan for phased implementation of the service, an operating plan for each phase of service, and a capital and financial plan for determining the types and amounts of funding needed for each phase of service. The SDP has an approximate 20-year planning horizon, but under phased implementation, full implementation of the Project would extend beyond 20 years. Therefore, Iowa DOT, in coordination with FRA, decided to focus the SDP on the interim implementation phase, which is the phase of the Project that would be implemented within this 20-year planning horizon. The interim implementation phase would likely include four round-trips per day at 79 mph between Chicago and Council Bluffs, while full implementation would be five to seven round-trips per day at 110 mph between Chicago and Omaha. The Final EIS has been updated with discussions on the interim implementation phase. Chapter 2, Alternatives, has been revised to account for the SDP and other clarifications concerning the alternatives analysis process. For example, further information has been added to Section 2.3 to indicate that the potential impacts presented in Table 2-4 are overestimated based on the conservative analysis performed for the Study. The Draft EIS assessed impacts of train service at speeds up to 110 mph and noted that phased implementation (with less service, fewer stops, and slower speeds)

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				significance unless: (1) there is no prudent and feasible alternative to using the land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use. FRA regulations require that, for projects subject to the Section 4(f) requirement, the 4(f) evaluation must document why there is no “feasible and prudent” alternative and the planning measures taken to “minimize harm” to the property resulting from the use. 49 C.F.R. § 266.19(b)(4). An EIS should document compliance with applicable requirements, including Section 4(f). Id. FRA must determine whether there is no feasible and prudent alternative before using a protected resource. Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 91 S.Ct. 814 (1971). “The intent of Congress in enacting Section 4(f) was to ensure that the protection of parkland was given prime importance in considering where to build federal roads and highways [and other transportation projects].” Id. at 412-13. The language of Section 4(f) “is a plain and explicit bar to the use of federal funds for construction of [projects] through parks – only the most unusual situations are exempted.” Id. at 411. (emphasis added). In relation to transportation alternatives, an alternative is infeasible if, “as a matter of sound engineering,” that alternative cannot be constructed along the planned route. Id. at 411. An alternative is imprudent if there arises “unusual factors” or “cost or community disruption” as a result of “extraordinary magnitudes” that argue against building a [project] along such a route. Id. at 413. If no feasible and/or prudent alternative is available, [FRA] must also find that the plans for the project minimize the harm to the protected 4(f) resources. Id. at 411. The Supreme Court has developed a three-step analysis for a court to review FRA’s decision to use resources protected by Section 4(f). Id. at 416-17. First, the reviewing court determines whether the FRA acted within the scope of its authority. This requires that the agency understand that the scope of its authority was limited to approving a use of land where there were no feasible and prudent alternatives and all possible planning had been undertaken to minimize harm to the 4(f) resource. Id. at 416. Second, the reviewing court must determine that the agency’s decision was not “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law” based on the relevant factors. Id. A searching and careful inquiry must be made; however, the reviewing court is not to substitute its own judgment for that of the agency. Id. Third, the court must determine whether the agency followed the necessary procedural requirements. Id. at 417. With respect to the Draft EIS in this case, there was not even an attempt to undertake the required Section 4(f) analysis, let alone an adequate analysis. Thus, the Draft EIS does not comply with the law and regulations.	would result in fewer impacts. The Final EIS includes a quantitative evaluation of operational impacts at a train speed of up to 79 mph with up to four round-trips per day between Chicago and Council Bluffs (see Section 3.28). <u>Conclusion</u> In conclusion, FRA believes that the approach for evaluating alternatives and documenting the results in the Draft EIS and Final EIS complies with NEPA requirements, and that Section 4(f) requirements have been met during the Tier 1 process. During Tier 2, the Project will be further developed with the consideration of environmental impacts in maximizing the extent of reconstruction within existing ROW. Environmental impacts will be avoided when possible, minimized when avoidance is not possible, and mitigated for as needed, with coordination between the transportation agencies and managing authorities of the resources. The refined project footprint will be developed in consideration of Section 4(f) properties, with avoidance of use being a key factor. Tier 2 NEPA documentation will include consideration of alternatives within the preliminary impact area defined in Tier 1, with adjustments made as warranted.

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				The failure to prepare an adequate examination of alternatives and to prepare a Section 4(f) analysis cannot be explained away with the argument that minor revisions to the basic preferred route will be made in the Tier 2 EIS. The appropriate examination of alternatives and Section 4(f) analysis must be done with respect to all of the alternatives, not just the preferred alternative. The fact of the matter is that in the Draft EIS only one alternative – the preferred alternative – is being examined and only that alternative will be considered in the Tier 2 EIS. This process does not comply with NEPA. In the end it may well be that the preferred alternative – Alternative 4A – will be the best one. But the NEPA process should not be manipulated to ensure that the preferred alternative is the only one appropriately considered. Passenger rail in the Midwest is so necessary and its expansion is so important that it deserves to be implemented properly. Thank you for considering these comments. Please keep the Iowa Chapter of the Sierra Club informed of any further actions on this project.	

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