2.0 Alternatives

This section is structured to provide an understanding of the methodology used to identify and consider a broad range of transportation improvement alternatives, the process used to develop, refine, and evaluate alternatives, and the resulting selection of the alternatives to be carried forward for detailed evaluation in Section 3.0. A more detailed description of the alternatives development and evaluation process is provided in the Alternatives Evaluation Report (AER).[1]

A key component of the study process included bringing together stakeholders and transportation providers who have interests in improved transportation in the Illiana Corridor Study Area. Their early and frequent involvement in the study process has been essential to the development and evaluation of a broad range of proposed transportation improvements. Stakeholders participated directly in defining transportation problems, identifying environmental and community constraints, identifying transportation improvements to consider, identifying the locations of those improvements, and identifying the criteria for evaluating improvements.

As noted, the Environmental Impact Statement (EIS) for the Illiana Corridor study is being advanced in two tiers. The Tier One EIS is intended to resolve the mode, facility type (e.g., type of roadway), and the selected corridor or corridors to study in detail in Tier Two. The Tier One EIS includes a conceptual level of engineering detail in order to perform a comparative evaluation of alternative corridors with respect to travel performance and environmental impacts. In Tier Two, detailed engineering and environmental studies for the selected corridor(s) will be conducted, including full engineering plans, profile, and cross sections, access justification reports, interchange type studies, and interchange/intersection design studies. Detailed environmental studies and documentation, and the regulatory requirements of federal and state agencies will also be completed in Tier Two. Tier Two may be completed in one environmental study for the entire selected corridor(s), or Tier Two may have multiple, separate environmental studies for sections of the selected corridor(s) that have independent utility and logical termini. At the conclusion of Tier One, sections of independent utility and logical termini will be identified, provided such sections are possible and meet regulatory requirements under NEPA. For additional information regarding the Tier Two NEPA studies, refer Section 2.7, "Implementation Strategy and Tier Two NEPA studies."

This section begins with a discussion of the process used to develop and evaluate alternatives. Section 2.1 describes the No-Action Alternative. Section 2.2 describes the Congestion Management Process (CMP). Section 2.3 describes the identification of Transportation Corridor Alternatives. Section 2.4 describes the Alternatives Evaluation process and findings. Section 2.5 describes the Conclusion reached with respect to the Alternatives to be Carried Forward in the Tier One Draft Environmental Impact Statement (DEIS). Section 2.6 includes a Description of the Alternatives to be Carried Forward.

[1] Illiana Corridor AER, July 2012. Available at: http://illianacorridor.org/informationcenter/library.

Section 2.7 briefly discusses future potential Implementation Strategy and associated Tier Two NEPA studies. Section 2.8 describes potential Funding and Financing Options.

2.1 No-Action Alternative

A 2040 No-Action (i.e.; Baseline) Alternative was developed for the Illiana Corridor study. The 2040 No-Action Alternative was defined to include fiscally constrained major projects from the 2040 Regional Transportation Plans (RTPs), projects included in the Transportation Improvement Programs (TIPs) of the Chicago Metropolitan Agency for Planning (CMAP), Northwestern Indiana Regional Planning Commission (NIRPC), and Kankakee Area Transportation Study (KATS) outside of the Study Area, and other committed projects (excluding any type of Illiana Corridor project) within and adjacent to the Study Area.

The identification of committed projects included those contained in a multi-year transportation or capital improvement programs, and additional projects as identified based on coordination with the Study Area counties. These projects are listed in Table 2-1 and are shown graphically in Figure 2-1. The No-Action Alternative will be carried forward for consideration throughout the Tier One and Tier Two NEPA studies and will be compared to all corridors with respect to travel performance and socioeconomic and environmental impacts.

Figure 2-1. 2040 No-Action Alternative Improvements

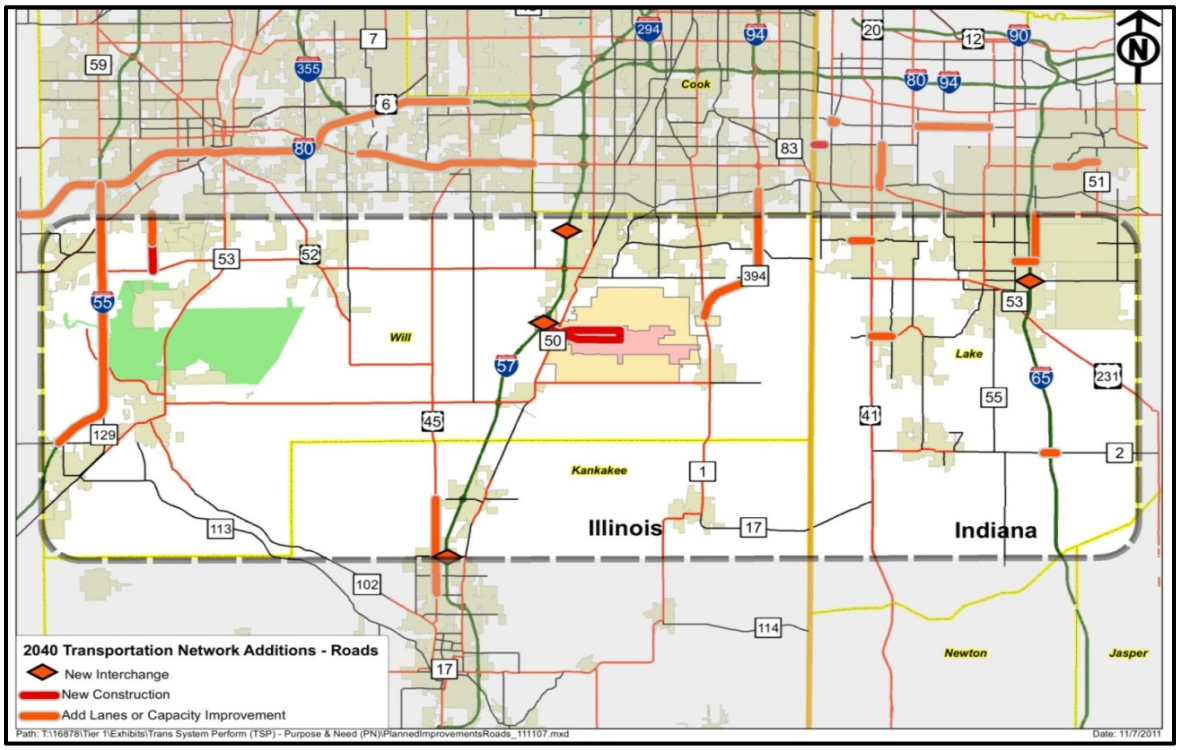


Table 2-1. Committed Projects In or Near the Study Area

Route	Description	Location
Will County, Illinois		
I-80	Add lanes	From US 45 in Frankfort to US 30 in New Lenox (C)
I-80	Add lanes	From US 30 in New Lenox to Ridge Road in Minooka (I)
US 30	Add Lanes	From IL-43 in Frankfort to Williams St. in New Lenox (M)
IL-394	Upgrade to Limited Access	From IL-1 in Crete to Sauk Trail in Sauk Village (I)
I-57	New Interchange	At Stuenkel Road in University Park (M)
I-57	New Interchange and Connector Road	At SSA in Monee (I)
Baseline Road	New Road	From Arsenal Rd. to Schweitzer Road in Elwood (I)
I-55	Add Lanes	From IL-113 to I-80 (I)
Kankakee County, Illinois		
I-57	New Interchange at 6000 N Road	Bourbonnais (M)
US 45/52	Add Lanes	From Kathy Drive in Bourbonnais to Manteno Road in Manteno (I)
Lake County, Indiana		
I-65	New Interchange	109th Avenue in Crown Point (M). This project has been completed.
Mississippi Street	New Road	From US 30 to 61st Ave. in Merrillville (N)
101st Avenue	Add Lanes	Merrillville (N)
SR 2	Add lanes, interchange improvement	I-65 east of Lowell (N)
Kennedy Avenue	Add Lanes	Schererville (N)

Source: (C) CMAP; (I) Interview with state, county, and local transportation officials; (N) NIRPC; (M) Inclusion in state multi-year construction program or recent construction.

The proposed South Suburban Airport (SSA) is located within the Study Area east of I-57 and IL-50 and west of IL-394/1. The initial phase of airport development, known as the Inaugural Airport Program, is designated on approximately 5,200 acres, but the Ultimate Acquisition Area is over 20,000 acres, most of which occurs in unincorporated Will County. For purposes of this study, an Inaugural Airport configuration of one commercial and one general aviation runway, with a four-gate terminal for passenger service, was assumed for all 2040 build and No-Action scenarios.

2.2 Congestion Management Process (CMP)

Federal transportation planning regulations require that for projects within designated Transportation Management Areas (TMAs), congestion management strategies must be fully considered as an alternative to increasing capacity for single occupancy vehicles (SOV), whether as part of the project-specific NEPA alternatives analysis, or as part of a regional planning CMP. TMAs are urbanized areas with populations greater than 200,000. The greater urbanized area of northeast Illinois and northwest Indiana is a TMA and includes the Illiana Corridor Study Area.

Both CMAP and NIRPC have established CMPs. The objective of the CMP is to evaluate the ability of congestion management strategies to reduce congestion and SOV travel on a regional basis, and thus avoid the need for adding SOV capacity. As part of the CMP associated with the regional planning efforts for each agency, alternative congestion management strategies are evaluated, including travel demand management strategies and other modes of transportation. Based on this evaluation, when it is shown that the congestion management strategies do not address the transportation needs established through the regional planning process, then SOV capacity adding projects can be considered.

Implementation of the Illiana Corridor is not currently included in the financially constrained portion of the 2040 long-range plans for CMAP, NIRPC, or KATS. Therefore, the Illiana Corridor is not currently considered in the conformity analysis for air quality as part of these regional plans and does not currently result from the CMP for CMAP and NIRPC as an SOV capacity adding project. However, the ongoing planning effort for the Illiana Corridor is included in these regional plans as an unconstrained project, which along with the prior planning efforts described in Section 1.0, prompted initiation of the current Tier One DEIS. Prior to the project being adopted into the long range plans, the project will be evaluated through the respective metropolitan planning organizations (MPOs) and the associated CMP's.

Congestion management can be defined as a series of low cost and/or modal strategies that have the potential to reduce travel demand or better accommodate existing traffic volumes without building additional SOV capacity into the roadway network. The congestion management toolbox for the Illiana Corridor project is discussed in Section 2.3.1. As discussed in Section 2.5.2.1, these congestion management strategies were considered as possible alternatives for addressing the project Purpose and Need.

It was shown through the analysis contained in the project *Illiana Corridor Transportation System Performance Report* (TSPR) (April 2012) (see Appendix A) that rail freight, passenger rail, commuter rail, intercity bus, and commuter bus do not have the ability to meet the project Purpose and Need as stand-alone modal alternatives. The use of non-motorized transportation (i.e.; pedestrian and bicycle) can be categorized as recreational, local errands/short trips and work trips, and would also not have the ability to meet the project Purpose and Need as a stand-alone modal alternative. Additional operational and financial strategies may provide or help sustain transportation benefits. These strategies

will be considered further as part of the Tier Two NEPA studies. Therefore, it was determined that congestion management strategies (i.e.; strategies that do not involve building) would not satisfy the project Purpose and Need as a stand-alone alternative, and is therefore not considered further in the Tier One DEIS.

Individual congestion management strategies, along with other lower cost transportation system management (TSM), travel demand management, and ITS strategies will be considered in Tier Two NEPA studies as location specific complementary components of the selected alternative corridor(s) where practical and feasible to sustain its functional integrity. The relative corridor flexibility is considered with respect to potential multi-purpose use in Section 2.4.3.8.

2.3 Transportation Corridor Alternatives

The identification and development of potential transportation corridor alternatives was structured to ensure consideration of a full range of potential multi-modal transportation improvements within the project Study Area. Potential alternative corridors were identified on the basis of stakeholder input and technical analysis. The overall alternative corridors evaluation process is described in Section 2.4.1.

Several underlying assumptions guided the alternative corridors identification and development process:

- The transportation performance was analyzed based on the project design year of 2040, consistent with the established regional planning horizon for CMAP, NIRPC, and KATS, which are the MPOs representing the Illiana Corridor Study Area. The analysis relied on a regional travel demand model (i.e.; EMME 2) and a Geographical Information System (GIS) database.
- The regional travel demand model was used to evaluate the relative performance of the alternative corridors. The GIS database was developed as a decision support tool for development and comparative evaluation of alternative corridors, as the best available information for the Tier One DEIS. The database has more than 100 layers of environmental, land use, utility, socioeconomic, and transportation data in an electronic format. It was used in identifying where impacts to environmental and socioeconomic resources should be avoided or minimized, as well as in calculating impacts associated with the various alternatives.
- The alternative corridors were developed to define a broad environmental footprint width that would accommodate the likely improvements needed to satisfy the 2040 travel requirements (refer to Section 2.3.4).
- An extensive stakeholder outreach program is an essential component of the overall study process and is being conducted consistent with Illinois Department of Transportation's (IDOT) and Indiana Department of Transportation's (INDOT) Context Sensitive Solutions (CSS) policies and/or practices, through which stakeholder input is sought on every aspect of the Illiana Corridor study. Refer to Section 4.0 (Public Comments and Agency Coordination).

- Both states have enacted enabling legislation allowing the use of a Public-Private Partnership (P3) to design, build, operate, maintain, and/or finance an Illiana Corridor transportation project. Although the primary focus in the evaluation process is finding alternative corridors that meet the transportation Purpose and Need, minimize environmental impacts, and fit in with community planning goals, it was recognized that financial viability will be a factor in the ability to move corridors through the tiered environmental process and beyond.

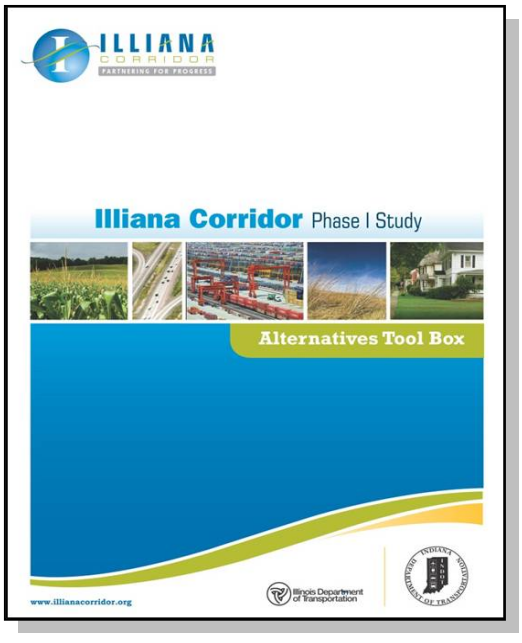
Based on input received through local, state, and federal agency scoping meetings (refer to Appendix B), individual stakeholder meetings, Corridor Planning Group (CPG) meetings, and Public Information Meetings, the transportation issues and problems of the Study Area, as well as a full range of potential multi-modal transportation improvements were identified. The discussion of potential multi-modal transportation improvements included a "toolbox" of various transportation modes as discussed below.

2.3.1 Transportation Improvements Toolbox

To ensure consideration of a broad spectrum of potential solutions, a complete transportation improvements toolbox was developed for the Illiana Corridor study. The toolbox was discussed with project stakeholders at the CPG meeting in August 2011 and included the following potential transportation modes for consideration as possible alternatives for solving identified transportation issues and problems:

<u>Improvements Toolbox</u>

- Local & Express Bus Service
- Commuter Rail
- Intercity Passenger Rail
- Freight Railroad
- Arterial Roads
- Freeways/Expressways
- Toll Roads
- Managed Lanes
  - High Occupancy Vehicle (HOV) Lanes
  - High Occupancy Toll (HOT) Lanes
  - Toll Express Lanes
  - Truck Only Lanes
- Traffic Management
  - TSM
  - ITS



- Non-Motorized
- Multi-Purpose Corridors

2.3.2 Study Area Constraints

During the initial data collection phase of the Tier One DEIS, a comprehensive list of man-made and natural environmental resources was gathered and imported into GIS to form a composite exhibit of Study Area constraints with respect to potential alternatives identification. The Study Area constraints exhibit was presented to the project stakeholders during a constraints review workshop at CPG meeting #4 in September 2011.

The attendees were provided with large format (42 inch x 174 inch) color aerial plots of the Study Area constraints and invited to review and comment on the identified mapping elements based on their local knowledge. The background data gathered through this process is summarized below.

Figure 2-2 shows the major Study Area constraints identified through this process, which includes the Midewin National Tallgrass Prairie and the Joliet Arsenal; the SSA; the surface and subsurface Colchester Mines south of Wilmington, Illinois, near I-55; and Cedar Lake and Lake Dalecarlia in Indiana. The Midewin National Tallgrass Prairie is approximately 7.4 miles wide from north to south. The SSA ultimate build footprint is approximately 4.5 miles wide from north to south. The Colchester Mines area is approximately 9 miles wide from north to south between Strip Mine Road and Gardner Road. The water bodies of Cedar Lake and Lake Dalecarlia in Lake County, Indiana, are approximately 4.5 miles wide from north to south. Each of these areas represents an area of avoidance for potential alternative corridors.

Figure 2-3 shows the built environments within the Study Area that includes, but is not limited to densely populated areas.

Figure 2-4 shows the major areas of environmental concern within the Study Area that were considered when optimizing the suggested alternatives. The Study Area includes several zones of natural areas, forested areas, as well as parks and recreational facilities.

Figure 2-5 shows that the majority of the Study Area is considered agricultural in nature. Alternative development within the agricultural zones would include consideration for severances and disruption to farming operations by direct impacts to the farm structures.

Figure 2-6 shows the National Wetland Inventory (NWI) sites within the Study Area, broken down by freshwater forested/shrub wetlands, other freshwater wetlands, and open waters/lakes. The main concentrations of wetland resources are found along the western edge of the Study Area in vicinity of the Kankakee and Des Plaines rivers and in the northeast corner of the Study Area in an area generally bound by Indiana State Route (SR) 2 and US 41. In the western portion of the Study Area there is a mix of forested/shrub wetlands and other freshwater wetland types. In western Lake County near Cedar Lake, Indiana, forested/shrub wetlands are the dominant type. Additionally,

Figure 2-2. Major Obstacles to East West Routes

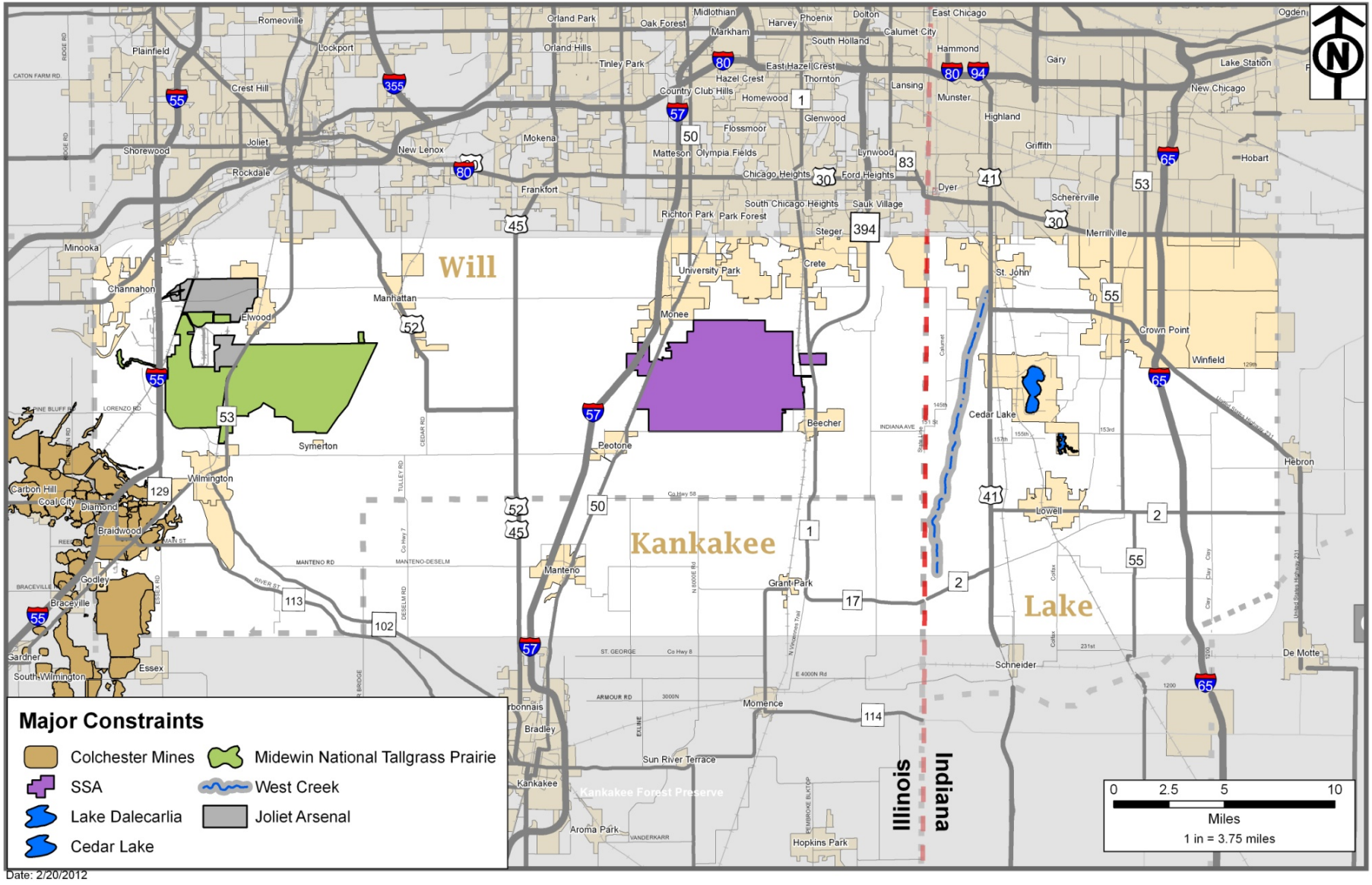


Figure 2-3. Built Environment and Population Densities

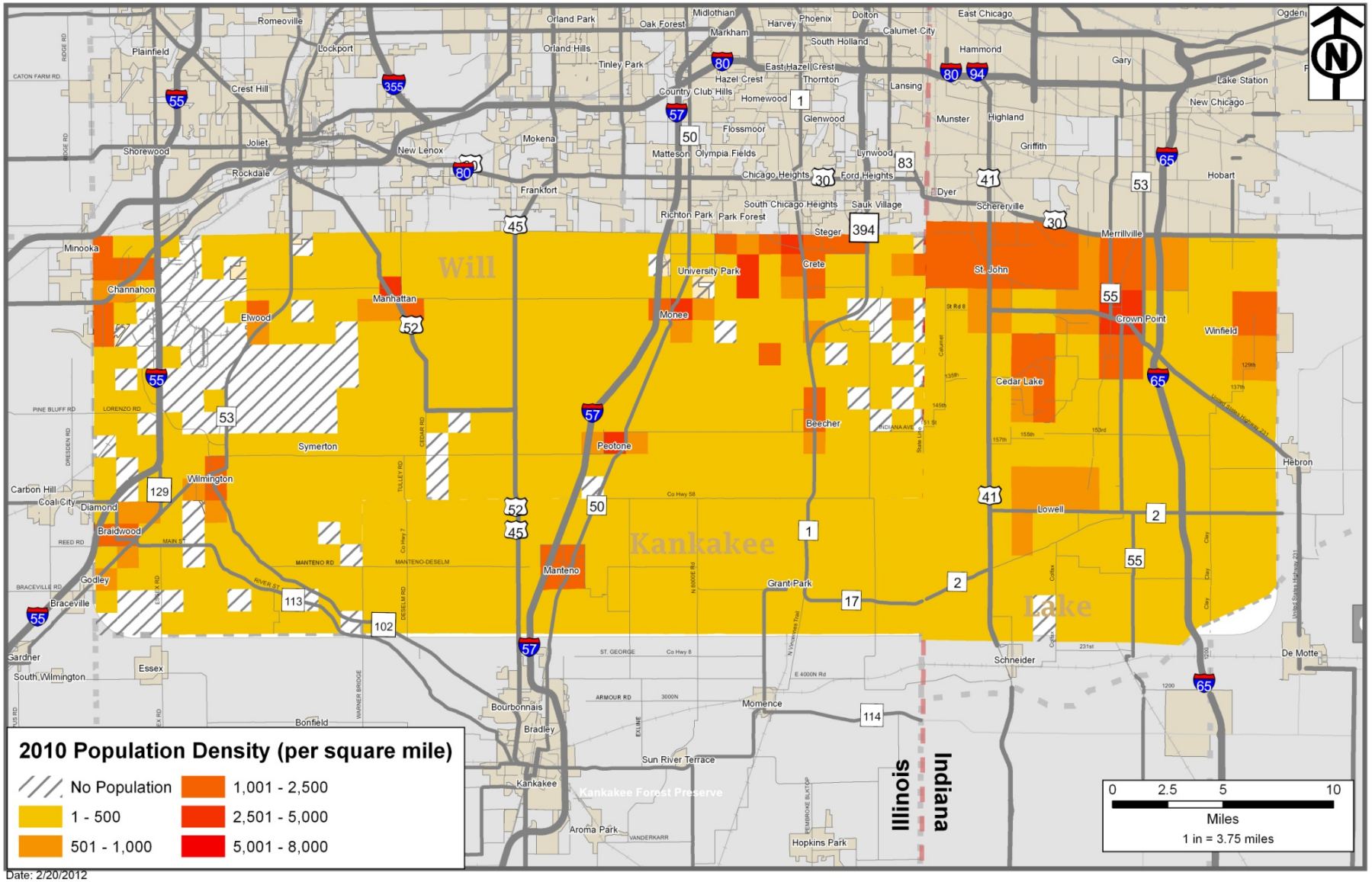


Figure 2-4. Major Environmental Constraints

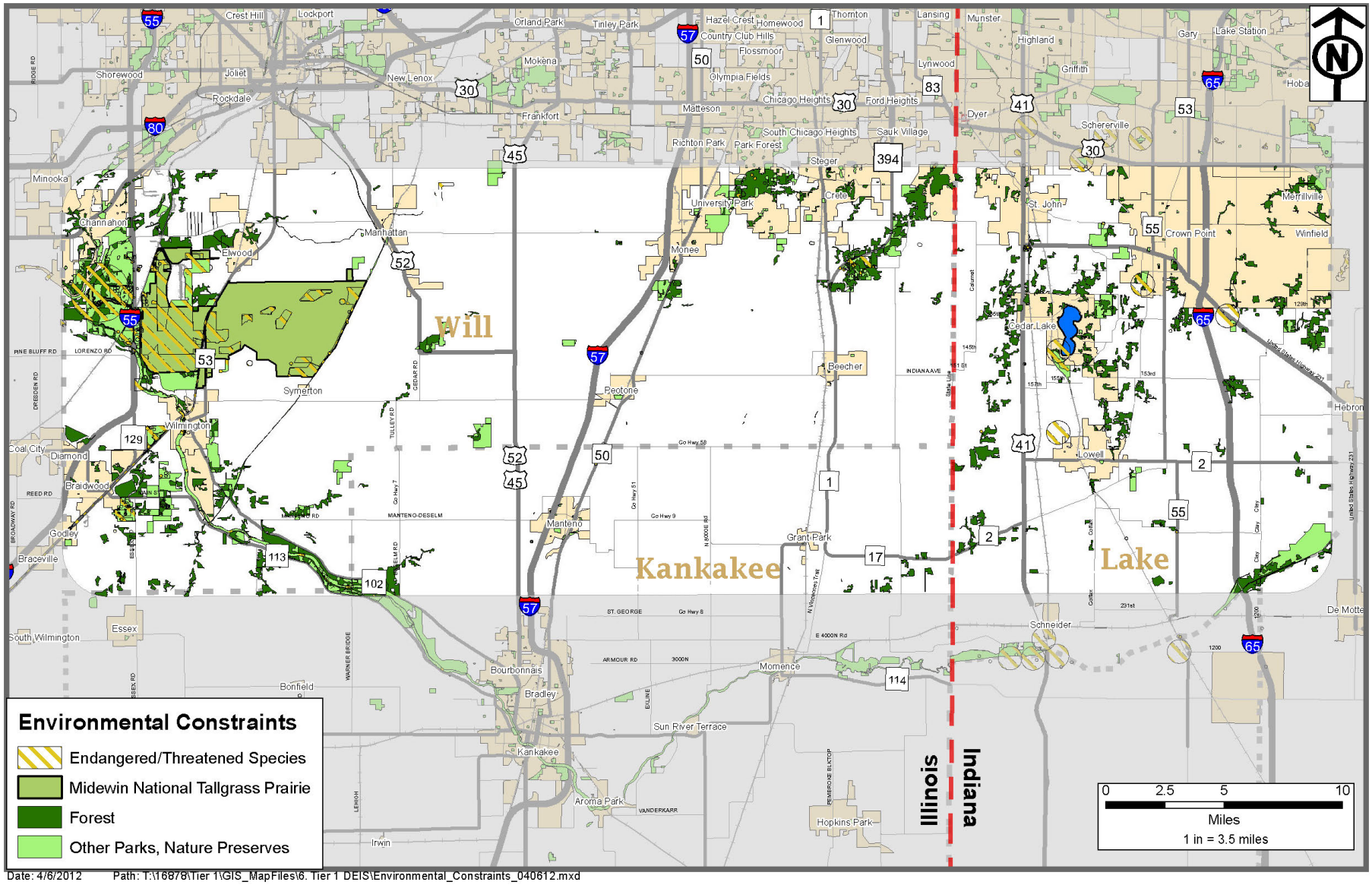


Figure 2-5. Agricultural Land Use

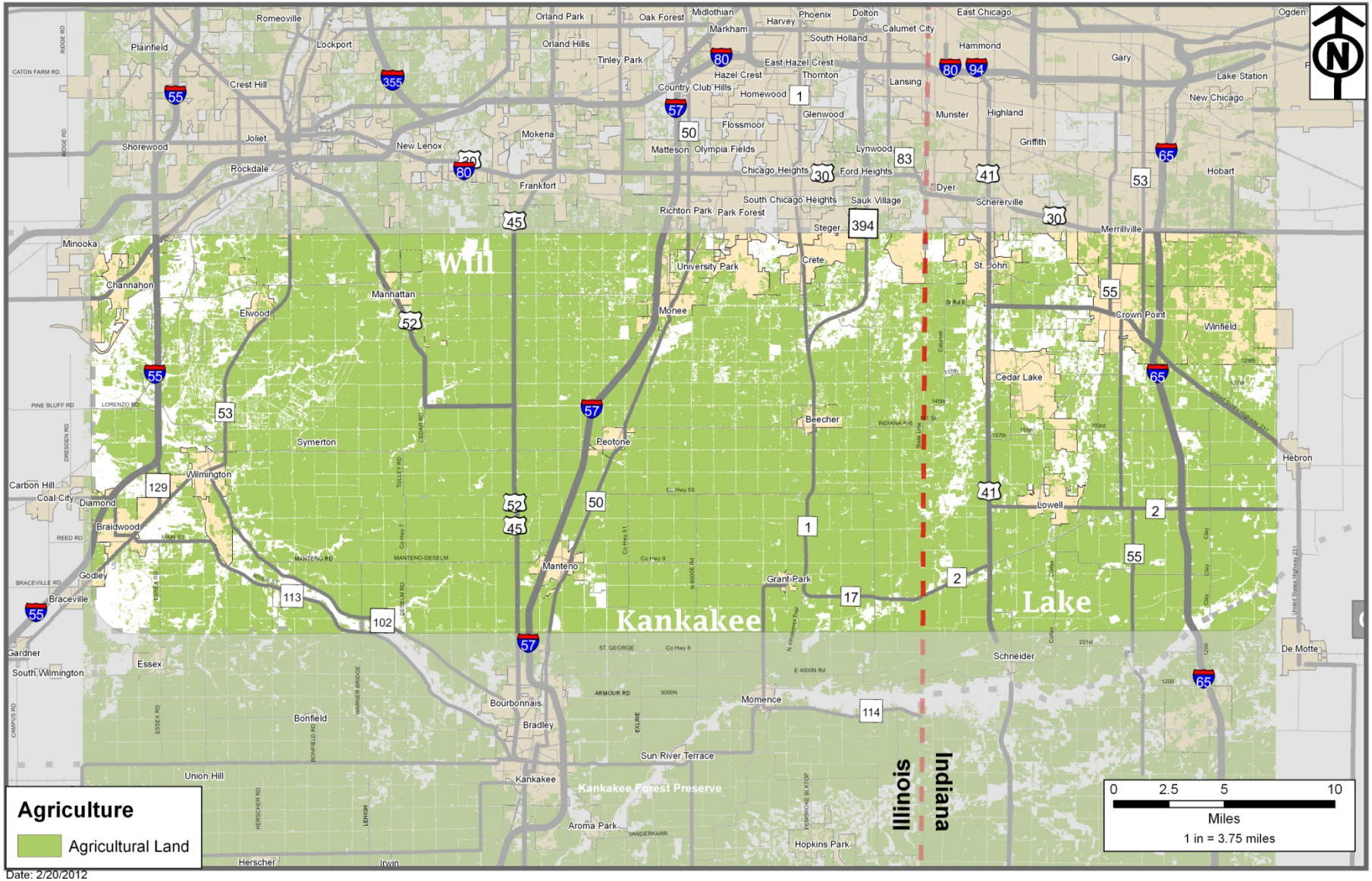
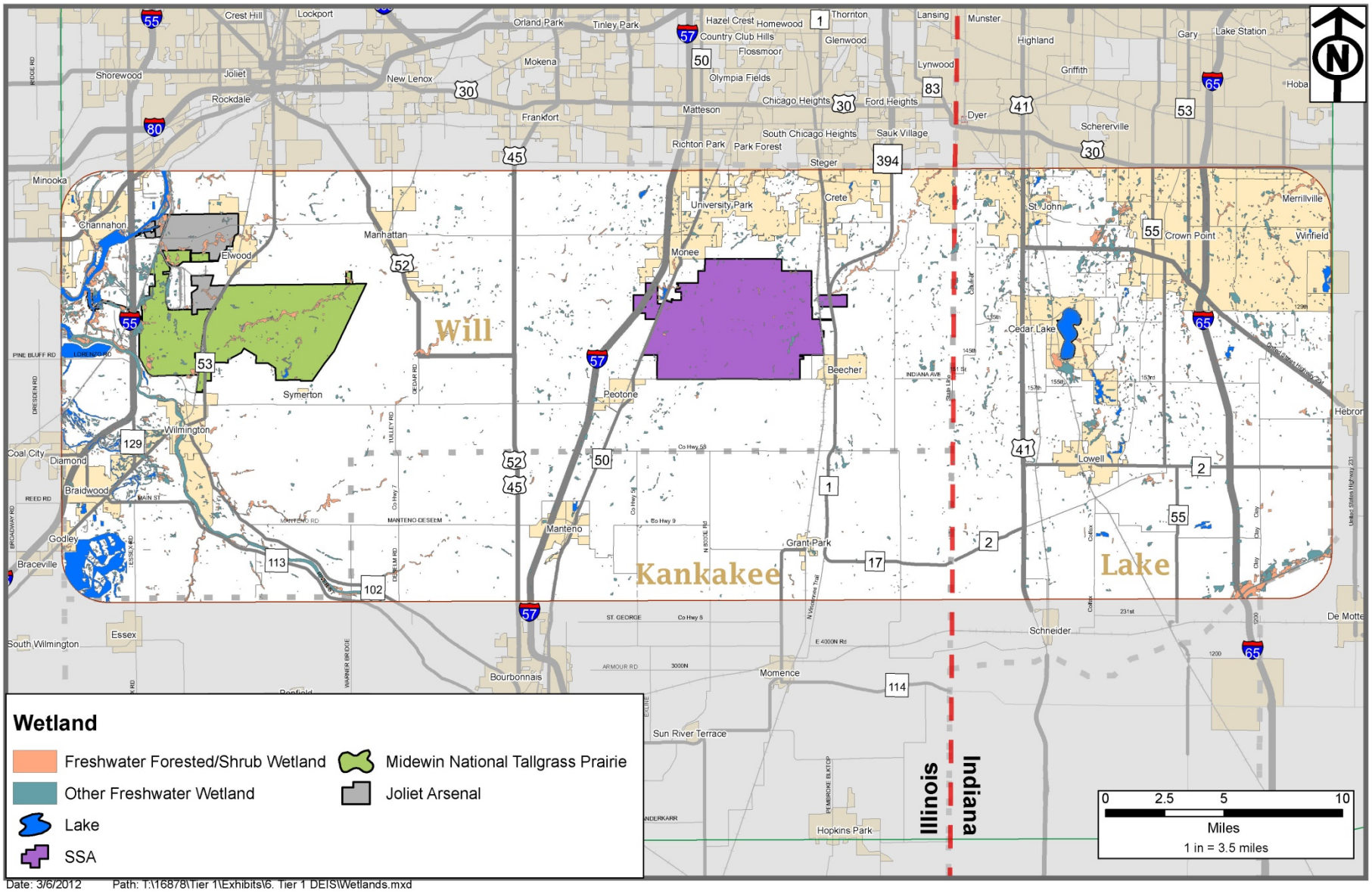


Figure 2-6. NWI Areas



wetlands are prevalent along the northern edge of the Study Area from Manhattan, Illinois, to St. John, Indiana. Field studies will be performed as part of the Tier Two NEPA studies to delineate waters of the US/wetlands.

Figure 2-7 shows the general locations of federal and/or state listed threatened and endangered plant and animal species occurring within the Study Area, based on available GIS database information. Threatened and endangered species are protected under the Endangered Species Act (ESA), which provides a program for the conservation of threatened and endangered plants and animals and their habitats. The largest concentration of known threatened and endangered species in the Study Area occurs within and adjacent to the Midewin National Tallgrass Prairie along the western edge of the Study Area. In addition, several clusters of recorded occurrences of threatened and endangered species are located within the Kankakee River watershed and just south of Crete, Illinois. In the Indiana portion of the Study Area, known threatened and endangered species are located near Crown Point, Cedar Lake, and Lowell. Field studies will be performed as part of the Tier Two NEPA studies to confirm the presence of threatened and endangered species and/or potential habitats.

Figure 2-8 shows the locations of identified cultural resources within the Study Area. The majority of the identified built historic resources within the Study Area that are listed in or eligible for inclusion in the National Register of Historic Places (NRHP) are found in the Indiana portion of the Study Area. Previously identified resources that are 50 years of age or older are found throughout the Study Area in both Illinois and Indiana. The following databases were consulted to identify known cultural resources in the Study Area: Illinois Inventory of Burial Sites (IIBS), the State of Illinois Model for Higher Archaeological Resources Potential (20 Illinois Compiled Statutes (ILCS) 3440), National Park Service (NPS) records, Illinois Historic Preservation Agency (IHPA) records, Indiana Division of Historic Preservation and Archaeology (DHPA) records, Indiana Register of Historic Sites and Structures (State Register), Indiana State Historic Architectural and Archaeological Research Database (SHAARD), Indiana Historic Sites and Structures Inventory (IHSSI) Lake County Interim Report (1996), and the INDOT Historic Bridges Inventory. In this Tier One DEIS, cultural resources have been identified based on existing records. Cultural resources information will continue to be gathered through the remaining Tier One process and in more detail in the Tier Two NEPA studies with field investigations.

2.3.2.1 Summary of Constraints

The Study Area can be looked at in zones that exhibit certain characteristics. The northern one-third of the Study Area is more densely populated and includes more future planned areas for each municipality. In addition to the dense built environment elements, the northern one-third of the Study Area also includes comparatively high instances of recreational facilities, parks, preserve areas, and forested areas than the remainder of the Study Area. Lake County includes some of the more densely forested areas and also several higher population centers such as St. John, Cedar Lake, Lowell, and Crown Point.

Figure 2-7. Threatened and Endangered Species Areas

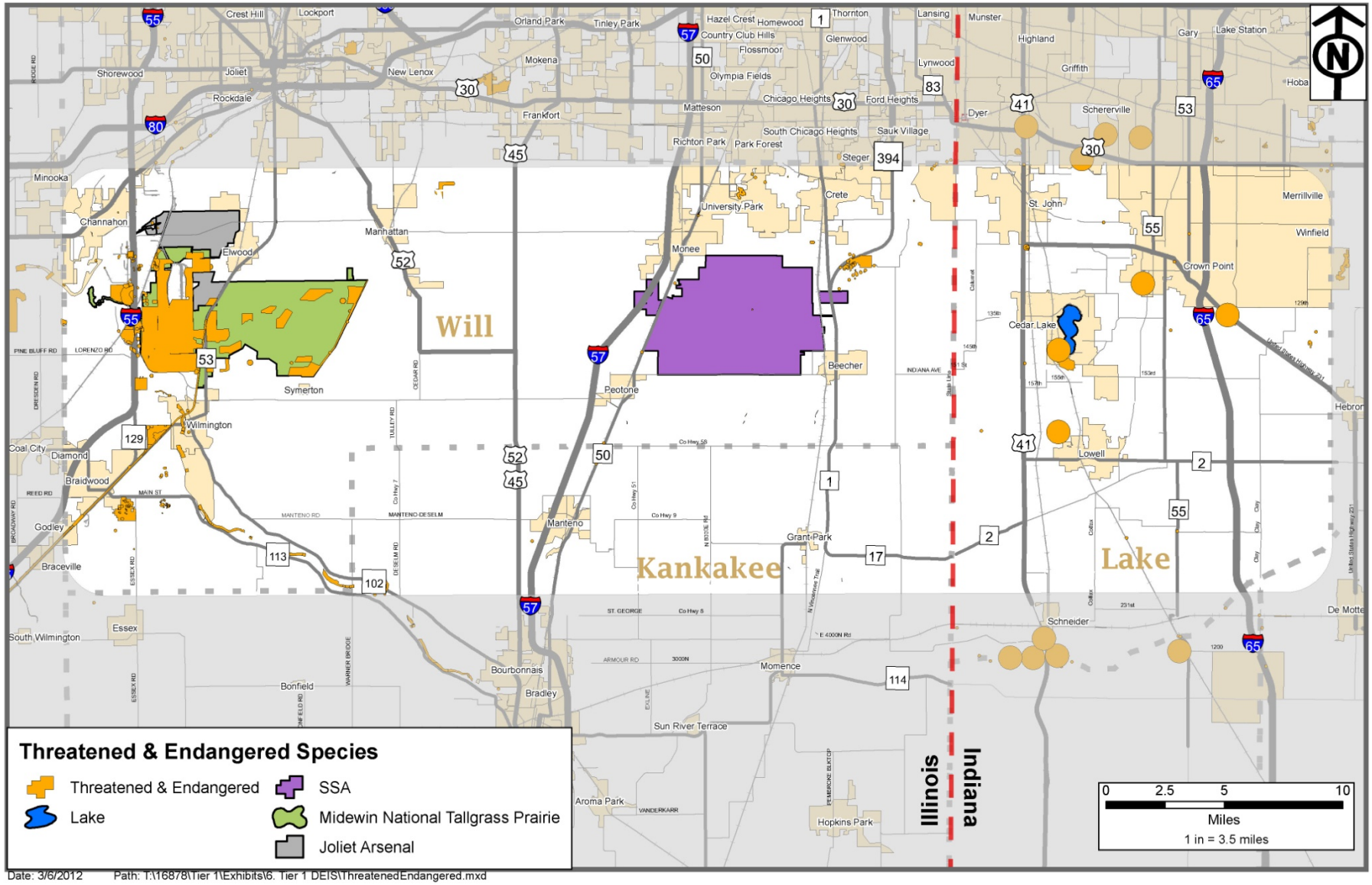
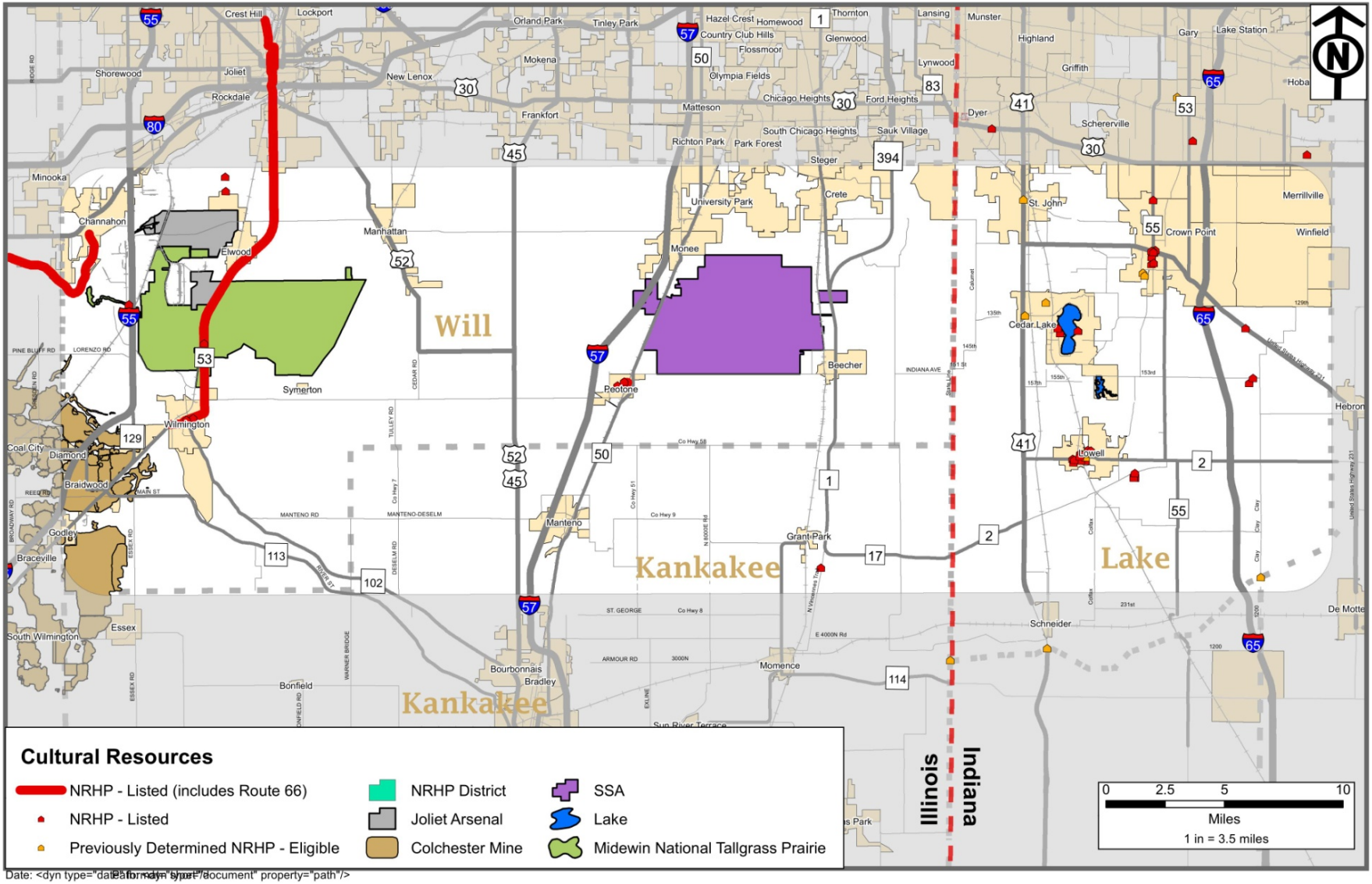


Figure 2-8. Cultural Resources



In the west near I-55 there are several areas of north-south constraints based on the built and natural environment that restrict the opportunities for connecting a new facility to I-55. These include the Colchester Formation mining zone, Braidwood Nuclear Generating Station, Midewin National Tallgrass Prairie, the Joliet Army Training Area, and the CenterPoint intermodal facility. In addition, this area includes high concentrations of wetlands and threatened and endangered species.

In regard to historic resources, the previously identified resources are concentrated predominately in more urban areas. Based on the available data, the higher concentrations of known historic resources in Indiana are found near the communities of Crown Point, Lowell, Cedar Lake and Lake Dalecarlia. In the western portion of the Study Area, a historic resource is the NRHP-listed Alternate Route 66 Wilmington to Joliet, also known as IL-53. This resource traverses the Study Area from Wilmington north to Joliet. These elements were taken into consideration during the alternatives development process.

2.3.3 Alternative Corridors Identification

Identification of the alternative corridors was initiated at the CPG meeting in September 2011, at which approximately 75 project stakeholders participated in an alternatives workshop to provide their input on the initial range of alternative corridors (and modes) to be considered to address the diverse transportation issues and problems identified for the Study Area. These stakeholders included community leaders, community planners and engineers, as well as representatives from a variety of local and regional agencies and organizations.

The workshop included a large-scale map of the project Study Area at each table that annotated all known built and natural environmental constraints on an aerial map background. The stakeholders were provided with basic Study Area 11 inch x 17 inch maps with representative constraint elements such as the municipal boundaries, planned improvements such as the SSA and intermodal facilities, and also natural and recreational areas to use as visual reference points when depicting their suggested alternative corridor on their worksheet map. Each table of stakeholders also had a study team facilitator that was available to answer questions about the mapped constraints, or geometric considerations based on the various modes included in the Improvements Toolbox. Attendees were given the option to select what transportation modes should be included in their suggested alternative corridor. From the 80+ alternative corridor worksheets provided, the following were the most frequent comments/suggestions received:

- 35 alternative worksheets identified tolling as a mechanism for operation;
- 21 alternative worksheets identified freight railroad as a mode;
- 19 alternative worksheets identified limited access highway facilities; and
- 11 alternative worksheets identified arterial improvements as a mode.

The resulting suggestions from the CPG meeting were digitized and then imported into GIS for screening. The suggested alternative corridors were grouped by location and mode type based on the Improvements Toolbox classification.

During the initial evaluation of alternative corridors, the study team applied the general geometric constraints applicable to each mode represented in the toolbox. The alternative corridors were also reviewed for major impacts that could be considered fatal flaws. These include severe impacts to built and established communities, alternative corridors located within the Colchester surface and sub surface mining areas near I-55 south of Strip Mine Road, impacts to natural resources such as the Midewin National Tallgrass Prairie, or impacts to planned improvements such as the SSA.

The alternative corridors were also reviewed for common themes or locations. During the initial digitization and conceptual placement of the suggested alternative corridors, the team reviewed each stakeholder suggestion to identify and group duplicates, and evaluate the overall trends of each group of alternative corridors. Once a grouping of alternative corridors was established that had common end points on I-55 and I-65, the next major differentiator was how the corridors navigated near the major municipal centers. Through examining the trends of the alternative corridors either north or south of each municipality, it was possible to further consolidate them into common alternative corridors that would maintain those primary directional elements of origin and destination and route around municipal locations.

Figure 2-9 is a compilation of the initial stakeholder suggestions with respect to multi-modal alternative corridors. Stakeholders were also provided an opportunity to suggest alternatives at the December 2011 Public Information Meetings held in Illinois and Indiana, and via the project website.

During this initial compilation, these alternative corridors were further adjusted in order to provide complete east-west alternative corridors connecting to I-55 and to I-65. Figure 2-10 shows the grouped alternative corridors as blue bands along with areas avoided due to the major Study Area constraints as discussed above.

The remaining suggested alternative corridors resulted in 10 unique "representative" alternative corridors. Those alternative corridors included eight on new alignment, and two arterial roadway improvement corridors, with sections on new alignment as required to provide a continuous east-west route. These 10 initial alternative corridors are shown in Figure 2-11 through Figure 2-20. The 10 initial alternative corridors could then be examined more closely for potential impacts to man-made or natural environmental assets within the 2,000 foot corridor buffers and the 400 foot working alignment, as discussed in Section 2.4.3.1.

These 10 initial alternative corridors were advanced for a comparative analysis as part of an initial round evaluation (refer to Section 2.5) to determine if any of the individual transportation modes or alternative corridors should be dismissed based on comparatively poor overall travel performance, or based on having disproportionately high and unavoidable socioeconomic and environmental impacts.

Figure 2-9. Initial Stakeholder Alternative Corridor Suggestions

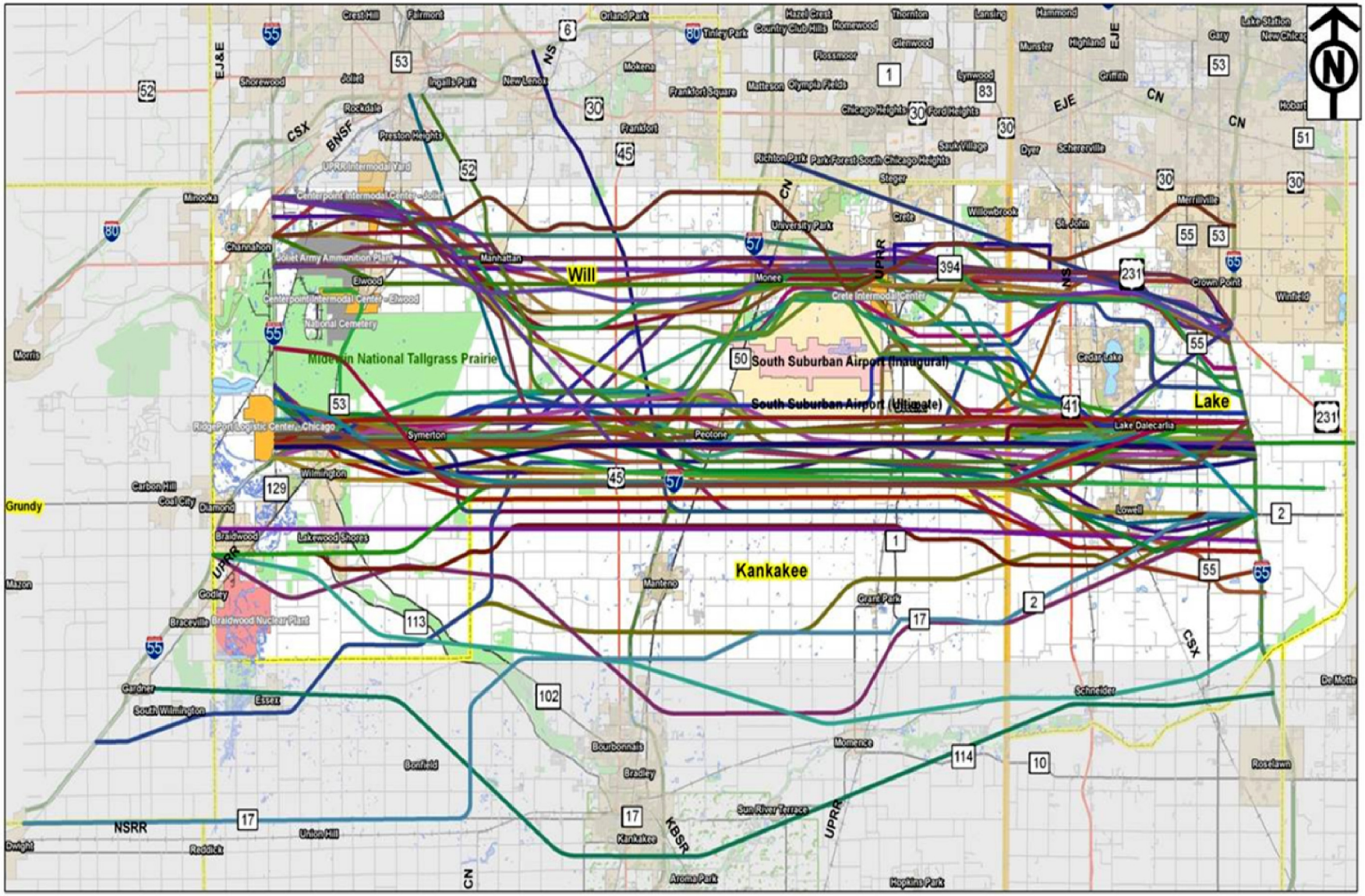


Figure 2-10. Grouped Alternative Corridors

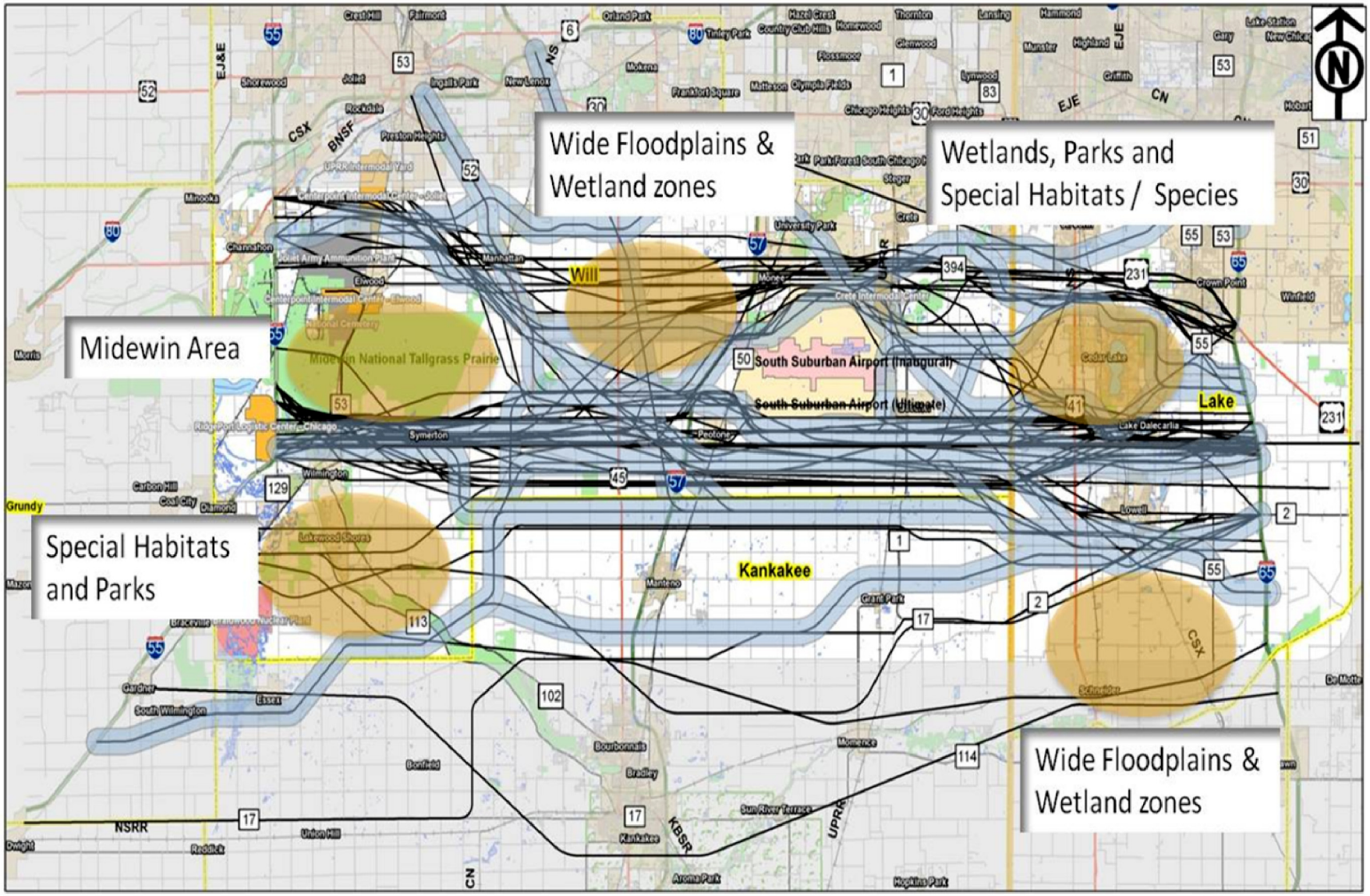


Figure 2-11. Initial Representative Alternative Corridors

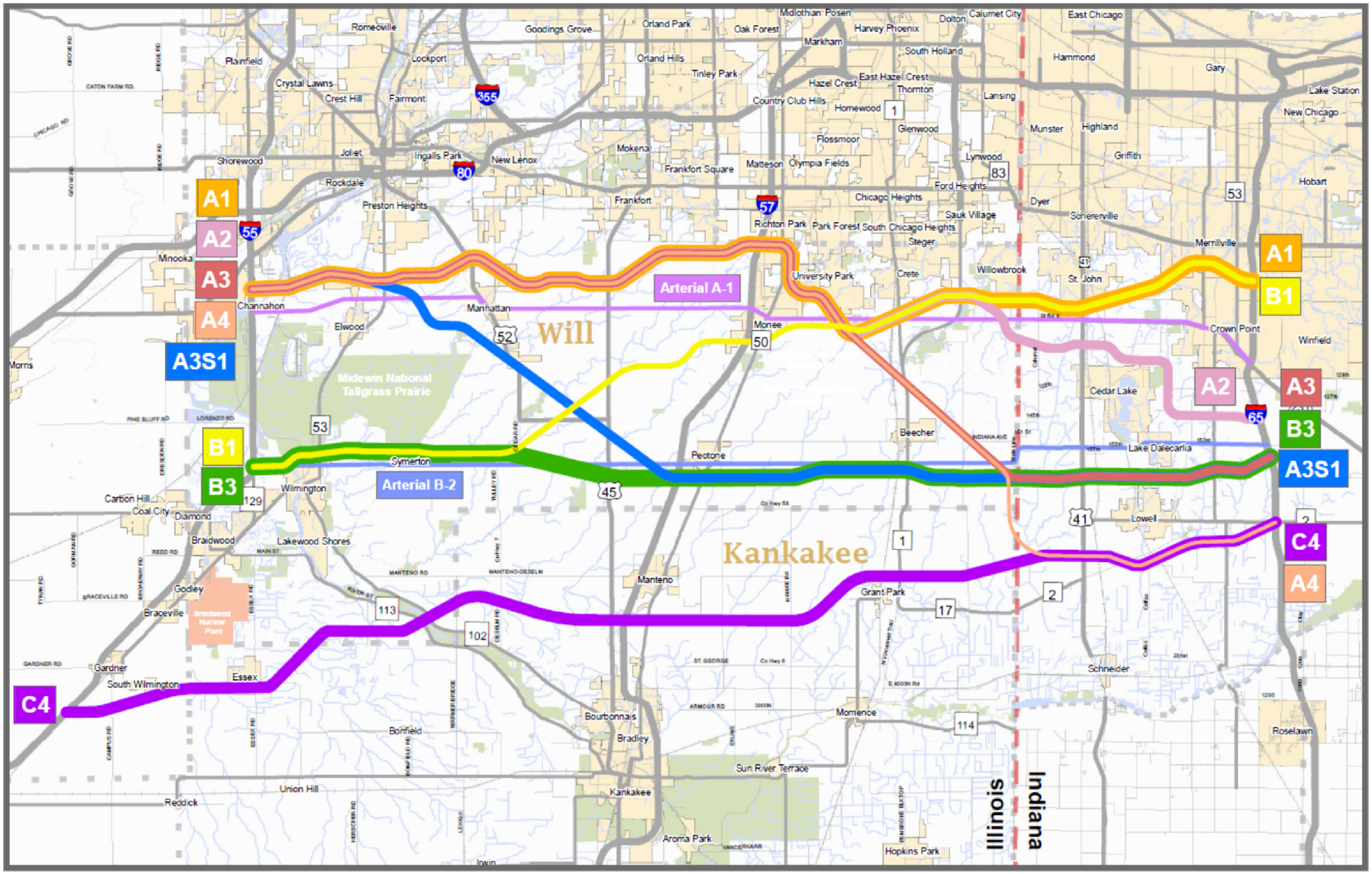


Figure 2-12. Alternative Corridor A1

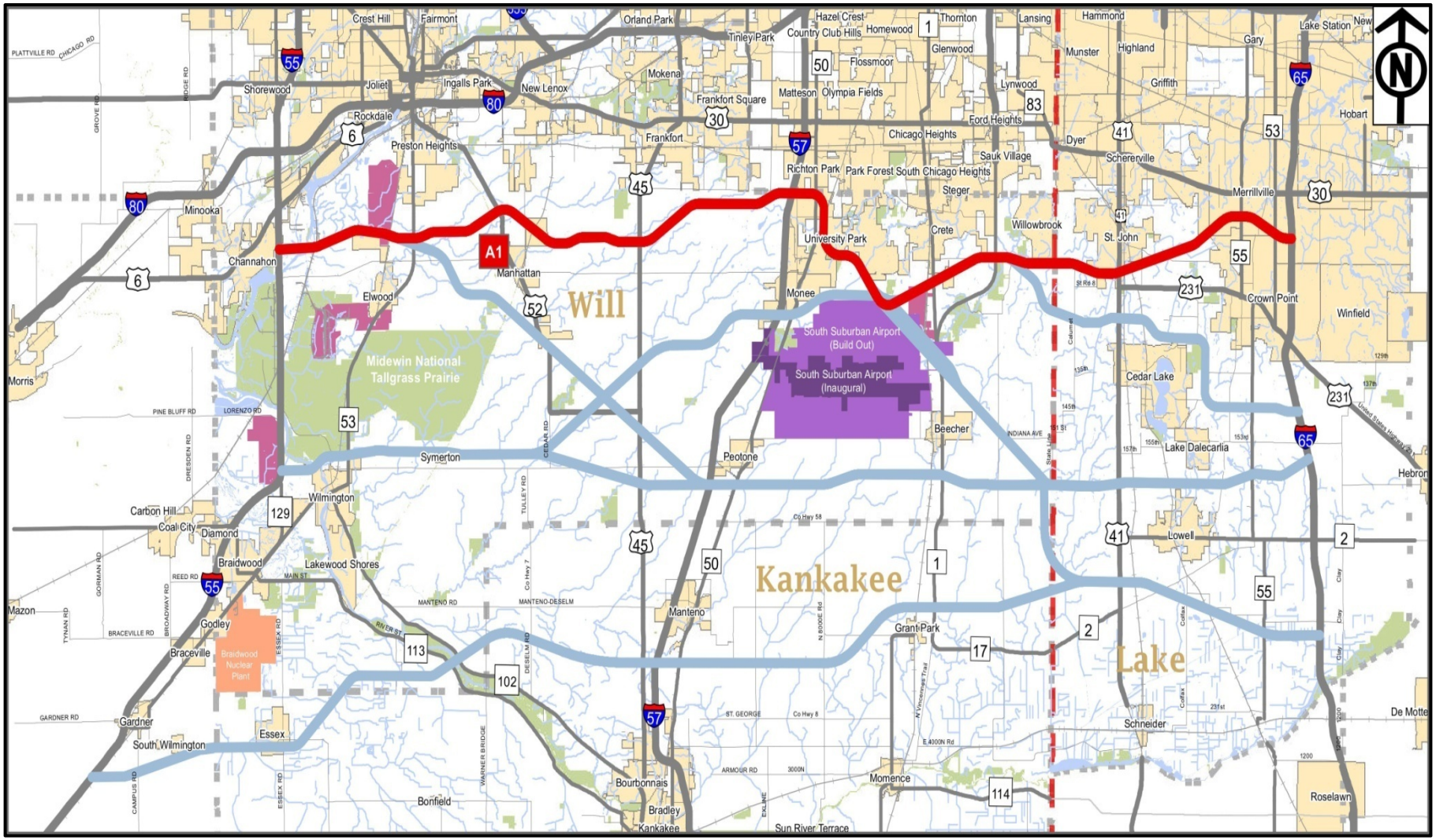


Figure 2-13. Alternative Corridor A2

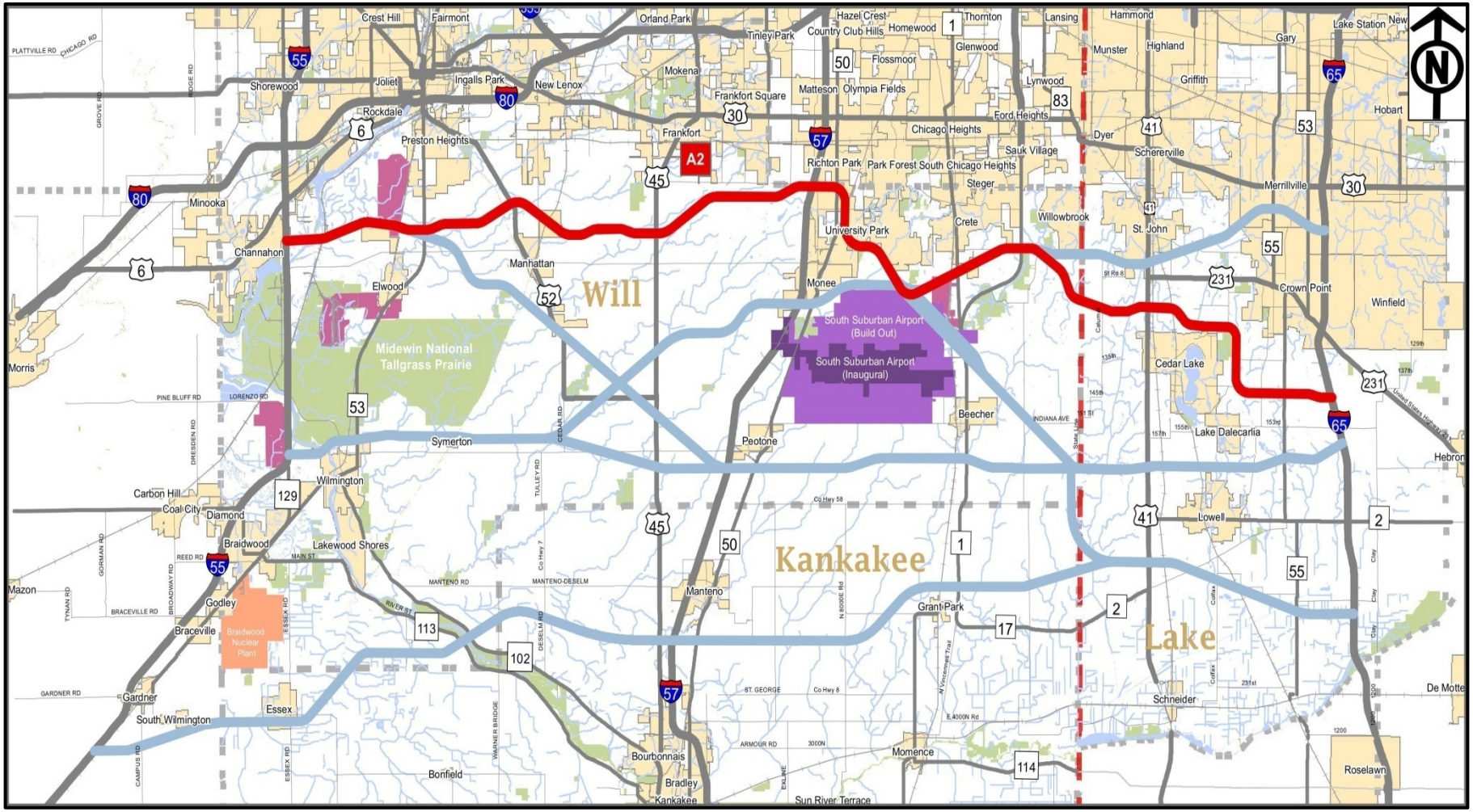


Figure 2-14. Alternative Corridor A3

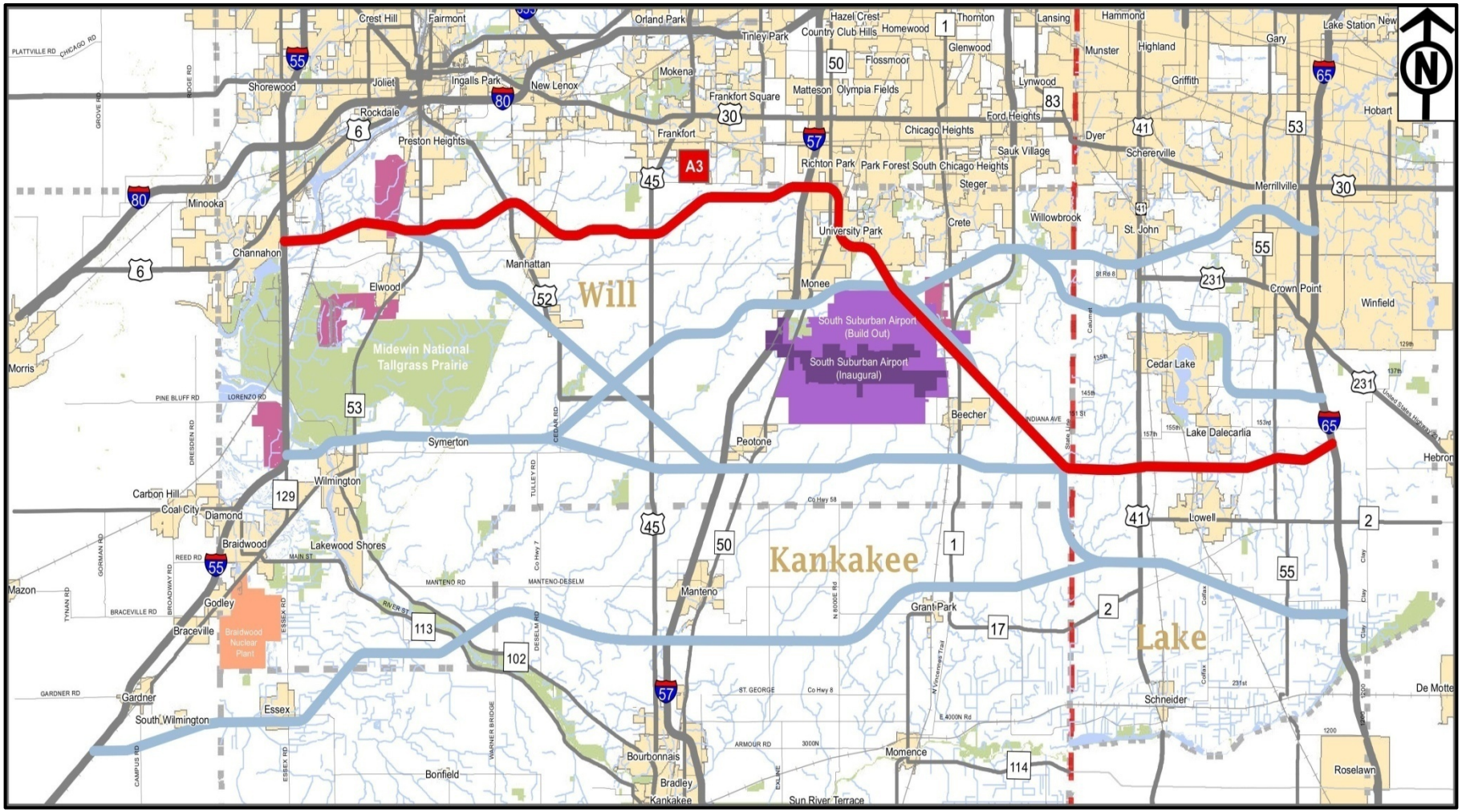


Figure 2-15. Alternative Corridor A4

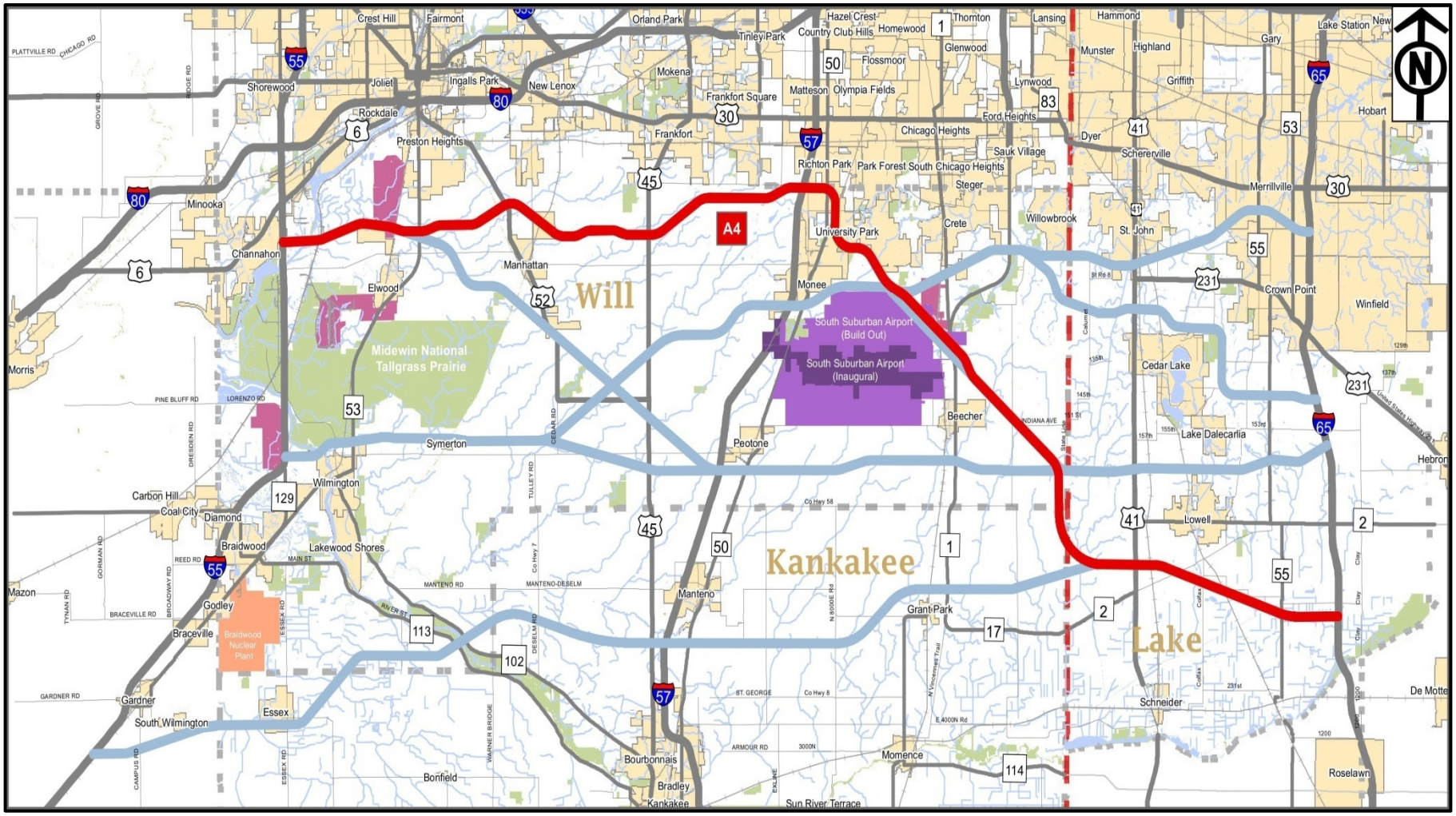


Figure 2-16. Alternative Corridor A3S2

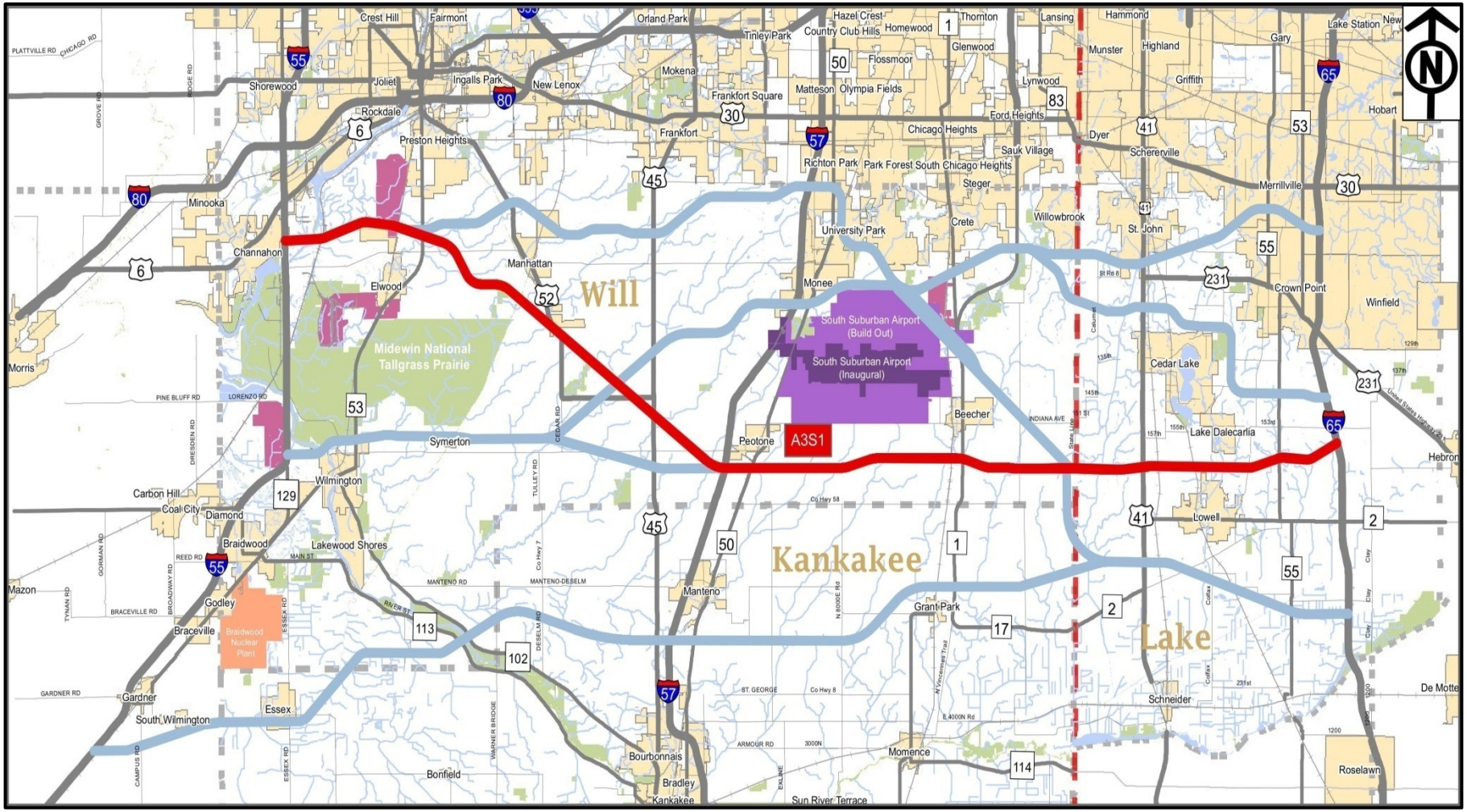


Figure 2-17. Alternative Corridor B1

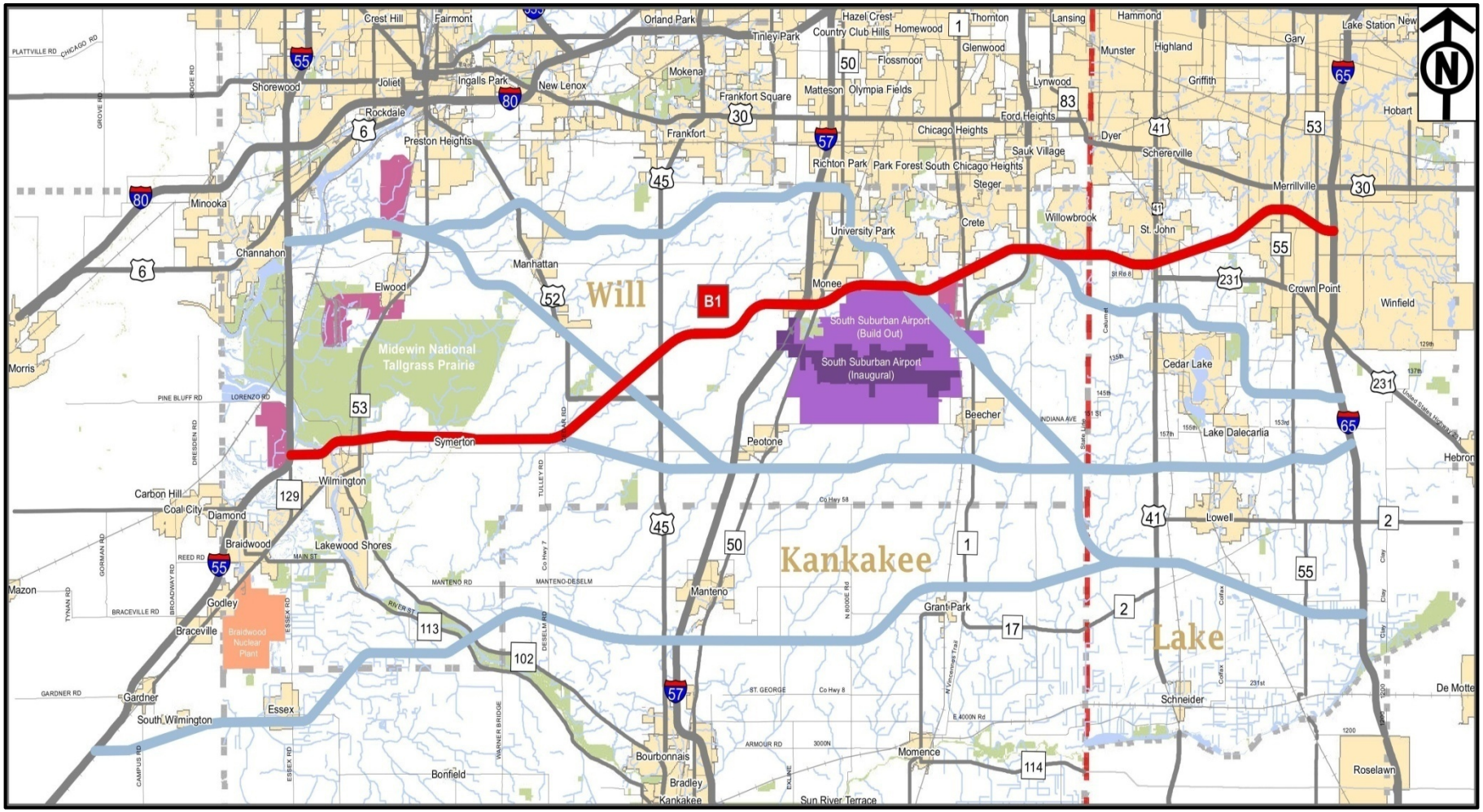


Figure 2-18. Alternative Corridor B3

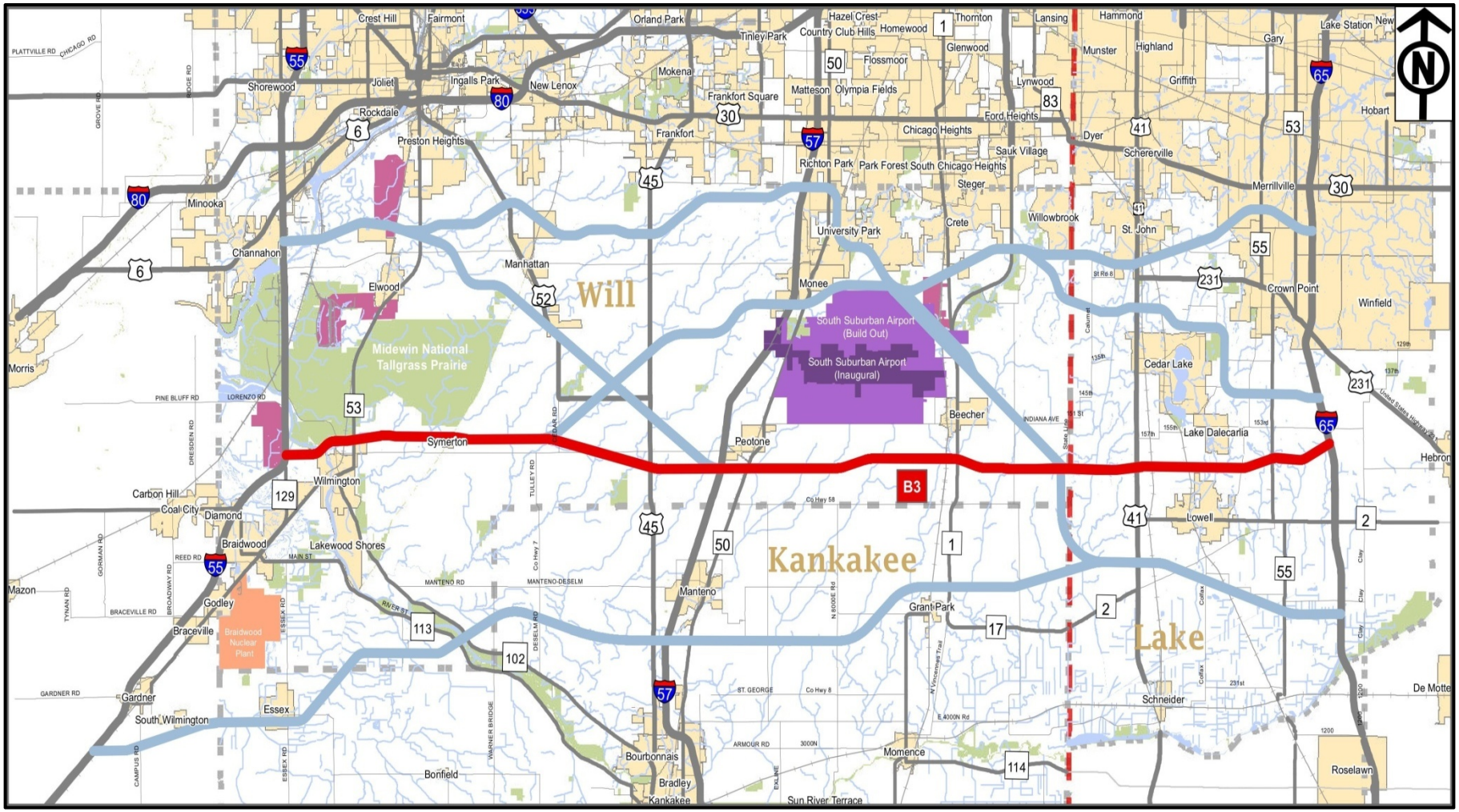


Figure 2-19. Alternative Corridor C4

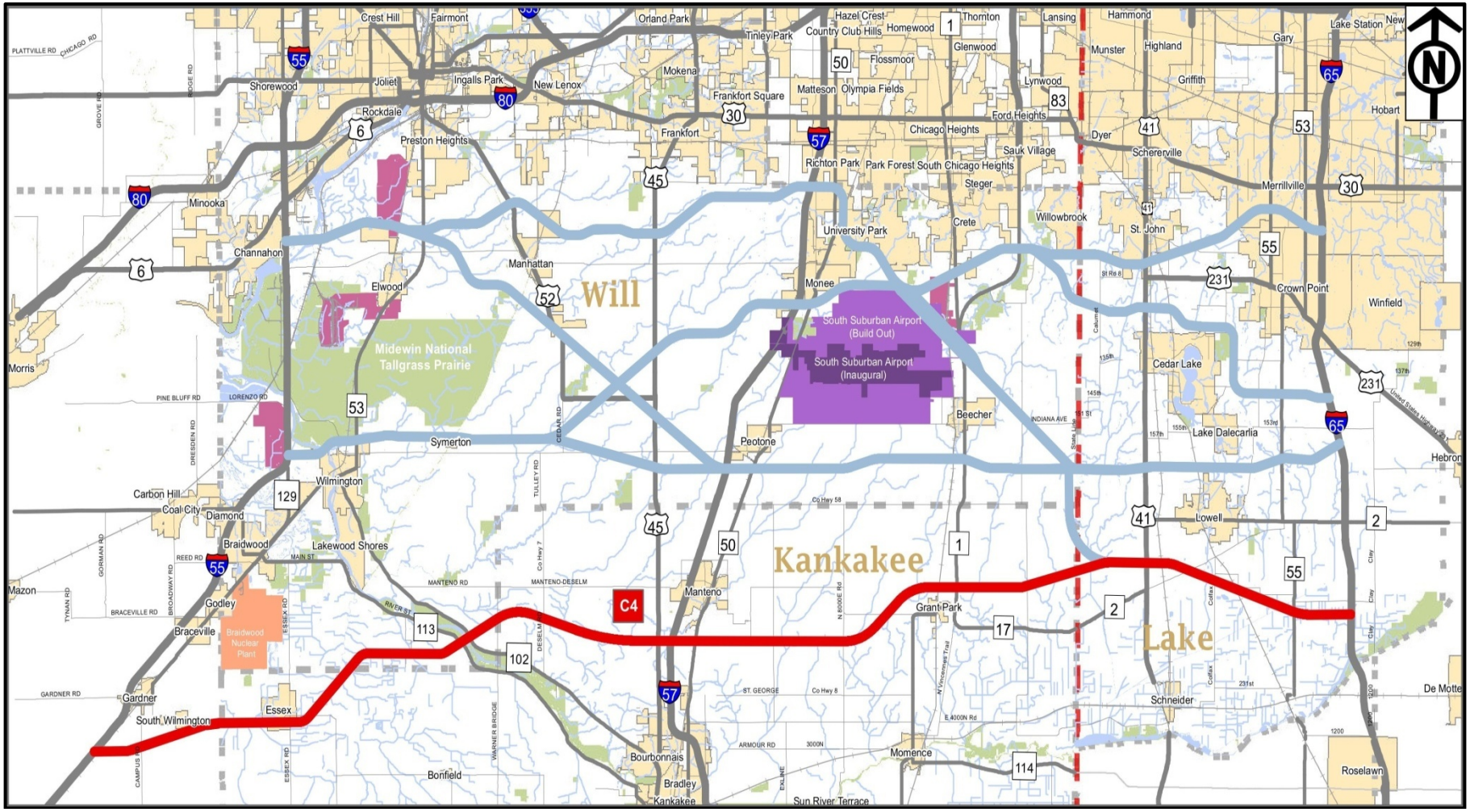
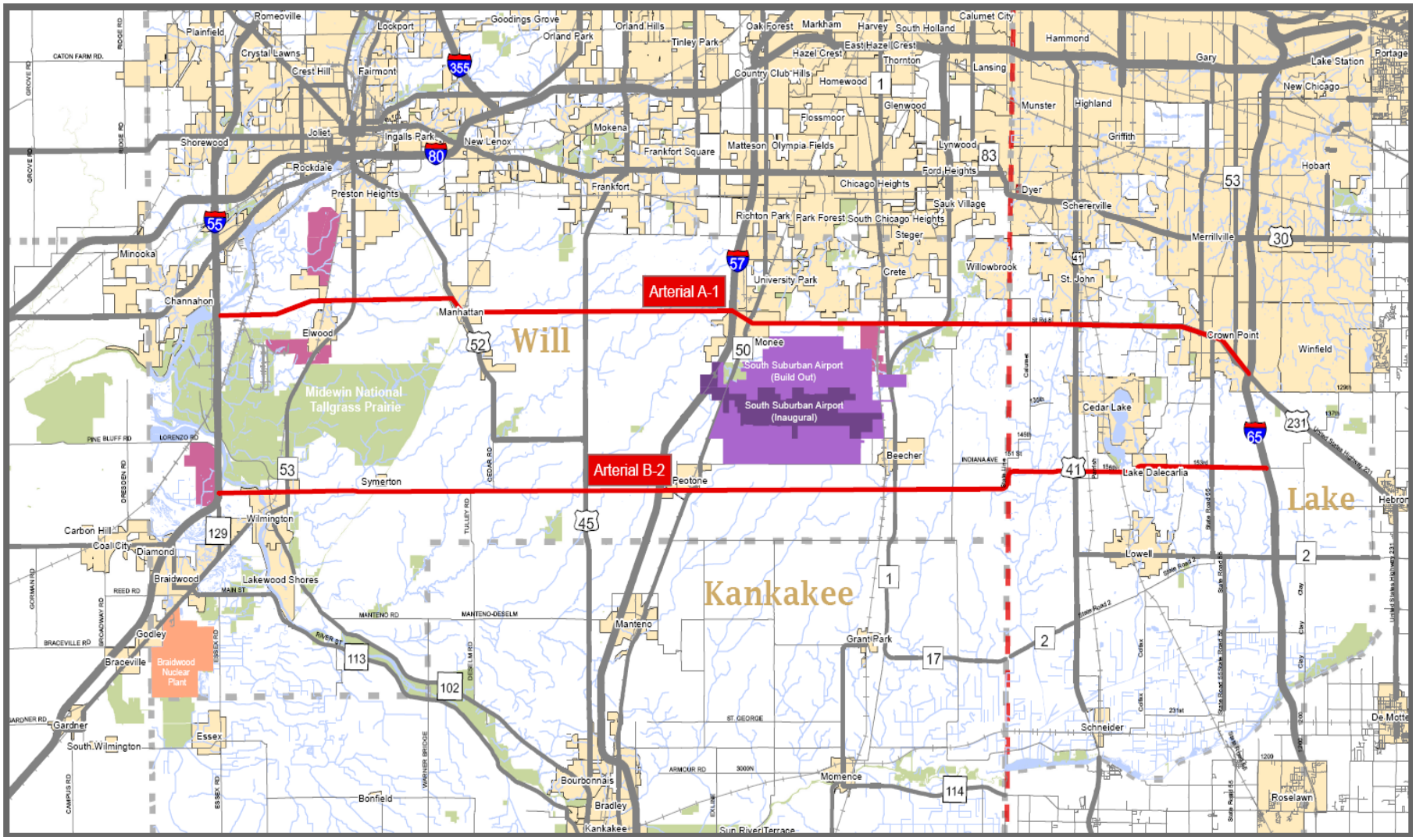


Figure 2-20. Arterial Alternative Corridors A-1 and B-2

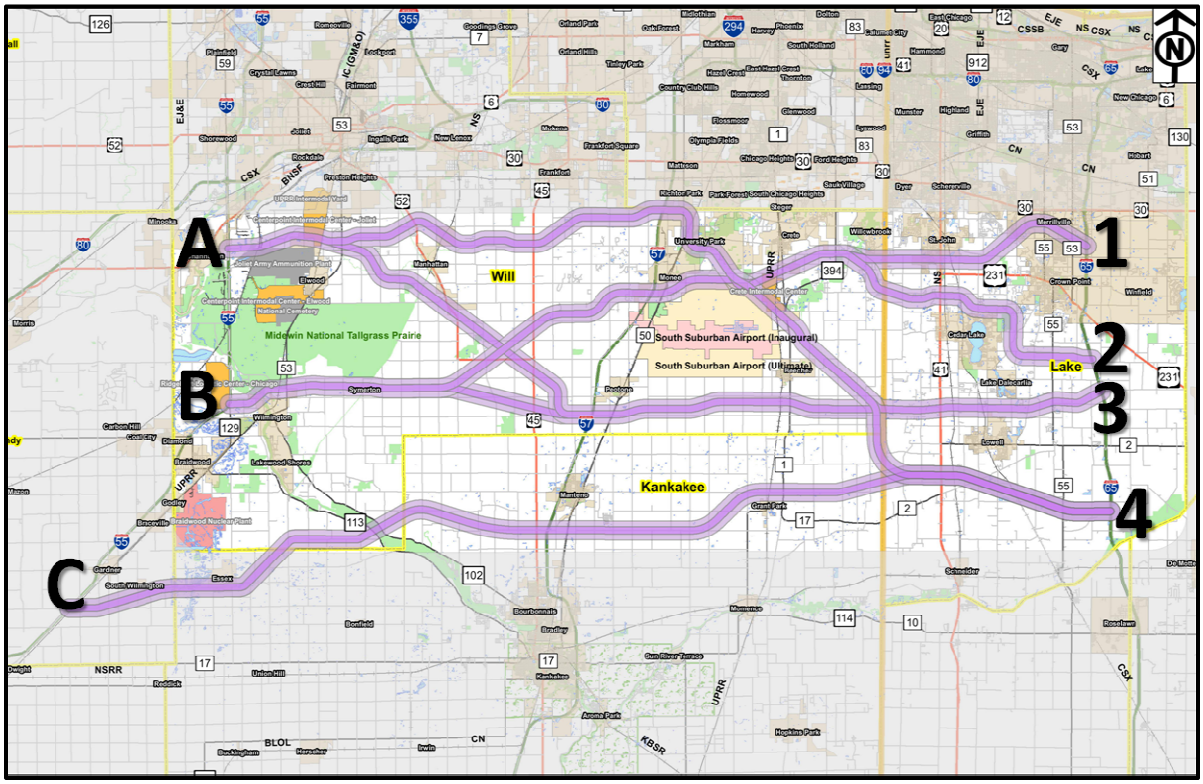


As part of a second round evaluation, remaining alternative corridors were discussed with project stakeholders and evaluated for potential refinements to avoid or minimize impacts, with a more detailed comparative evaluation of overall socioeconomic and environmental impacts performed. In addition, the potential for multi-purpose corridor use was considered at the end of the second round evaluation. While multi-purpose use is not part of the Purpose and Need for the project, it was included in this analysis for informational purposes in response to comments from resource agencies.

2.3.3.1 Corridor Naming Convention

The corridor naming convention can be seen in Figure 2-21, which is based on the general location where the proposed corridors intersect I-55 and I-65 respectively. For I-55, the intersection points are from north to south, with an "A", "B", or "C". For I-65, the intersection points are also from north to south, with a "1", "2", "3", or "4". Thus, alternative corridor "A1" would extend from location "A" on I-55 to location "1" on I-65. For variations within a corridor, a designation of "n" for north, or "s" for south, with a variation number was used. The limited access alternative corridors were named without a hyphen (i.e.; "A1") and the arterial roadway alternative corridors were named with a hyphen (i.e.; "A-1").

Figure 2-21. Corridor Naming Convention



2.3.4 Corridor Width

As noted above, the Tier One DEIS alternative corridors were developed to define a broad environmental footprint width that would accommodate the likely improvements needed to address the Purpose and Need. As shown in Figure 2-22, the alternative corridors were developed based on a nominal width of 2,000 feet for limited access alternative corridors and 400 feet for arterial alternative corridors. The overall limited access and arterial corridor widths are consistent with practice on previous Tier One DEIS studies.

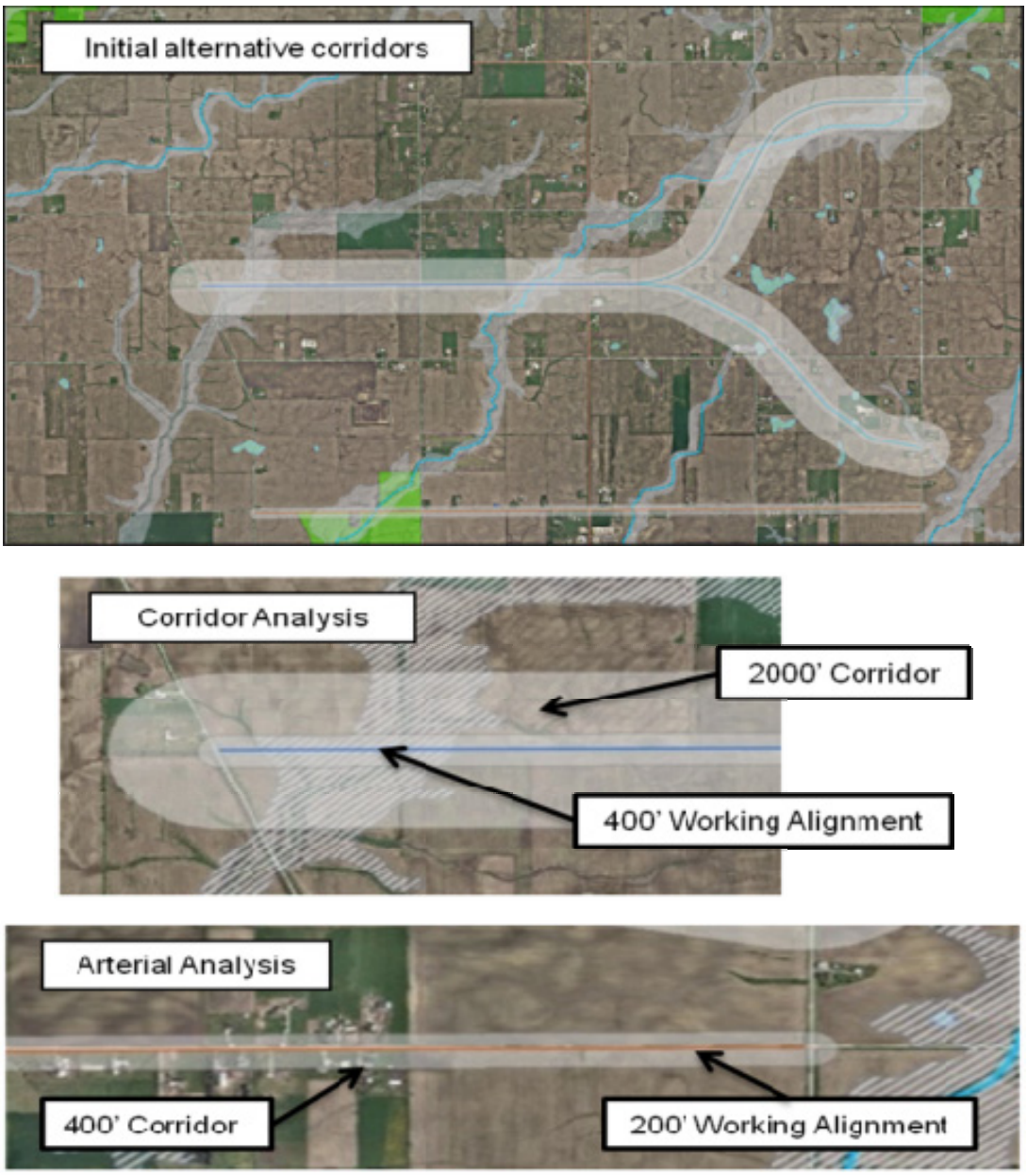
An inventory of socioeconomic and environmental resources within each alternative corridor was made and included as part of the GIS database for the project.

2.3.4.1 Working Alignments

For new limited access alternative corridors, which can include multiple transportation modes, each of the identified corridors contained a single "working alignment" within the center of the 2,000 foot overall corridor width that was evaluated for socioeconomic and environmental impacts. A 400 foot working alignment width was assumed, which is the approximate width that would be considered for a new limited access transportation corridor to provide sufficient space for wide medians for opposing directions and wider outside clear zones due to higher speed travel. This width would also provide for adjacent open areas for roadway drainage, storm water detention, compensatory storage, and other environmental mitigation features as required. Additional space for roadway embankment is also typically required for the grade separations associated with the corridor being access controlled. For improved arterial alternative corridors, which are less likely to carry multiple transportation modes due to the adjacent development and associated direct access requirements, each of the identified arterial alternative corridors was developed based on a 400 foot overall arterial corridor width. Evaluations of socioeconomic and environmental impacts were based on an assumed 200 foot working alignment width in the center of the arterial alternative corridor, which is the approximate width that would be considered for a multi-lane (i.e.; two lanes in each direction) high type principal arterial corridor with center medians for turning vehicles. The 200 foot working alignment width is sufficient due to the typical use of narrower medians separating opposing directions of travel (i.e.; less than typically provided for limited access facilities), the narrower clear zone requirements due to relatively lower travel speeds, and the reduced need for wide embankments with access generally being at-grade.

Figure 2-22 provides an example showing how the working alignments are defined within the center of the alternative corridors. Potential impacts to socioeconomic and environmental resources have been quantified based on the working alignment widths within each alternative corridor for comparative analysis as part of the Tier One DEIS. This offers an indication of the probability of impacts within each corridor as studies advance. The alternative corridors and working alignments were developed using information collected for the project GIS database as a guide to avoid or minimize the potential for impacts to wetlands, streams, farmland, natural areas, parks, residential areas, commercial areas, and other environmental features.

Figure 2-22. Corridor Widths



Tier Two NEPA studies will include environmental field surveys for the selected corridor(s) carried forward from the Tier One EIS, and will also include more detailed design engineering to define elements of the proposed improvement plan including interchanges, structures, drainage requirements, etc., and to evaluate environmental impacts based on the actual proposed right-of-way needed for the project. As part of this more detailed design engineering during the Tier Two NEPA studies, environmental mitigation concepts and measures identified in the Tier One EIS will be refined and detailed.

As part of the more detailed engineering in the Tier Two NEPA studies, multiple working alignments will be evaluated within the Tier One EIS selected corridor(s) in order to avoid or minimize impacts and to define the actual required right-of-way, which is anticipated to vary from the 400 foot wide (limited access) or 200 foot wide (arterial) working alignment widths in the Tier One EIS studies. It is possible that refinements to the working alignment outside of the selected alternative corridor(s) may be required as part of the Tier Two NEPA studies in order to avoid significant impacts that become apparent as part of the Tier Two environmental field surveys. The actual right-of-way width would be dependent on several factors, including number and type of transportation components included, surrounding topography, drainage requirements, and environmental mitigation and avoidance.

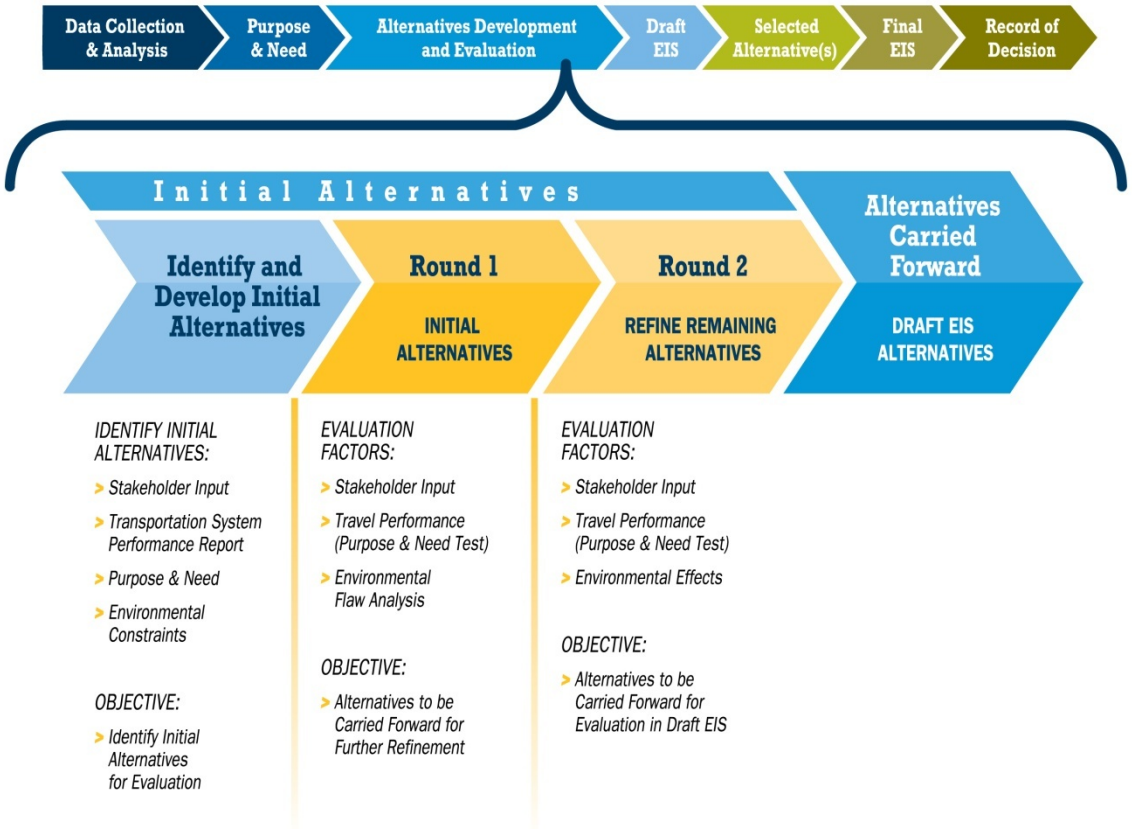
2.4 Alternatives Evaluation

The alternatives evaluation process was a two-step process that included an initial round evaluation and a second round evaluation based on technical analysis and stakeholder input to identify, refine, and evaluate alternative corridors.

2.4.1 Alternatives Evaluation Process

Figure 2-23 below shows the alternatives evaluation process within the timeline of the overall Tier One EIS studies.

Figure 2-23. Alternative Evaluation Process



The initial round evaluation included an evaluation of individual transportation modes to meet the established project Purpose and Need, as well as a comparative analysis of the limited-access highway and arterial alternative corridors. The comparative analysis included an assessment of travel performance as well as a preliminary assessment of socio-economic and environmental impacts. The travel performance analysis was based on the results of regional travel model testing of each alternative corridor, and the 2040 No-Action Alternative. A comparison of each alternative corridor to the No-Action Alternative was made, as well as a relative comparison of travel performance between the alternative corridors. An evaluation matrix was developed to summarize the travel performance analysis. This evaluation matrix is described below, and includes travel performance evaluation criteria that are related to the Purpose and Need.

The primary objective of the initial round evaluation was to determine if any of the individual transportation modes should be dismissed based on not meeting the established project Purpose and Need, and if any alternative corridors should be dismissed based on having disproportionately poor overall travel performance in comparison to the No-Action Alternative and the other alternative corridors.

The initial round evaluation also included an initial comparative evaluation of socioeconomic and environmental impacts to determine if any of the alternative corridors should be dismissed based on having disproportionately high and unavoidable impacts. The environmental and socioeconomic impact analysis compared a summary of the overall socioeconomic and environmental impacts of each alternative corridor. This impact evaluation was based on a GIS analysis of the alternative corridors. An evaluation matrix was developed that provides a summary of the overall socioeconomic and environmental impact analysis. This evaluation matrix is described below, and includes a range of natural and built environmental impacts.

Alternative corridors carried forward into the second round were evaluated in greater detail with respect to socioeconomic and environmental impacts and stakeholder input, and based on potential refinements to avoid or minimize impacts. Alternative corridor refinements were considered to further minimize socioeconomic and environmental impacts to the extent practical and feasible.

Stakeholder input played a key role in the alternative corridors refinement process, as stakeholders provided valuable input on recent developments, many of which were not reflected in the publicly available databases, as well as proposed development plans. Based on the refined location of the alternative corridors, a detailed second round comparative impact evaluation was performed based on the associated working alignments.

In addition, a qualitative assessment with respect to accommodating potential future multi-purpose uses was considered at the end of the second round evaluation. The multi-purpose uses could include different modes or utilities, such as non-motorized trails, greenways, fixed guide-way transit facilities, freight railroad facilities, and electric, gas, oil, and fiber optic transmission facilities. In most cases, these multi-purpose uses would likely require additional right-of-way beyond what would be required for a roadway

facility alone. While multi-purpose use is not part of the Purpose and Need for the project, it was included in this analysis for informational purposes in response to comments from resource agencies.

Throughout the alternative corridors evaluation process, stakeholder input gathered from CPG meetings, public meetings, individual stakeholder meetings, the project website, and written comments was considered. This stakeholder coordination is documented in Section 4.0.

2.4.2 Initial Round Alternatives Evaluation

An initial Purpose and Need evaluation was first performed for modal alternatives to identify which would meet the project Purpose and Need as stand-alone modal alternatives. The initial evaluation then compared the travel performance and environmental and socioeconomic impacts of the alternative corridors. The objective of the initial evaluation for the alternative corridors was to identify those with comparatively better performance and lesser impacts to be carried forward for more detailed evaluation.

2.4.2.1 Purpose and Need Modal Evaluation

An initial evaluation of the various transportation modes identified by project stakeholders was performed. The ability of various transportation modes to meet the project Purpose and Need as stand-alone alternatives was performed and is discussed in the project TSPR. Based on this evaluation, the following modal alternatives were determined to not have the ability to meet the project Purpose and Need as stand-alone modal alternatives.

- Rail Freight: The National Rail Freight Infrastructure Capacity and Investment Study (September 2007) was prepared for the Association of American Railroads, and led by a steering committee of Burlington Northern Santa Fe Railway (BNSF), CSX Transportation, Norfolk Southern (NS), Union Pacific Railroad (UPRR), and assisted by Canadian National (CN), Canadian Pacific, and Kansas City Southern railroads. The study assessed the long term capacity expansion and investment needs of the US freight railroads through 2035. Evidence of this investment is apparent throughout the Chicago region as well as neighboring states. Rail freight capacity is being improved through the Chicago Region Environmental and Transportation Efficiency (CREATE) program and other investments by the privately owned freight railroads in conjunction with IDOT and the Chicago Department of Transportation. All of those planned improvements in freight rail capacity have been included in the No-Action scenario; the needs identified in the Purpose and Need chapter exist even with the implementation of those improvements to existing freight rail infrastructure. In addition, based on discussions with UPRR, NS, and CN railroads, as well as correspondence with officials of the Illinois Railroad Association, which represents all Class I and major regional and short line railroads in Illinois, it is clear that the freight railroads (which own and maintain the rail lines) do not see a need for a new east-west freight railroad corridor in the Study Area, and therefore are not willing to invest in building one. Without freight railroad funding and support, it is not feasible to

construct a new east-west freight railroad facility through the Study Area. Therefore, expanding rail freight by improving existing systems and/or constructing a new railroad corridor will not meet the Purpose and Need for this project.

- Transit: Although there is potential for expanded local fixed-route bus service in areas of growth, with several studies evaluating radial commuter rail expansion, there is not enough population and employment density for existing or 2040 conditions to support east-west fixed guideway (rail or exclusive lanes) transit service in the Study Area.
- Intercity Bus and Rail: There are existing services that pass through the Study Area, with the potential for expanded high speed rail services. However, there are no known plans for intercity rail/bus to add stops in the Study Area within the 2040 timeframe.

Non-motorized transportation includes pedestrian/bicycle facilities and multi-use trails. There are some existing facilities within the Study Area, with many new facilities planned. Additional opportunities would primarily serve recreational needs but not commuting needs due to low densities within most of the Study Area.

Air transportation predominantly includes Midway and Gary/Chicago airports, both located north of the Study Area. These are the closest existing commercial airport facilities with regularly scheduled passenger service. The SSA is proposed as an "inaugural" airport for 2040 planning purposes. SSA is anticipated to generate minimum surface traffic within the context of regional transportation needs.

These transportation modes, along with the other potential transportation modes included in the project toolbox as discussed in Section 2.4.1, as well as general multi-purpose corridor use, will be considered as potential location specific complementary components of the selected alternative corridor(s), but not as stand-alone modal alternatives. Similarly, lower cost, TSM, travel demand management, ITS, and other related congestion management strategies will be considered as potential location specific complementary components of the selected corridor(s), but not as stand-alone modal alternatives.

On this basis, these multi-modal transportation components are not evaluated in further detail in the Tier One DEIS, but will be considered in the Tier Two NEPA studies with detailed development of the selected corridor(s). The ability for each alternative corridor to accommodate these potential future multi-purpose uses varies based on natural environmental and community/land-use constraints.

2.4.2.2 Initial Travel Performance Evaluation

This evaluation involved an analysis of the travel performance of the initial alternative corridors. Given the uncertainty at this stage whether the implementation of any of these initial alternative corridors will involve tolling, the limited access alternative corridors (non-arterial alternatives) were evaluated as both non-tolled and tolled facilities for travel performance. While some form of public-private agreement is identified as one potential financing option for the project, a financial plan is not being

prepared as part of the Tier One DEIS, and therefore, the potential use of tolling, and the extent thereof, as part of the overall project financing is unknown.

The travel performance results for each of the evaluation criteria for each initial alternative corridor were estimated using the regional travel demand forecasting model.[2] The results are presented in Table 2-2 and Table 2-3 for the forecast year 2040 assuming a No-Action socioeconomic forecast[3] for relative comparison to the 2040 No-Action (Baseline) Alternative, which includes the existing plus committed projects within the Study Area, and financially constrained major projects contained in the adopted 2040 plans for CMAP, NIRPC, and KATS, and the other committed projects by IDOT and INDOT as documented in the TSPR.

The two best performing alternative corridors per criterion are shaded green and the two worst performing alternative corridors per criterion are shaded orange. However, for some criteria there are more than two alternative corridors with the two best or worst results due to having identical values, which results in more than two alternatives being shaded. For criteria with VHT measures, a negative value demonstrates an improvement over the No-Action Alternative. For criteria with job accessibility and traffic volumes on the corridor, a positive value demonstrates an improvement over the No-Action Alternative.

The travel performance evaluation matrices included evaluation criteria related to the project's Purpose and Need. The evaluation measures are shown in *italics* below:

- Improve Regional Mobility
  - Address projected growth in regional east-west travel: *Region east-west daily vehicle hours of travel (VHT) and South Sub-Region VHT*. Region east-west daily VHT measures the total time spent traveling by all vehicles on all roads in the east-west direction within the region, and South Sub-Region daily east-west VHT measures the total time spent traveling by all vehicles on all roads in the east-west direction in the South Sub-Region excluding the Study Area, as shown in Figure 1-1. The performance of each alternative corridor was measured against the 2040 No-Action Alternative baseline to determine the cumulative transportation benefit for the Region and the South Sub-Region. The 18 county travel demand modeling region captures this measurement of Region, South Sub-Region and the Study Area. A decrease in east-west VHT for the alternative corridors as compared to the No-Action Alternative shows that east-west travel is improved by the alternative corridor, resulting in faster speeds and lower travel times.

[2] Illiana Corridor Study Travel Demand Model Documentation, April 2012. Refer to Appendix D.
[3] Illiana Corridor Study Historic and Forecasted Growth of Employment and Population in the Extended Region of Chicago, February 2012. Refer to Appendix E.

Table 2-2. Travel Performance Evaluation Matrix (Non Tolled) [1]

Travel Performance Measure	2040 No Build	ALTERNATIVE CORRIDOR									
		A1	A2	A3	A3S1	A4	B1	B3	C4	Arterial A-1	Arterial B-2
Improve Regional Mobility											
Address Projected Growth in Regional E-W Travel											
Region East-West Vehicle Hours of Travel	3,747,000	-17,000	-14,000	-13,000	-15,000	-9,000	-12,000	-12,000	-3,000	0	0
South Sub-Region East-West Vehicle Hours of Travel	890,000	-37,000	-32,000	-30,000	-24,000	-27,000	-27,000	-21,000	-11,000	0	0
Reduce Regional Travel Delay / Improve Regional Travel Time											
Region Vehicle Hours of Travel	6,899,000	-16,000	-15,000	-17,000	-17,000	-18,000	-18,000	-14,000	-8,000	1,000	1,000
South Sub-Region Vehicle Hours of Travel	1,579,000	-36,000	-28,000	-26,000	-20,000	-23,000	-26,000	-19,000	-11,000	1,000	1,000
Improve Access to Jobs											
Number of Jobs Accessible within 30 Minutes	1,792,000	30,000	24,000	21,000	21,000	20,000	26,000	18,000	10,000	1,000	1,000
Alleviate Local System Congestion and Improve Local System Mobility											
Address Projected Growth in Local Traffic and Reduce Local Travel Delan / Improve Local Travel Times											
Study Area Congested VMT on Arterials	2,039,000	-209,000	-150,000	-224,000	-138,000	-261,000	-200,000	-106,000	-82,000	-82,000	-64,000
Study Area Vehicle Hours of Travel on Arterials	255,200	-15,200	-13,900	-13,200	-13,100	-14,000	-14,500	-9,100	-5,800	0	-600
Average Daily Traffic All Vehicles on Build Alt.	-	48,000	41,000	41,000	36,000	39,000	40,000	35,000	20,000	20,000	8,000
Average Daily Traffic Trucks on Build Alt.	-	24,000	21,000	21,000	21,000	18,000	18,000	20,000	10,000	5,000	2,000
Address Lack of Cont. Higher Func. Class E-W Routes											
New Lane Miles of Interstate	-	201	212	214	210	223	193	187	231	0	0
New Lane Miles of Other Principal Arterials	-	0	0	0	0	0	0	0	0	102	106
Provide for Efficient Movement of Freight											
Provide More Efficient Freight Movement											
Region Truck Hours of Travel	859,000	-4,900	-5,300	-5,800	-6,500	-6,100	-5,300	-5,400	-2,800	200	200
South Sub-Region Truck Hours of Travel	254,500	-18,600	-14,500	-13,900	-13,500	-10,800	-11,500	-11,800	-4,700	600	600

[1] The length of New Lane Miles of Limited-Access Highway and Other Principal Arterials does not provide a direct measure of travel benefit and is, therefore, not shaded.

Highest Travel Benefit: **Lowest Travel Benefit:**

Table 2-3. Travel Performance Evaluation Matrix (Tolled) [1, 2]

Travel Performance Measure	2040 No Build	Toll Traffic	ALTERNATIVE CORRIDOR									
			A1	A2	A3	A3S1	A4	B1	B3	C4	Arterial A-1	Arterial B-2
Improve Regional Mobility												
Address Projected Growth in Regional E-W Travel												
Region East-West Vehicle Hours of Travel	3,747,000	25% retained	-6,000	-4,900	-4,600	-5,300	-3,200	-4,200	-4,200	-1,100	0	0
		75% retained	-14,500	-11,900	-11,100	-12,800	-7,700	-10,200	-10,200	-2,600		
South Sub-Region East-West Vehicle Hours of T	890,000	25% retained	-13,000	-11,600	-10,500	-8,400	-9,500	-9,500	-7,400	-3,900	0	0
		75% retained	-31,500	-28,100	-25,500	-20,400	-23,000	-23,000	-17,900	-9,400		
Reduce Regional Travel Delay / Improve Regional Travel Time												
Region Vehicle Hours of Travel	6,899,000	25% retained	-6,400	-6,000	-6,800	-6,800	-7,200	-7,200	-5,600	-3,200	1,000	1,000
		75% retained	-14,400	-13,500	-15,300	-15,300	-16,200	-16,200	-12,600	-7,200		
Sosuth Sub-Region Vehicle Hours of Travel	1,579,000	25% retained	-14,400	-11,200	-10,400	-8,000	-9,200	-10,400	-7,600	-4,400	1,000	1,000
		75% retained	-32,400	-25,200	-23,400	-18,000	-20,700	-23,400	-17,100	-9,900		
Improve Access to Jobs												
Number of Jobs Accessible within 30 Minutes	1,792,000		30,000	24,000	21,000	21,000	20,000	26,000	18,000	10,000	1,000	1,000
Alleviate Local System Congestion and Improve Local System Mobility												
Address Projected Growth in Local Traffic and Reduce Local Travel Delan / Improve Local Travel Times												
Study Area Congested VMT on Arterials	2,039,000	25% retained	-94,000	-68,000	-101,000	-62,000	-117,000	-90,000	-48,000	-37,000	-82,000	-64,000
		75% retained	-188,000	-135,000	-202,000	-124,000	-235,000	-180,000	-95,000	-74,000		
Study Area Vehicle Hours of Travel on Arterials	255,200	25% retained	-6,800	-6,300	-5,900	-5,900	-6,300	-6,500	-4,100	-2,600	0	-600
		75% retained	-13,700	-12,500	-11,900	-11,800	-12,600	-13,100	-8,200	-5,200		
Average Daily Traffic All Vehicles on Build Alt.	-	25% retained	12,000	10,300	10,300	9,000	9,800	10,000	8,800	5,000	20,000	8,000
		75% retained	36,000	30,800	30,800	27,000	29,300	30,000	26,300	15,000		
Average Daily Traffic Trucks on Build Alt.	-	25% retained	6,000	5,300	5,300	5,300	4,500	4,500	5,000	2,500	5,000	2,000
		75% retained	18,000	15,800	15,800	15,800	13,500	13,500	15,000	7,500		
Address Lack of Cont. Higher Func. Class E-W Routes												
New Lane Miles of Interstate	-		201	212	214	210	223	193	187	231	0	0
New Lane Miles of Other Principal Arterials	-		0	0	0	0	0	0	0	0	102	106
Provide for Efficient Movement of Freight												
Provide More Efficient Freight Movement												
Region Truck Hours of Travel	859,000	25% retained	-2,000	-2,100	-2,300	-2,600	-2,400	-2,100	-2,200	-1,100	200	200
		75% retained	-4,400	-4,800	-5,200	-5,900	-5,500	-4,800	-4,900	-2,500		
South Sub-Region Truck Hours of Travel	254,000	25% retained	-7,400	-5,800	-5,600	-5,400	-4,300	-4,600	-4,700	-1,900	600	600
		75% retained	-16,700	-13,000	-12,500	-12,200	-9,600	-10,300	-10,600	-4,200		

[1] The length of New Lane Miles of Limited-Access Highway and Other Principal Arterials does not provide a direct measure of travel benefit and is, therefore, not shaded.
[2] Arterial alternatives were only modeled as non-tolled facilities due to lack of access control making tolling impractical.

Highest Travel Benefit: **Lowest Travel Benefit:**

- Reduce regional travel delay/improve regional travel times: *Region daily VHT and South Sub-Region VHT*. Region daily VHT measures the total time spent traveling by all vehicles, and South Sub-Region daily VHT measures the total time spent traveling on all roads in the South Sub-Region excluding the Study Area for all vehicles. A decrease in vehicle hours of travel for the alternative corridors as compared to the No-Action Alternative shows that overall congestion is improved by the alternative corridor, resulting in faster speeds and lower travel times.
- Improve access to jobs: *Number of jobs accessible in 30 minutes to/from Study Area*. The number of jobs accessible in 30 minutes measures the number of 2040 jobs that are accessible from the Study Area in 30 minutes or less. The job accessibility measures were derived from dozens of sub-areas within the Study Area to present a balanced measure of job accessibility. Each sub-area had its own 30 minute travel time contour within which accessible jobs were counted. Where the contours overlapped, the numbers were corrected to avoid double-counting of accessible jobs. An increase in the number of jobs accessible in 30 minutes for the alternative corridors as compared to the No-Action Alternative shows that congestion and travel times are improved by the alternative corridor, resulting in greater accessibility to jobs from the Study Area.

- Alleviate Local System Congestion and Improve Local System Mobility
  - Address projected growth in local traffic and reduce local travel delay/improve local travel times: *Study Area daily congested vehicle miles of travel (VMT) on arterials; Study Area VHT on arterials; new transportation facility average daily traffic volume (ADT) (all vehicles and trucks)*. Study Area daily congested VMT by all vehicles on all arterial roads in the Study Area. For the arterial alternative corridors A-1 and B-2, this measure includes the new arterial roadways. A decrease in Study Area congested VMT for the alternative corridors as compared to the No-Action Alternative shows that congestion is improved by the alternative corridor on arterial roads in the Study Area. New transportation facility ADT measures the weighted average daily total vehicle and truck traffic usage on the new facility in 2040.
  - Address lack of continuous, higher functional classification east-west routes through the Study Area: *New lane miles of limited-access highways; new lane miles of other principal arterials*. New lane miles of limited-access highways measures the number of new lane miles of east-west limited-access highway added by the alternative corridor in the Study Area. Similarly, new lane miles of other principal arterials measures the number of lane miles of east-west other principal arterials added by the alternative corridor in the Study Area. Currently, there are no east-west limited-access highways or other east-west multi-lane through roads in the Study Area. Since all of the alternative corridors extend from I-55 to I-65, the less number of lane miles for the new facility, the more direct the new alternative corridor is.

- Provide for Efficient Movement of Freight
  - Provide more efficient freight movement: *Region truck hours of travel (THT) and South Sub-Region THT*. Region daily THT measures the total time spent traveling on all roads in the region for all truck vehicles, and South Sub-Region daily THT measures total time spent traveling on all roads in the South Sub-Region excluding the Study Area for all truck vehicles. A decrease in THT for the alternative corridors as compared to the No-Action Alternative shows that truck congestion is improved by the alternative corridor, resulting in faster truck speeds and lower truck travel times.

Non-Tolled Travel Performance

The initial alternative corridors were tested using the regional travel demand forecasting model. The analysis results assuming no tolls are presented in Table 2-2 based on the variance as compared to the 2040 No-Action Alternative. The limited access alternative corridors had much better travel performance than the arterial alternative corridors. Arterial alternative corridors A-1 and B-2 had the lowest travel performance for nearly every criteria.

In looking at the limited access alternative corridors, the alternative corridors located in the northern portion of the Study Area tended to have better travel performance than the alternative corridors located in the central or southern portion of the Study Area. Alternative corridor A1 had the highest forecasted average daily traffic and truck volumes, as well as good regional and local performance. Alternative corridors A2, A3, A4, and B1 had the next highest forecasted ADT, followed by A3S1 and B3. Alternative corridors A2, A3, A3S1, and B3 had the next highest forecasted truck volumes. Alternative corridor C4 had the least travel performance benefit of the limited access alternative corridors by a wide margin, with the least forecasted average daily traffic and truck volumes, and the least improvement versus the 2040 No-Action Alternative in terms of regional, local, and freight movement performance.

Tolled Travel Performance

The analysis results assuming tolling are presented in Table 2-3. There exists a myriad of ways in which tolling could be implemented on a new limited access facility. These include, but are not limited to:

- Flat toll rates;
- Toll rates by vehicle class;
- Toll rates by time-of-day;
- Toll rates by vehicle class by time-of-day;
- Toll rates by electronic toll collection (similar to I-PASS and I-Zoom) and cash toll collection;
- Toll rates by electronic toll collection and cash toll collection by vehicle class;
- Toll rates by electronic toll collection and cash toll collection by vehicle class and time-of-day;

- Dynamic toll rates (based on congestion levels); and
- Dynamic toll rates by vehicle class.

For example, toll rates could be established based on vehicle class (automobile, small, medium, and large trucks), the number of axles on the vehicle, and offering discounted tolls for carpools or alternative fuel vehicles.

Given the large number of initial alternative corridors, and the wide range of potential tolling approaches and levels, the regional travel demand forecasting model was not run multiple times for each alternative corridor under a range of tolling approaches and levels. Rather, a sensitivity test using the regional travel demand forecasting model was performed to see how the travel performance evaluation criteria changed under a lower and a higher toll assumption. Based on this sensitivity test, factors were developed and applied to the non-tolled travel performance evaluation criteria to reflect the implementation of tolling.

Furthermore, given the level of uncertainty of any tolling policy at this early stage of the study, a range of traffic diversions resulting from the implementation of tolling was assumed. For this analysis, it was assumed that between 25 and 75 percent of the traffic on the limited access alternative corridors, as compared to the non-tolled scenario, would remain on the initial alternative corridors given the implementation of tolling. This 25 to 75 percent range of traffic retained on the alternative is due to the uncertainty regarding tolling policy. In addition to the above range of tolling assumptions, there is uncertainty regarding toll policies to set toll rates. For example, are toll rates set to maximize toll revenue; or are they set to be equivalent to other toll rates in the region; or are they set to encourage usage for certain vehicles classes; or are they set to address broader safety, mobility, and/or accessibility goals; or some combination. In general, toll rates that are set to maximize toll revenue tend to have a lower proportion of retained traffic as compared to those that are set to maximize throughput or usage.

The analysis results for the implementation of tolling, assuming a 25 to 75 percent of traffic retained on the facility, are presented in Table 2-3 based on the variance as compared to the 2040 No-Action Alternative. As noted in Table 2-2 and Table 2-3, the arterial alternative corridors were only modeled as non-tolled facilities since the lack of access control makes tolling impractical.

Similar to the non-tolled results, the limited access tolled alternative corridors had much better travel performance than the arterial (non-tolled) alternative corridors. Arterial alternative corridors A-1 and B-2 had the lowest travel performance for nearly every criteria.

In looking at the limited access tolled alternative corridors, the alternative corridors located in the northern portion of the Study Area tended to have better travel performance than the alternative corridors located in the central or southern portion of the Study Area. Alternative corridor C4 had the lowest travel performance benefit of the limited access tolled alternative corridors by a wide margin.

Conclusion

With the uncertainty at this early stage of the study as to whether tolling would be implemented on limited access facilities, the initial alternative corridors were evaluated for travel performance with and without tolling on the limited access facilities. The results were fairly consistent between no toll and tolled scenarios based on 75 percent of the traffic being retained. There was a notable reduction for some of the travel performance criteria based on 25 percent of the traffic being retained. With arterial alternative corridors A-1 and B-2 having the worst travel performance under both scenarios, they were not carried forward for more detailed analysis. In addition, alternative corridor C4 was the worst performing of all the limited access alternative corridors in both no toll and tolled scenarios. Consequently, alternative corridor C4 was not carried forward for more detailed analysis.

2.4.2.3 Initial Socioeconomic and Environmental Impact Evaluation

This evaluation involved a comparative analysis of the socioeconomic and environmental impacts for each of the initial alternative corridors. The resulting evaluation matrix is shown in Table 2-4.

The evaluation criteria shown in Table 2-4 was selected from the project GIS database,[4] which includes a wide range of socioeconomic and environmental datasets covering the Study Area. Based on a review of the dataset presence within the Study Area, these evaluation criteria were viewed as having the highest potential for impacts and were therefore used as a summary of overall impacts. The complete list of socioeconomic and evaluation criteria, and the resulting impacts for each of the alternative corridors considered, is presented in the AER. The impacts were assessed using the working alignment within each alternative corridor, which was 400 feet wide for the new limited access alternative corridors and 200 feet wide for the arterial alternative corridors. As previously discussed, for purposes of the Tier One studies, the working alignments were located in the middle of the alternative corridors for comparative analysis.

The socioeconomic and environmental impact evaluation matrix included the following evaluation criteria related to the potential impacts:

- Alignment length: Alignment length, measured in miles, shows the total length of the new facility for each alternative corridor. All other things being equal, the shorter the alignment length, the less potential impacts resulting from the new facility, and the lower the implementation cost.
- Wetland impacts: Wetland impacts, measured in acres, represent the potential area of wetlands within the working alignment for each alternative corridor based on published data. In general, wetlands are those areas that are saturated by surface or groundwater that under normal circumstances would support a prevalence of vegetation typically adapted for life in saturated soil conditions. Field studies will be undertaken as part of the Tier Two NEPA studies.

[4] Illiana Corridor Study GIS Technical Documentation, June 2012. Refer to Appendix F.

Table 2-4. Initial Round Socioeconomic and Environmental Impacts Matrix

EVALUATON CRITERIA	ALTERNATIVE CORRIDORS									
	A1	A2	A3	A3S1	A4	B1	B3	C4	Arterial A-1	Arterial B-2
Alignment Length (miles)	49.1	53.0	52.6	50.3	55.9	48.4	46.8	57.8	46.2	46.4
Total Wetland Impacts (acres)	44.0	53.8	37.3	30.9	29.5	32.2	10.1	11.9	52.3	34.1
Total T&E Impacts (acres)	0.0	0.0	0.0	0.0	0.0	3.1	3.1	4.3	13.9	3.1
Total Floodplains Impacts (acres)	139.7	128.7	146.2	221.7	163.3	235.0	202.6	181.3	195.5	186.5
Total Stream Impacts (miles)	3.5	12.5	12.1	3.2	12.1	3.5	3.2	9.7	3.1	2.8
Total Impared Streams Impacts (miles)	3.9	15.0	12.5	2.4	14.1	3.5	1.9	9.5	2.3	2.4
Water Bodies (Rivers, Lakes, Ponds) (acres)	25.0	17.7	22.1	20.4	15.4	12.2	9.7	24.3	7.7	10.9
Parks/Nature Preserves/Natural Areas (acres)										
Total Parks Impacts (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.0	0.0
Total Nature Areas Impacts (acres)	11.8	11.8	11.8	11.8	11.8	16.0	13.1	47.1	27.2	4.7
Total Trail Impacts (acres)	0.2	9.7	9.5	0.3	9.5	1.0	0.2	0.0	4.6	0.2
Special Use (acres)										
Farmland (acres)	2435.0	2574.0	2549.7	2443.5	2705.8	2340.9	2273.3	2544.7	2240.6	2251.7
Landfills (acres)	0.0	0.0	17.5	0.0	17.5	0.0	0.0	0.0	0.0	0.0
Cemeteries (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	2.8
Business Parks (acres)	38.3	38.3	7.5	0.0	7.5	41.0	2.7	0.0	21.1	7.8
Intermodals (acres)	85.1	85.1	54.3	46.8	54.3	38.3	0.0	0.0	14.0	0.0
Affected Buildings (each)										
Residential (each)	213.0	77.0	54.0	41.0	46.0	234.0	57.0	81.0	568.0	134.0
Commericial (each)	42.0	25.0	15.0	20.0	18.0	30.0	8.0	1.0	98.0	18.0
Agricultural and Farms (each)	42.0	44.0	32.0	44.0	44.0	44.0	44.0	37.0	8.0	8.0
Unknown (each)	44.0	58.0	50.0	46.0	55.0	29.0	35.0	77.0	39.0	36.0

Least Impacting: **Most Impacting:**

- Threatened and endangered species: Threatened and endangered species impacts, measured in acres, represents the potential area of habitat for known occurrences of protected species within the working alignment for each alternative corridor based on published data.
- Floodplain impacts: Floodplain impacts, measured in acres, represent the potential area of floodplains within the working alignment of each alternative corridor. In general, floodplains are the areas adjacent to a river or stream that have been or may be covered by floodwater at or below the 100-year frequency flood elevation.
- Stream and impaired stream impacts: Stream and impaired stream impacts, measured in miles, show the potential length of streams and impaired streams within the working alignment of each alternative corridor. In general, an impaired stream has a pollution problem preventing it from meeting one or more beneficial uses (e.g.; recreation, fish habitat, drinking water) of the stream.
- Water bodies: Water bodies, measured in acres, show the potential area of water bodies other than streams within the working alignment of each alternative corridor. Water bodies include rivers, lakes, and ponds/reservoirs.
- Parks, nature areas, and trail impacts: Parks, nature areas, and trails, measured in acres, show the potential area of park, nature areas, and trails within the working alignment of each alternative corridor. These lands generally represent different types of natural areas or public use areas.
- Farmland, landfill, cemetery, business park, and intermodal facility impacts: These special uses, measured in acres, show the potential area of impacts on these special areas within the working alignment of each alternative corridor.
- Residential, commercial, agricultural and farm impacts, and unknown building impacts: These affected building impacts, measured in number of structures, show the potential impacts on buildings located within the working alignment for each alternative corridor. It should be noted that there may be more than one building impact on an individual parcel of land. Field studies will be undertaken as part of the Tier Two NEPA studies to verify the number and status of each structure.

The two least impacting alternative corridors per criterion are shaded green and the two most impacting alternative corridors per criterion are shaded orange. It is again noted that for some criteria there are more than two alternatives with the two best or worst results due to having identical values, which results in more than two alternative corridors being shaded.

As shown in Table 2-4, Corridor B3 had the overall least impacts on the resources considered in the initial round, based on the highest number of green shaded boxes (11), which represent the two least impacting alternative corridors. Corridor B3 and arterial Corridor B-2 also had the least number of orange shaded boxes (one) representing the two highest impacting alternative corridors.

Overall, the initial round evaluation found that Corridors A2, A4, A-1, C4, A1, and B1 would be the most impacting with the highest number of orange shaded boxes. Of this

group, Corridor A2 was found to be the most impacting with nine orange boxes, followed by A4 and A-1 with seven orange boxes, Corridor C4 with six orange boxes, and Corridors A1 and B1 with four orange boxes each. In terms of individual impacts, arterial Corridor A-1 had a high number of potential residential and commercial affected building impacts since it traverses several developed areas. Arterial Corridor A-1 had well over 600 residential and commercial affected buildings, and over 700 total affected buildings. This represents more than twice the number of affected residential and commercial buildings, and total affected buildings as the next highest alternative corridor. Based on the adjacent developed areas along arterial Corridor A-1, revisions to the corridor alignment would not substantially reduce these impacts. Given this disproportionately high number of building impacts, it was recommended that arterial Corridor A-1 not be carried forward based on impacts. This finding provided an additional basis for eliminating this alternative corridor, which also was eliminated based on its poor transportation performance.

2.4.2.4 Initial Round Evaluation Summary

With reference to Table 2-2 and Table 2-3, all of the limited access alternative corridors would improve travel performance over the 2040 No-Action Alternative for all travel performance measures. The arterial Corridors A-1 and B-2 were projected to perform slightly worse than the 2040 No-Action Alternative for region VHT, Study Area truck miles of travel on arterials, and region THT, essentially indicating no improvement in these measures.

The limited access alternative corridors had much better travel performance than the arterial alternative corridors. Arterial Corridors A-1 and B-2 had the lowest travel performance for nearly every criteria and are not recommended to be carried forward. The limited access alternative corridors located in the northern portion of the Study Area tended to have better travel performance than the alternative corridors located in the central or southern portion of the Study Area. Corridor C4 had the least improvement in travel performance of the limited access alternative corridors by a wide margin, with the least forecasted average daily traffic and truck volumes. Corridor C4 was not recommended to be carried forward.

With respect to the potential socioeconomic and environmental impacts, Corridors A3S1 and B3, and arterial Corridor B-2 had the lowest overall impacts based on being one of the two least impacting alternative corridors for the most criteria (they had the most "green" colored measures), and/or being one of the two most impacting alternative corridors for the fewest criteria (the least "orange" colored measures).

Arterial Corridor A-1 had well over 600 potential residential and commercial building impacts combined, and over 700 total building impacts. This total is more than twice that of the next highest alternative corridor for residential and commercial building and total building impacts. Given this disproportionately high number of potential building impacts, arterial Corridor A-1 was also not recommended to be carried forward based on impacts.

As a result, Corridor C4 and arterial Corridors A-1 and B-2 were not carried forward for further evaluation. These three initial alternative corridors had the poorest overall travel performance, and arterial Corridor A-1 had disproportionately high residential and commercial potential building impacts. Corridors A1, A2, A3, A3S1, A4, B1, and B3 were advanced for a more detailed second round of evaluation with respect to potential refinements to minimize impacts.

2.4.3 Second Round Alternatives Evaluation

As part of the second round evaluation, potential refinements to the remaining Corridors A1, A2, A3, A3S1, A4, B1, and B3 were identified through stakeholder coordination and ongoing technical analysis. The alternative corridors were evaluated to determine if overall and/or specific socioeconomic and environmental impacts could be avoided or minimized. Many of the impacts of greatest concern and potential alternative corridor refinements were identified based on stakeholder coordination. As a result of this process, some alternative corridor refinements were carried forward as described below. A further detailed comparative evaluation of socioeconomic and environmental impacts associated with the remaining refined alternative corridors was then performed.

In addition, an assessment of accommodating potential future multi-purpose uses was included toward the end of the second round evaluation. While flexibility for multi-purpose use is not part of the Purpose and Need for the project, it was included for informational purposes in response to comments from resource agencies. The flexibility for accommodating potential future multi-purpose uses was assessed based on adjacent land use constraints. In general, an alternative corridor that is not located adjacent to developed areas would provide greater flexibility for potential future expansion to accommodate other transportation modes, utilities, or other purposes. This assessment provided additional supporting information with respect to identifying the alternative corridors to be carried forward in the Tier One DEIS, along with the No-Action Alternative.

2.4.3.1 Stakeholder Coordination

As noted above, substantial coordination occurred with project stakeholders to gain their input with respect to the initial alternative corridors. This included input received at the CPG Meeting and Public Information Meetings in December 2011, as well as subsequent individual stakeholder coordination meetings. The stakeholder input received at these coordination meetings provided key insight with respect to areas of concern, areas of support, and potential alternative corridor refinements to be considered. The input received is documented in individual meeting summaries and is summarized in Section 4.0 of this document. Highlights of the stakeholder comments received on the alternative corridors are as follows:

- The northern "A" and "1" alternative corridors resulted in a range of comments from stakeholders. While there was support for a northern alternative corridor from Crete, Merrillville, and the South Suburban Mayors and Managers Association (SSMMA) based on travel performance benefits, there was opposition from other stakeholders including the cities of Elwood, Manhattan, Monee, University Park, and

St. John based on impacts to existing residences and businesses, and to areas of planned development. Of the remaining stakeholders, comments of support were mainly of the "we can live with it" variety rather than of a strong desire to have the "A" alternative corridors located as shown. There was also stakeholder concern on the costs of addressing the engineering challenges and impacts of the "A" alternative corridors associated with construction of a new limited access facility in a more urbanized environment outweighing the travel benefits or revenues that might be derived from tolling.

- Corridor B3 received more stakeholder support than any other alternative corridor. Corridor B3 was supported by numerous stakeholders based on having the best combination of maximizing travel benefits and reducing impacts in a "buildable" corridor. This included support from some communities that were directly impacted. A few stakeholders in the southern portion of the Study Area in Indiana suggested moving the east connection to a more southern location, but they recognized the additional costs and reduced travel benefits of doing so.
- Corridor B1 received a mixture of favorable and unfavorable reviews; the strongest opposition coming from the agricultural community and eastern communities where impacts would be the greatest.
- Impacts at the "A" connection point with I-55 were seen as problematic by some stakeholders, though not rising to the level of fatal flaws. In particular, impacts to homes and buildings near the Bluff Road/I-55 interchange, the approximate 5,000 foot length Des Plaines River crossing, and the impacts to existing and planned development along Noel Road and on the CenterPoint-Joliet development property were seen as obstacles that would require substantial expenditures to achieve and to provide mitigation.
- Impacts caused by Corridors A3S1, B1, A3, and A4 were not favored by the agricultural community due to the parcel severances that would increase with the diagonal alternative corridors. In addition, these diagonal alternative corridors were also viewed by stakeholders as resulting in out-of-way travel due to their orientation. Several communities understood that parcel severances would increase under diagonal corridors, and that such alternative corridors would make land acquisition and addressing parcel access issues more difficult.
- The restrictions of the Federal law establishing the Midewin National Tallgrass Prairie and the Joliet Army Training Area properties (Illinois Land Conservation Act of 1995) were explained to and understood by stakeholders as affecting the ability to site both the "A" and "B" alternative corridors. In particular, the "A" alternative corridors likely could not be moved south of Noel Road to avoid CenterPoint-Joliet impacts due to the Joliet Army Training Area, and the "B" alternative corridors likewise could not access I-55 via River Road. Also, the "B" alternative corridors would be difficult to connect with IL-53 directly due to the proximity of the Midewin National Tallgrass Prairie property. Some stakeholders, including Wilmington and others, were receptive to offsetting the proposed IL-53 interchange location to the east to avoid complications with the Midewin National Tallgrass Prairie property.

- Conflicts with existing planning were identified along Corridor A1 by several communities including Manhattan, University Park, and St. John. These communities were strong in their opposition to Corridor A1, and suggested a re-route of Corridor A1 or using a different alternative corridor altogether to avoid the potential land use conflicts. St. John was opposed to a refinement of Corridor A1 to create a joint use with an existing utility corridor, since a community park exists within the utility corridor.
- The Village of Monee was not supportive of Corridor B1 due to resulting impacts to a residential area directly adjacent to the SSA site. The Village had dealt with other potential impacts in this area associated with the SSA.
- Corridor A1 as proposed would conflict with Governors State University (GSU) student housing and future commercial development plans. It is possible to realign Corridor A1 to reduce these impacts. Several stakeholders were concerned with the length, impacts, and cost of the bridge over the Metra station in University Park as part of Corridor A1, and the associated commuter parking area at the Governors Highway/University Parkway intersection. Avoidance of a Forest Preserve District of Will County (FPDWC) property would result in additional impacts to GSU property.
- Some stakeholders near the southwestern part of the Study Area were interested in examining connections between the "B" and "C" alternative corridors. Others were skeptical such a connection could be reasonably achieved due to the presence of homes, recreational areas, and the Braidwood Nuclear Station.
- The presence of pipeline utilities in Indiana within the utility corridor adjacent to Corridor A1 was brought to the study team's attention. Stakeholders indicated these constraints may make Corridor A1 cost-prohibitive. However, Merrillville was a strong supporter of the Corridor A1 connection to I-65 as an economic development generator, and requested the study look at a local access on the west end of the connection.
- Several communities offered suggestions to improve the alternative corridors. In particular, Crete offered several variations on a northern alternative corridor that would reduce potential impacts to a proposed intermodal site and an existing landfill, as well as southern corridors that would go north of Beecher and avoid that village's traffic concerns.
- There was stakeholder comment that the "A" alternative corridors would not address the high amount of trucks traveling east-west along Wilmington-Peotone Road and other east-west roads in the southern portion of the Study Area. There was diverse stakeholder opinion on whether the Illiana Corridor should primarily be a reliever route for I-80, or a regional bypass route serving the entire region.
- Two communities in the southeastern part of the Study Area asked about the viability of a "B" alternative corridor with a "4" connection to I-65 south of SR 2. They were informed of its increased engineering challenges due to floodplain and soils issues and its poor travel performance similar to Corridor C4 due to the

southern connection point. The communities understood the logic of keeping Corridor B3 north of SR 2.

- Several stakeholders inquired about impacts to their local and arterial road systems as a result of introducing an Illiana Corridor into the mix of travel options. The study team indicated that individual roads of interest to a community could be isolated in the travel demand model and studied to determine the positive or negative effects of any of the Illiana Corridor alternative corridors. Beecher has consistently been concerned about the effect of Corridor B3 in drawing excessive traffic on IL-1 through the village; they indicated a long planned western bypass may be needed as a solution to relieve traffic if Corridor B3 is built. Coal City was concerned about increased traffic on IL-113 and Lorenzo Road if Corridor B3 was built.
- Several stakeholders expressed preference for Corridor B3 as the shortest, most direct alternative corridor, one that would provide a true regional bypass without impacting dense urbanized areas, and providing enough room for expansion or multi-modal uses without urban constraints that were present in the northern corridors. Such support came from a variety of communities that were either directly impacted by, were near, or were a distance from Corridor B3.
- Several stakeholders commented that it is logical that the northern alternative corridors would draw more commuter traffic than central or southern alternative corridors, but the cost of addressing the impacts may outweigh the additional revenue potential in a tolling scenario.
- No fatal flaws in any of the alternative corridors were seen by the FPDWC representatives, although they requested that elements of the alternative corridors may need to be moved to avoid impacts, or mitigated if this was not possible.

2.4.3.2 Potential Alternative Corridor Refinements

Based on the stakeholder input received, and based on the ongoing more detailed technical analysis, a number of potential refinements to the second round alternative corridors were studied to further avoid or minimize socioeconomic and environmental impacts. Each of these potential alternative corridor refinements was evaluated with respect to whether overall socioeconomic and environmental impacts can be avoided or minimized, and whether a transportation benefit would be provided. On this basis, a determination was made as to whether the potential refinement was carried forward. The documentation of the potential refinements considered, including graphical and narrative evaluation, is included in Appendix C– Alternatives to be Carried Forward Technical Memorandum.

The second round alternative corridors included "A" and "B" connection points with I-55 and "1" through "4" connection points with I-65, with these connection points shared by multiple alternative corridors. Based on the stakeholder input received, many of the areas of highest concern with respect to potential impacts were near these connection points and/or in locations shared by multiple alternative corridors. These areas of highest impact concern and the associated refinements considered are discussed below.

The "A" Alternative Corridors

For alternative corridors with "A" connection points at I-55 (Corridors A1, A2, A3, A3S1, and A4), the refinement process focused on minimizing impacts to new residential and commercial developments discovered during field visits and stakeholder meetings. To minimize the impacts between I-55 and IL-53 it was necessary to consider a refinement to route the alternative corridor alignment north of CenterPoint Way. This introduced severe impacts to the Autobahn Country Club and Stepan Chemical Company next to the Des Plaines River, diminishing the benefits of the relocation. The refined alternative corridor alignment also increased the number of larger diameter pipeline crossings and added to the rail siding relocation costs at the Stepan property. Options to move the alternative corridor alignment south of Noel Road were not considered, as the property south of Noel Road is currently used by the Joliet Army Training Area. This area south of Noel Road is earmarked for transfer to the Midewin National Tallgrass Prairie, and as such is considered a protected land.

From I-55 to IL-53, impacts to the built environment are unavoidable. The location of any alternative corridor would be a tradeoff for one impact to another, as there is no clearly lesser-impacting alternative corridor alignment to connect to I-55. In addition to built environmental impacts, the crossing location at the Des Plaines River requires an approximately 5,200 foot long bridge to accommodate the terrain in the area. The bridge would require substructure elements within the Des Plaines State Fish and Wildlife Area (DPSFWA). The interchange connection point at Bluff Road would introduce a system interchange in place of a local service interchange. The resulting footprint would require relocation of over 1.3 miles of I-55 frontage road on both east and west sides of I-55 and require collector-distributor (CD) lanes between Bluff Road and US 6. The location of the interchange presents substantial design obstacles with respect to providing a combined local and Interstate connection point, and as a result would likely eliminate the existing local access to I-55 from Bluff Road. The "A" alternative corridors include an unavoidable crossing of the historic Alternate Route 66 (i.e.; IL-53) and would require continued Section 106 consultation to minimize impacts to Alternate Route 66.

Corridors A1, A2, A3, and A4 intersect I-57 at a location that is constrained with respect to interchange spacing, due to other existing and proposed interchanges along I-57. As a result, east of I-57, the alignment for these alternative corridors must turn sharply south to cross Governors Highway and the University Park Metra station at the intersection of Governors Highway and University Parkway. This alternative corridor alignment location was placed to utilize the undeveloped properties north of the University Park industrial estate. The alternative corridor alignment is then routed through the GSU campus property. A refinement was evaluated in this area to move the alternative corridor to the north in order to avoid the Thorn Creek Headwaters Preserve. However, during stakeholder meetings, the study team discovered that this would encroach on a proposed student housing plan at GSU. Potential alternative corridor alignment refinements are limited in this area, since further refinements to avoid the impacts to the proposed housing area would introduce numerous additional commercial, residential, and environmental impacts east and west of the current location.

Corridor A2 was reviewed for opportunities to reduce or minimize impacts. However, Corridor A2 has very little flexibility based on adjacent developed property and a series of adjacent nature areas, wetlands, and potential threatened and endangered species habitats. Any refinement to this alternative corridor alignment would result in additional impacts to one of those categories or adding building impacts. Corridor A2 had disproportionately high impacts to forested areas and wetlands.

Corridor A3 was initially routed south of the Goodenow Grove Nature Preserve. However, it was determined that this would impact the Beecher Landfill. To avoid or minimize this impact, the alternative corridor alignment was moved to the north, introducing building impacts and severing the southern portion of a proposed intermodal site. Options to locate the alternative corridor south of the landfill were considered, but the resulting geometry included impacts to the SSA footprint, and the interchange on IL-394 would require relocation of Goodenow Road.

Corridor A4 extends the Corridor A3 alignment south of the Corridor B3 intersection point, then routes south of Lowell and connects to I-65 at the SR 2 interchange. Corridor A4 was refined to avoid impacts to the recent improvements on SR 2, to avoid the Buckley Homestead park expansion, and finally to avoid the numerous water well sites south of the Town of Lowell. The resulting location encroaches on the Kankakee River floodplain. This section includes a much higher density of intersecting waterways and complicates the drainage design.

The "1" Alternative Corridors

At the "1" connection point with I-65, there were also numerous environmental and socioeconomic impacts encountered. Corridors A1 and B1 include several common impacts to residential areas and federally protected Section 4(f) properties as discussed in more detail in Section 2.5.3.2. Corridors A1 and B1 are located approximately 1.4 miles south of a Commonwealth Edison (ComEd) electric transmission line within a less densely populated portion of a subdivision in the south part of St. John, Indiana. As part of the initial round impact evaluation, it was determined that this alternative corridor alignment would impact 111 buildings along a 0.6 mile section in this area. In addition to the building impacts, any interchange located on US 41 for Corridors A1 and B1 would impact the Shrine of Christ's Passion Sculpture facility.

The "1" connection point alternative corridors were refined to minimize building impacts by running parallel to the electric transmission line. The transmission line, as well as a large natural gas pipeline within the ComEd right-of-way, would need to be relocated and moved to one side to accommodate the proposed transportation facility. This substantially reduced the number of building impacts. However, the refined alternative corridor alignment would require the complete removal of Homestead Acres Park #2, introducing Section 4(f) impacts.[5] It was concluded from the initial and second round evaluations that any connection to the "1" end point on I-65 creates unavoidable and severe impacts to the community of St. John. An alternative corridor in this area would

[5] Refer to Section 3.14 for definition of Section 4(f).

divide a residential area and have unavoidable use of a Section 4(f) resource, regardless of location. In addition to the residential and recreational impacts, the alternative corridors include a substantial built impact cost when considering the relocation of transmission and gas lines or the purchase of over 100 residential properties. Similar findings occur in Schererville, where the resulting refined alternative corridor provided marginal reductions in housing impacts but still included community severance.

The "B" Alternative Corridors

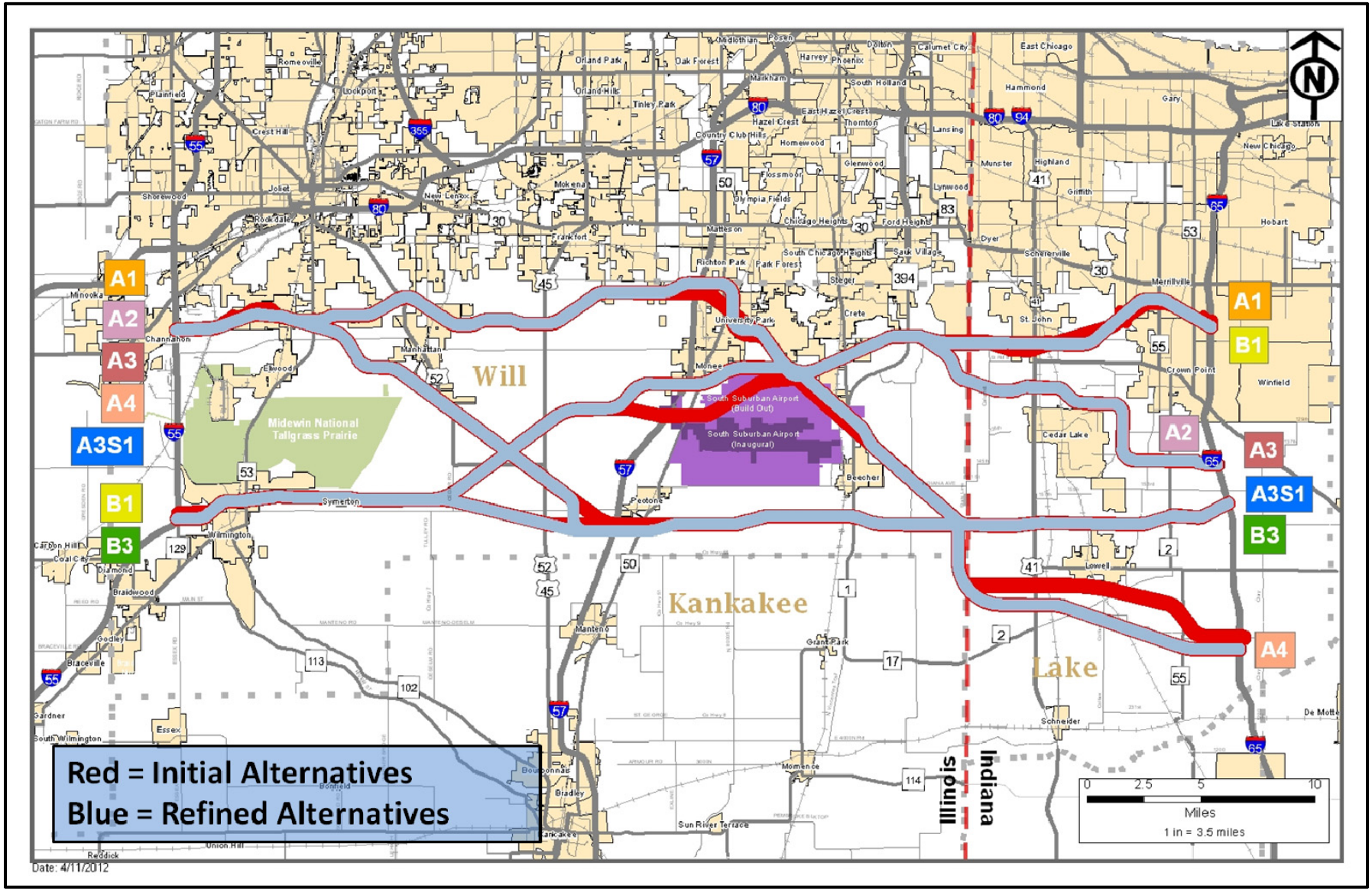
Corridors B1 and B3 connect to I-55 at the IL-129 interchange location, and continue east on the same alignment until approximately Cedar Road. The initial alignment near IL-129 would have required the relocation of Widows Road. A refinement to this connection point was made by moving Corridors B1 and B3 south and the system interchange was developed to a conceptual level to confirm that a combined local and Interstate access interchange is feasible. The resulting alternative corridor then crosses the Kankakee River requiring a 2,500 foot long bridge (less than half the length of the Des Plaines River crossing). The alternative corridor then runs along an electric transmission line north of the City of Wilmington. Impacts were noted to the Illinois Department of Natural Resources (Illinois DNR) property east of the Kankakee River (i.e.; DPSFWA, and the Des Plaines Game Propagation Center). Corridors B1 and B3 were designed to minimize forested areas and reduce community severances that would be caused by avoiding the Illinois DNR property. The "B" alternative corridors also include an unavoidable crossing of the historic Alternate Route 66 (i.e.; IL-53) and, similar to the discussion of "A" alternative corridors above, would require continued Section 106 consultation to avoid and minimize impacts to Alternate Route 66.

East of Cedar Road, Corridor B1 departs diagonally to the northeast and joins Corridor A1 north of the proposed SSA footprint. Corridor B1 includes many of the "1" connection point issues noted above, but also includes 379 agricultural parcel severances, of which 264 are on the diagonal alignment.

Corridor B3 continues east from Cedar Road to run south of Peotone and Beecher, Illinois. The alternative corridor then runs parallel to an east-west electric transmission line, crossing West Creek in Lake County. Between the towns of Cedar Lake and Lowell, the Corridor B3 shifts north of the electric transmission line to reduce impacts to wetlands and existing properties. The "3" connection point is located approximately 3 miles south of the US 231 interchange on I-65. There are no major man-made or natural environmental constraints within this area to restrict the placement of the interchange.

Based on the above evaluation, a number of alternative corridor refinements were carried forward for further evaluation. Figure 2-24 is a composite of the alternative corridor refinements that were carried forward for further evaluation with respect to comparative socioeconomic and environmental impacts.

Figure 2-24. Alternative Corridor Refinements Carried Forward



2.4.3.3 Second Round Socioeconomic and Environmental Impacts Evaluation

As part of the second round evaluation, the socioeconomic and environmental impacts evaluation was based on the alternative corridor refinements and updated sets of geo-database information that became publicly available, which included NWI inventory GIS downloads, Will County zoning, Lake County zoning, Natural Areas and Nature Preserves Illinois. In addition, there were some modifications to the impact measurement methodology for the second round evaluation as described below.

Wetland impacts for the second round evaluation includes counting of impacts to all classifications of wetlands. This results in some overlap, such as with water bodies, but is a more comprehensive assessment of wetland impacts. In addition to the computation changes, the Study Area has an increase of 11 percent in identified wetlands since the initial data gathering stage though updates to the GIS database.

Floodplain and Stream Impacts for alternative corridors with the "1" connection point were updated based on the alternative corridor refinement to include the constrained section through the St. John area. Impacts associated with alternative corridors with the "4" connection point were updated to reflect the south shift of the I-65 connection point further into the floodplain zone.

Impacts to Parks and Natural areas were further evaluated to determine if state and local classifications of land use and characteristics were being duplicated. It was determined that the total parks and natural areas classification would be clearer if separated into sub-categories. Where a state designation and local designation overlap, the double count was removed.

Total Trail Impacts was further evaluated to determine if the local jurisdictional trails were accounted for in the CMAP or County mapping layers. Where overlap occurred the screening results were adjusted to eliminate double reporting.

Total Farmland Impacts was separated into the major categories for cropped areas, and shapes classified as developed land use were removed from the summary total.

Table 2-5 includes a summary of the evaluation of socioeconomic and environmental impacts for the second round alternative corridors based on the alternative corridor refinements carried forward. As shown in this table, Corridors A1, A2, A3, A4, and B1 in the northern portion of the Study Area with "A" connections to I-55 and/or "1" connections to I-65 have the highest overall socioeconomic and environmental impacts based on being one of the two most impacting alternative corridors (the most "orange" colored measures) for six to nine of the evaluation criteria. Corridors A3S1 and B3 each had only two "orange" colored measures. Corridors A3S1 and B3 had the lowest overall socioeconomic and environmental impacts based on being one of the two least impacting alternative corridors (the most "green" colored measures) for seven and 14 of the evaluation criteria respectively. Corridor B3 had the lowest or near the lowest overall impacts for most criteria. This remains generally consistent with the initial round evaluation results.

Table 2-5. Second Round Socioeconomic and Environmental Impacts

EVALUATON CRITERIA	ALTERNATIVE CORRIDOR						
	A1	A2	A3	A3S1	A4	B1	B3
Alignment Length (miles)	49.1	53.0	52.6	50.3	55.9	48.4	46.8
Total Wetland Impacts (acres)	63.6	62.5	52.0	51.5	40.0	42.4	21.7
Total T&E Impacts (acres)	0.0	0.0	0.0	0.1	0.0	3.2	3.2
Total Floodplains Impacts (acres)	118.6	128.6	148.8	211.3	368.2	214.4	253.0
Total Stream Impacts (miles)	2.3	2.5	3.0	3.2	4.9	3.1	3.2
Total Impared Streams Impacts (miles)	2.2	2.2	2.0	2.5	2.4	1.8	2.0
Water Bodies (Rivers, Lakes, Ponds) (acres)	16.7	17.7	22.2	20.4	15.6	4.0	9.7
Parks/Nature Preserves/Natural Areas (acres)							
Total Park and Natural Area Impacts (acres)	52.0	33.2	33.2	13.9	33.2	25.7	6.9
Total Forested Areas Impacts (acres)	69.6	146.5	77.8	68.6	37.0	43.2	43.3
Total Trail Impacts (miles)	3.6	3.5	3.6	0.3	3.6	0.8	0.2
Special Use (acres)							
Farmland (acres)	1989.0	2025.9	2162.6	2137.5	2404.1	1942.1	2025.9
Landfill (each)	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Cemeteries (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Business Parks (acres)	38.3	38.3	44.2	0.0	44.2	41.0	2.7
Intermodals (acres)	85.1	85.1	89.2	46.8	89.2	38.3	0.0
Major Utility (miles)	23.6	15.1	13.7	5.4	14.0	17.9	7.6
Affected Buildings (each)							
Residential (each)	96.0	77.0	54.0	41.0	46.0	234.0	41.0
Commericial (each)	36.0	25.0	15.0	22.0	18.0	30.0	8.0
Agricultural and Farms (each)	33.0	44.0	32.0	54.0	44.0	44.0	43.0
Unknown (each)	42.0	58.0	50.0	49.0	55.0	29.0	29.0
Total	207.0	204.0	151.0	166.0	163.0	337.0	121.0

Least Impacting: **Most Impacting:**

2.4.3.4 Potential Community, Ecological and Special Lands Impacts

The most substantial potential impacts remaining for the refined alternative corridors were identified and reviewed to assess whether these impacts could be mitigated. A summary of potential community based impacts is presented in Table 2-6 below and a summary of potential ecological and special lands (Section 4(f)) impacts is presented in Table 2-7.

Table 2-6. Potential Community Based Impacts

Community	Feature	Location	Impact	Potential to Avoid, Minimize, Mitigate	Impacting Corridors
Channahon/ Elwood	Residential subdivision	Northwest quadrant of I-55 system interchange	Community cohesion – displacement of 20-30 residences	Unavoidable	A1, A2, A3, A4, A3S1
Joliet	CenterPoint Intermodal Facility	North of Millsdale Road	Economic impact – encroachment onto existing business park and planned expansion (Home Depot/APL)	Unavoidable (or relocate onto Joliet Army Training Area.	A1, A2, A3, A4, A3S1
University Park	GSU	Main Campus	Educational institution impact – displacement of student housing	Unavoidable. Impact based on alternative refinement to avoid impacts to the Thorn Creek Headwaters Preserve.	A1, A2, A3, A4
Crete	Equestrian Center	IL-1/Dixie Highway	Economic impact – taking of business	Unavoidable	A1, A2, B1
Schererville	Residential subdivision	West of Clark Road	Community cohesion – displacement up to 16 residences	Unavoidable unless expensive relocation of major water and electric utilities.	A1, B1
Merrillville	Residential subdivisions	East and west of Taft	Community cohesion – displacement up to 10 residences	Unavoidable with interchange footprint.	A1, B1
Wilmington	Residence and Businesses	Kankakee River Crossing Location near I-55.	Displace one residence and two commercial /business buildings.	Unavoidable. Refined working alignment would have greater impacts.	B1, B3

Table 2-7. Potential Impacts on Parks, Recreation Areas, Refuges, and Historic Properties[1] (Section 4(f) Impacts)

Community	Feature	Location	Impact	Potential to Avoid, Minimize, Mitigate	Impacting Corridors
Joliet	IL-53/ Alternate Route 66	Proposed interchange with Alternate Route 66 (i.e.; IL-53)	Potential Section 4(f) – historic section and Scenic Byway (NPS)	Unavoidable crossing of IL-53. Interchange refinement options will be considered per coordination with IL SHPO.	A1, A2, A3, A4, A3S1
Crete	FPDWC – Plum Valley Preserve	Proposed interchange at IL-394	Potential Section 4(f) – taking of Forest Preserve / Nature Preserve property.	Unavoidable	A1, A2, B1
St. John	Homestead Acres Park No. 2	ComEd ROW between White Oak and Olcott Avenues	Potential Section 4(f) – taking of park property; also includes non-motorized St. John Trail	Unavoidable – located within ComEd ROW.	A1, B1
Wilmington	Kankakee River INAI Site	Kankakee River Crossing	Crossing of Site	Unavoidable – Design refinements to minimize impact.	B1, B3
	DPSFWA	North of Kankakee River	Crossed as proposed	Avoidable – coordination ongoing with Illinois DNR to minimize impacts.	B1, B3

Table 2-7. Potential Impacts on Parks, Recreation Areas, Refuges, and Historic Properties[1] (Section 4(f) Impacts) (continued)

Community	Feature	Location	Impact	Potential to Avoid, Minimize, Mitigate	Impacting Corridors
Wilmington (continued)	Midewin National Tallgrass Prairie	River Road	Incidental encroachment onto Midewin with interchange	Avoidable – IL-53/Alternate Route 66 interchange refinement options will avoid encroaching onto Midewin.	B1, B3
	IL-53/ Alternate Route 66	Proposed interchange with Alternate Route 66 (i.e.; IL-53)	Potential Section 4(f) – historic section and Scenic Byway (NPS)	Unavoidable crossing of IL-53. Interchange refinement options will be considered per coordination with IL SHPO.	B1, B3
Cedar Lake	West Creek	Proximity to protected species habitat	Threatened and endangered species habitat issues (barn owl)	Outside 2,000-foot corridor; Tier Two environmental field studies to confirm extent of impact (if any).	B3
	Permanent water feature	Crossed by right-of-way	Water resources impact	Avoidance unlikely. Impact minimization will be focus for detailed design in Tier Two.	B3

[1] Historic properties in the Study Area have not been fully identified, as discussed in Section 2.3.2.

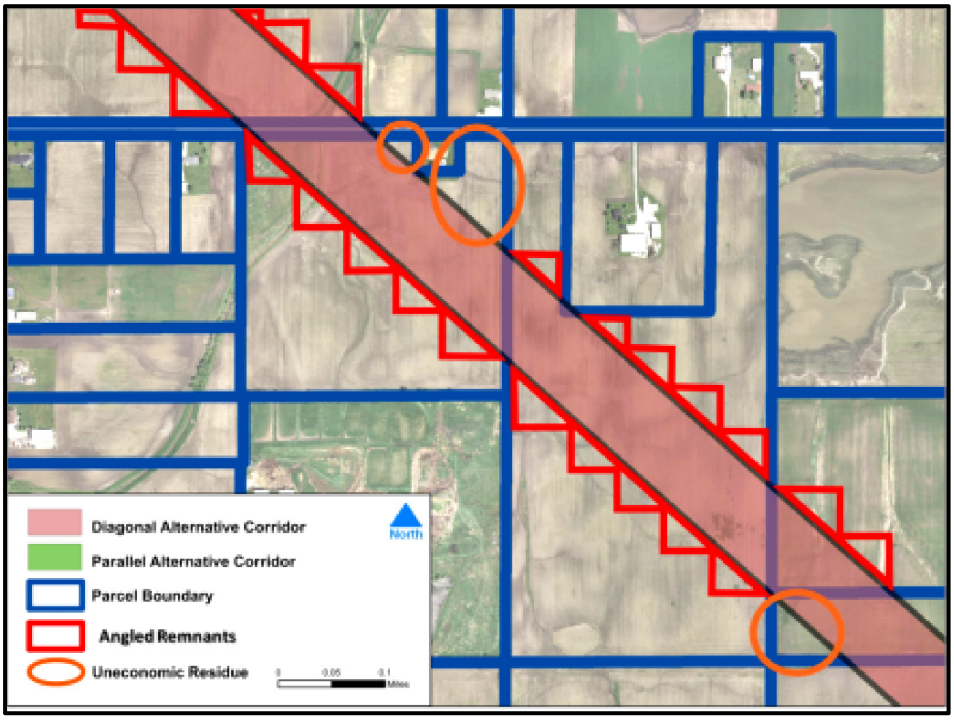
A review of Table 2-6 indicates that the northern refined Corridors A1, A2, A3, A3S1, A4, and B1 would result in a number of substantial and unavoidable community based impacts. These alternative corridors would also have several potential unavoidable ecological and special lands (Section 4(f)) impacts as indicated in Table 2-7. Some of the potential ecological and Section 4(f) impacts associated with Corridors B1 and B3 in Wilmington and Cedar Lake appear to be unavoidable. Feasible and prudent alternative corridor alignment refinements will continue to be evaluated to avoid or minimize these impacts to the extent practical.

2.4.3.5 Diagonal Property Severances

In addition, substantial portions of the Study Area are covered by rural land classified as agricultural. As discussed in Section 2.5.3.1, the agricultural community, and specifically the Will County and Lake County Farm Bureaus preferred to avoid diagonal property acquisitions from agricultural land to the extent possible. Diagonal alternatives generally create remnant parcels that are separated from the remainder of an intact parcel. Rectangular or square parcels of agricultural land are more valuable to the property owner since farming equipment operates most efficiently when it is utilized in large rectangular or square fields. Smaller angled parcels remaining from diagonal property severances can result in more difficult access for farm machinery and have diminished utility.

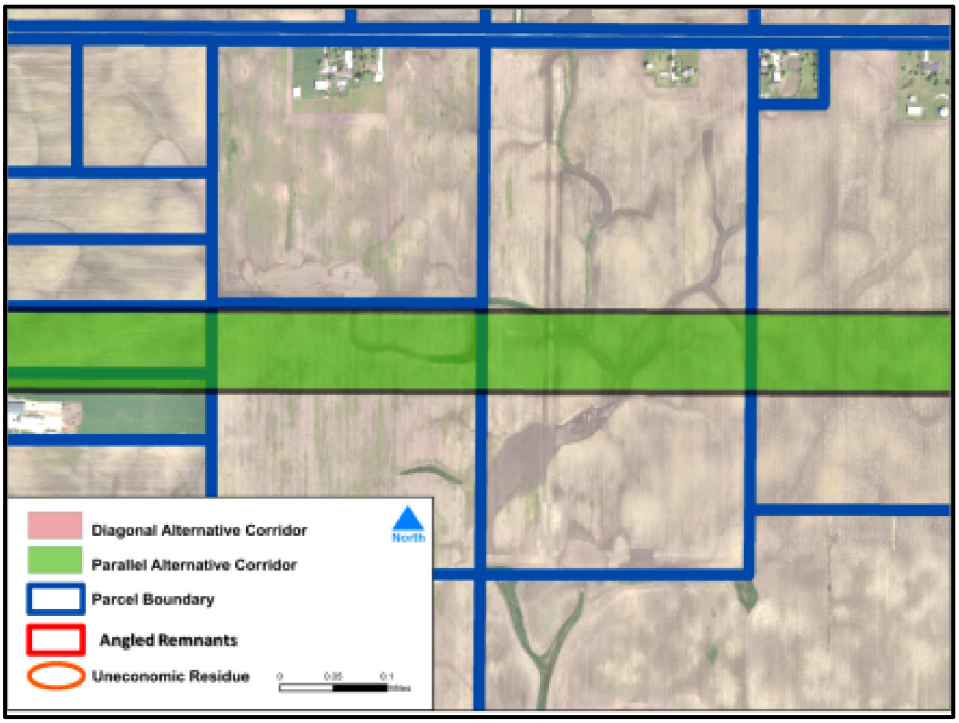
As shown in the example in Figure 2-25, alternative corridors with alignments that are diagonal to established property lines creates angular and irregular shapes that are considered to have substantially less utility as agricultural land. In addition, the irregularly shaped remnant parcels often have access issues that create additional cost to the property owner associated with additional field entrances, field tiles, drainage culverts, fences, etc.

Figure 2-25. Land Use Impacts for Diagonal Alternative Corridors



As shown in the example in Figure 2-26, alternative corridors whose alignments are perpendicular or parallel to property lines generally produce fewer remaining angled parcels, and less potential for uneconomic remnant parcels.

Figure 2-26. Land Use Impacts for Non-Diagonal Alternative Corridors



On this basis, each of the alternatives with a predominant diagonal orientation, which includes Corridors A3, A4, A3S1, and B1, are less desirable since they would result in a higher instance of angled parcel acquisitions and higher potential for uneconomical remnant parcels in agricultural areas as shown in Table 2-8.

Table 2-8. Agricultural Land Diagonal Parcel Severances per Corridor

A1	A2	A3	A4	A3S1	B1	B3
0	0	132	137	120	264	0

2.4.3.6 Potential Cultural Resource Impacts

Potential cultural resource impacts associated with the refined alternative corridors were reviewed. Cultural resources include above ground historic buildings and sites, and identified below ground archeological and historic resources. Since potential cultural resource impacts can be direct and/or indirect based on proximity, potential impacts were reviewed for the 400-foot working alignment, and for the 2,000-foot wide alternative corridor, plus an additional 2-mile wide area of potential effects (APE).

The potential impacts were measured in number of individual structures and sites to show the effect on known aboveground historic resources (buildings, structures, objects, or sites) and belowground archaeological resources located within the working alignment

for each alternative corridor. These known cultural resources include those properties listed in or eligible for inclusion in the National Register of Historic Places (NRHP). Potential impacts to the NRHP-listed Alternate Route 66 were measured in miles for each working alignment. High-probability areas for archaeological resources (Archaeological Research Program (ARP) sites) were measured in acres. The summary of potential cultural resources for the refined alternative corridors is shown in Table 2-9.

Table 2-9. Potential Cultural Resource Impacts

CULTURAL RESOURCES [1]	ALTERNATIVE						
	A1	A2	A3	A3S1	A4	B1	B3
Within the 2,000-foot corridor plus an additional two mile wide Buffer Area							
NRHP-listed and eligible (each)	5	4	3	4	3	4	3
NRHP-listed Route 66 (miles)	2.4	2.4	2.4	2.5	2.4	1.7	1.7
Archaeological Sites (each)	5	0	4	4	7	5	4
ARP Sites (acres)	12.8	51.2	51.2	51.2	4.7	12.8	51.2
Within the 400-foot wide Working Alignment							
NRHP-listed and eligible (each)	1	1	1	1	1	1	1
NRHP-listed Route 66 (miles)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Archaeological Sites (each)	0	0	1	1	0	0	1
ARP Sites (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0

[1] Refer to Section 2.3.2 (Study Area Constraints) for sources of cultural resource information.

There are many other structures 50 years of age or older throughout the Study Area in both Illinois and Indiana. Some of these structures may be eligible for the NRHP. Therefore, any of the corridors under consideration in this Tier One DEIS could adversely affect one or more historic properties (in addition to any impacts identified as part of this study). It is not possible to assess the magnitude or extent of each alternative's overall impacts on historic properties at this stage of the NEPA process. Additional information will be developed regarding impacts to historic properties through the remaining Tier One EIS process. Field surveys will be conducted during the Tier Two NEPA studies to identify any resources more than 50 years of age that were not previously identified or evaluated for NRHP eligibility.

2.4.3.7 Second Round Evaluation Summary

As established with the initial round evaluation, Corridors A1, A2, A3, A3S1, A4, B1, and B3 would meet the project Purpose and Need. However, the alternative corridor refinements and more detailed second round evaluation led to the conclusion that alternative corridors with "A" and/or "1" terminus points (Corridors A1, A2, A3, A3S1, A4, and B1) would have disproportionately higher potential socioeconomic and environmental impacts.

Although the northern alternative corridors ("A" and "1" connection points) that are close to population centers have the best overall travel performance, including attracting the most traffic, they would result in greater impacts to the environment. The second round evaluation, which included refinements to these alternative corridors where practical and feasible to minimize impacts, concluded that the northern alternative corridors would have greater impacts to homes and businesses, as well as the natural environment due to

higher levels of development and fewer opportunities for locating the route without causing impacts. Below is a summary of the findings for the second round evaluation with respect to the northern alternative corridors:

- Corridors A1 and A2 had approximately three times the wetland impacts of Corridor B3.
- Corridors A1 and A2 had 1.6 to three times the forested area impacts of Corridor B3.
- The "A" alternative corridors include a 1 mile long bridge at the Des Plaines River, approximately twice the length and construction cost of a similar Kankakee River crossing for the "B" alternative corridors.
- Corridor A1 impacts two to six times the number of major utility facilities of any other alternative corridor.
- The northern alternative corridors in general have limited opportunity for future expansion due to density of the existing built environment. The alignments for Corridors A1 and B1 were refined in several places to avoid numerous building impacts, and are severely restricted for consideration of future expansion or accommodation of multimodal opportunities.
- Corridors A1 and B1 had up to three times the building impacts of any other alternative corridor. Corridor B3 had the lowest number of building impacts of any alternative corridor.
- Corridors A1 and B1 had the highest impacts to nature areas including a 5,000 foot impact to Homestead Acres Park, a Section 4(f) resource in the Town of St. John, Indiana.
- The northern alternative corridors are less compatible with local community development plans.
- Although Corridor A1 shows the best overall travel performance, the overall impacts and associated costs with achieving a viable route results in Corridor A1 as being relatively undesirable.

By comparison to Corridor A1, Corridor B3 is located in the central portion of the Study Area, which is less densely developed than the northern portion. Corridor B3 has moderate travel performance when compared to the northern alternative corridors, but it would have notably lower impacts than all other alternative corridors by having the second highest total of green shaded boxes and the fewest number of orange shaded boxes. The second-round evaluation found that Corridor B3 has the best balance of minimizing impact and travel performance and had the highest overall support from project stakeholders. Below is a summary of the findings for the second round evaluation with respect to Corridor B3.

- Corridor B3 had lower forest impacts compared to the northern alternative corridors.
- Corridor B3 impacts to recreational facilities are limited to a crossing of three trails.

- Corridor B3 would require a bridge over the Kankakee River that is 2,500 feet long and approximately half the construction cost of the 1 mile long Des Plaines River crossing associated with the "A" alternative corridors.
- Although there are property impacts with Corridor B3, they are notably less than the property impacts associated with the northern alternative corridors.
- Corridor B3 would serve as a more regional route, which would increase truck volumes as compared to the northern alternative corridors.
- Corridor B3 has 5.2 miles of potential major utility impacts, which is less than one-half of the potential impacts associated with the northern alternative corridors other than Corridor A3S1.

Each of the alternative corridors that include a diagonal component (Corridors A3, A4, A3S1, and B1) would result in a higher instance of uneconomic remnant parcels in both agricultural areas and developing community areas due to angled parcel acquisitions, which results in smaller, less efficient parcels being created. This complicates the land acquisition and management process and has been noted as a concern from several of the stakeholders, including the farm bureaus in Will and Lake counties.

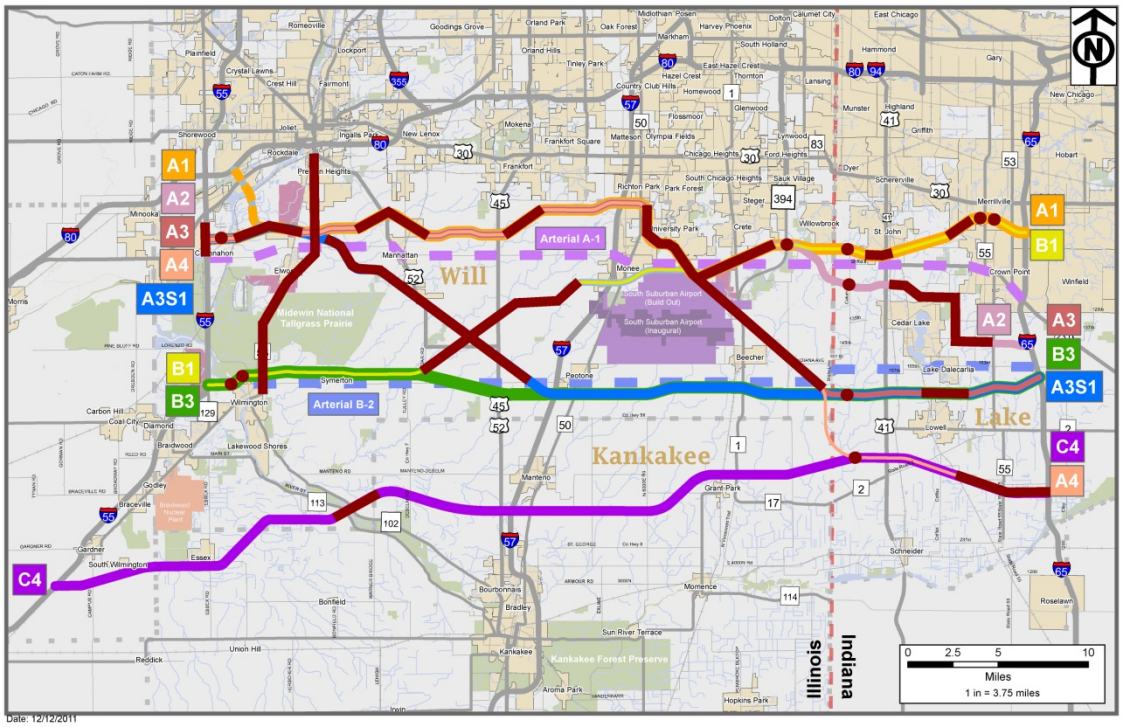
With respect to previously identified cultural resources, the areas of high sensitivity are predominately located in more urban areas which are more associated with the northern alternative corridors. In the western portion of the Study Area, the NRHP-listed Alternate Route 66 (IL-53) is a significant historic resource which is potentially affected by each of the second round alternative corridors where they would cross IL-53. This resource traverses the Study Area from the City of Wilmington north to Joliet and will require continuing Section 106 consultation to minimize impacts. The higher concentrations of historic resources in Indiana are found near the communities of Crown Point, Lowell, Cedar Lake, and Lake Dalecarlia.

Corridors B1 and B3 have potential impacts to threatened and endangered species including the Illinois state-listed ear-leaf fox glove found along the UP railroad tracks running north-south from Joliet to the City of Wilmington. While the habitat falls within these corridors, no plants were identified at the location of the railroad right-of-way based on field studies completed in 2011 for the Chicago to St. Louis High Speed Rail project. In addition, the ear-leaf fox glove has similar habitat to the rattlesnake master, which is the host plant for the state endangered Eryngium stem-borer. Surveys also indicated no presence of an established rattlesnake master population.

The alternative corridors would not impact known Federal threatened and endangered species based on the evaluation of working alignments within each alternative corridor. However, federally listed threatened and endangered species may be present within the alternative corridors. Federally listed species that have the potential to occur within the alternative corridors include the Snuffbox mussel, Sheepnose mussel, Indiana bat, and eastern prairie fringed orchid. Potential impacts to these species and their habitats within the alternative corridors will be determined during the Tier Two NEPA studies.

Figure 2-27 illustrates the location of the impact areas along each of the alternative corridors. As shown on the figure, Corridor B3, when compared to the other alternative corridors has the least amount of impact area along its alignment.

Figure 2-27. Alternative Corridor Impact Areas



On the above basis, Corridor B3 has the highest overall support from project stakeholders and the lowest overall socioeconomic and environmental impacts. The second-round evaluation concluded with a finding that Corridor B3 represents the best combination of acceptable travel performance and minimization of socioeconomic and environmental impacts. Therefore, Corridor B3 was recommended to be carried forward from the second round evaluation with the No-Action Alternative for detailed evaluation in the Tier One DEIS.

2.4.3.8 Additional Factors

Potential future multi-purpose corridor use was assessed at the end of the second round evaluation. While multi-purpose corridor use is not part of the Purpose and Need for the project, it was assessed for informational purposes in response to comments from resource agencies, as supporting information for the recommended alternative corridors to be carried forward.

Financial viability will be an important factor in subsequent stages of project development, but was not used as a basis for screening alternative corridors for the reasons described below.

Multi-Purpose Corridor Use

It is recognized that conditions may change within the 2040 planning horizon, or that needs may arise beyond the 2040 planning horizon. As such, transportation system alternatives should strive to not preclude multi-purpose use as they are brought forth by other sponsoring agencies where feasible and cost effective. Corridors A1 and B3 were compared with respect to their ability to accommodate multi-purpose uses. The multi-purpose uses could include different modes or utilities, such as non-motorized trails, greenways, fixed guide-way transit facilities, freight railroad facilities, and electric, gas, oil, and fiber optic transmission facilities. In most cases, these multi-purpose uses would likely require additional right-of-way beyond what would be required for a roadway facility alone. The comparison was made with respect to their flexibility to accommodate multi-purpose uses based on adjacent land use considerations.

Corridor A1 would have comparatively "low" flexibility with respect to accommodating other potential multi-purpose uses based on the more constrained adjacent right-of-way due to development and sensitive land uses, as discussed in Section 3.3.2. Corridor A1 is in the northern portion of the Study Area, which is more fully developed than the central or southern portions of the Study Area.

More constrained areas for Corridor A1 include Channahon, University Park, Crete, St. John, Schererville, and Merrillville. For instance, the majority of the Corridor A1 in Schererville and St. John is proposed to utilize a utility corridor to minimize residential impacts. The available space within the utility corridor is less than 215 feet wide, which would accommodate an urban highway section and a potential multi-use trail but would be inadequate for adding other transportation elements with a wider footprint. Furthermore, the ability for future lane expansion of the urban highway section would be limited without substantial building displacements and other substantial impacts occurring. In addition, Corridor A1 conflicts with current land use plans for what is now relatively open space, particularly in the northern portion of Manhattan's planning area.

On this basis, Corridor B3 had comparatively "high" flexibility with respect to potential multi-purpose uses given its location in the less developed central portion of the Study Area.

Financial Viability

Financial viability was not used as a criterion for deciding which alternative corridors to carry forward for detailed study in the Tier One DEIS. However, a preliminary assessment of short and long term economic impacts of the no-toll and tolled scenarios is used as part of the more detailed analysis for the alternative corridors carried forward (see Section 3.2.4). More detailed analysis of financial viability will be developed during the Tier Two NEPA studies as the alternative corridors and subsequent working alignments are further developed.

2.4.4 Additional Alternative Corridors to be Carried Forward

The preliminary recommendation to carry forward Corridor B3 for detailed study in the Tier One EIS was discussed with project stakeholders during coordination meetings leading up to, and at, Public Information Meeting #3 in February 2012. This provided further

opportunity for stakeholders and the general public to comment on the overall alternative corridors development and evaluation process, and the Corridor B3 recommendation.

2.4.4.1 Stakeholder Input

The following summarizes the most common stakeholder comments received at coordination meetings leading up to Public Information Meeting #3, as well as during and after Public Meeting #3. A more detailed summary of Public Information Meeting #3 and the stakeholder comments received is included in Section 4.0.

CMAP suggested that a northern alternative corridor, being south of the most developed portions of the Study Area, would have a more positive effect on regional mobility and improving local system deficiencies. CMAP requested that an additional northern alternative corridor be carried forward in the Tier One DEIS.

Representatives of the Midewin National Tallgrass Prairie (a unit of the US Forest Service (USFS)/US Department of Agriculture (USDA)), the Environmental Law and Policy Center, and the Openlands Project expressed concern with potential impacts to the Midewin National Tallgrass Prairie from Corridor B3 and requested that the "A" or "C" connection points with I-55 be further evaluated. Similarly, the City of Wilmington expressed concerns with potential impacts associated with the Corridor B3 connection to I-55, and requested further evaluation in the Widows Road area by crossing the Kankakee River at a more westerly location. Several suggestions were made to further evaluate a northern alternative corridor similar to Corridor A3S1 with a less diagonal orientation.

Concerns regarding potential impacts associated with Corridor B3 were expressed by the Towns of Cedar Lake and Lowell. Both towns requested that Corridor B3 be moved south of Lowell in order to minimize impacts. This request was also included in many of the individual public comments (and letters) received at Public Information Meeting #3.

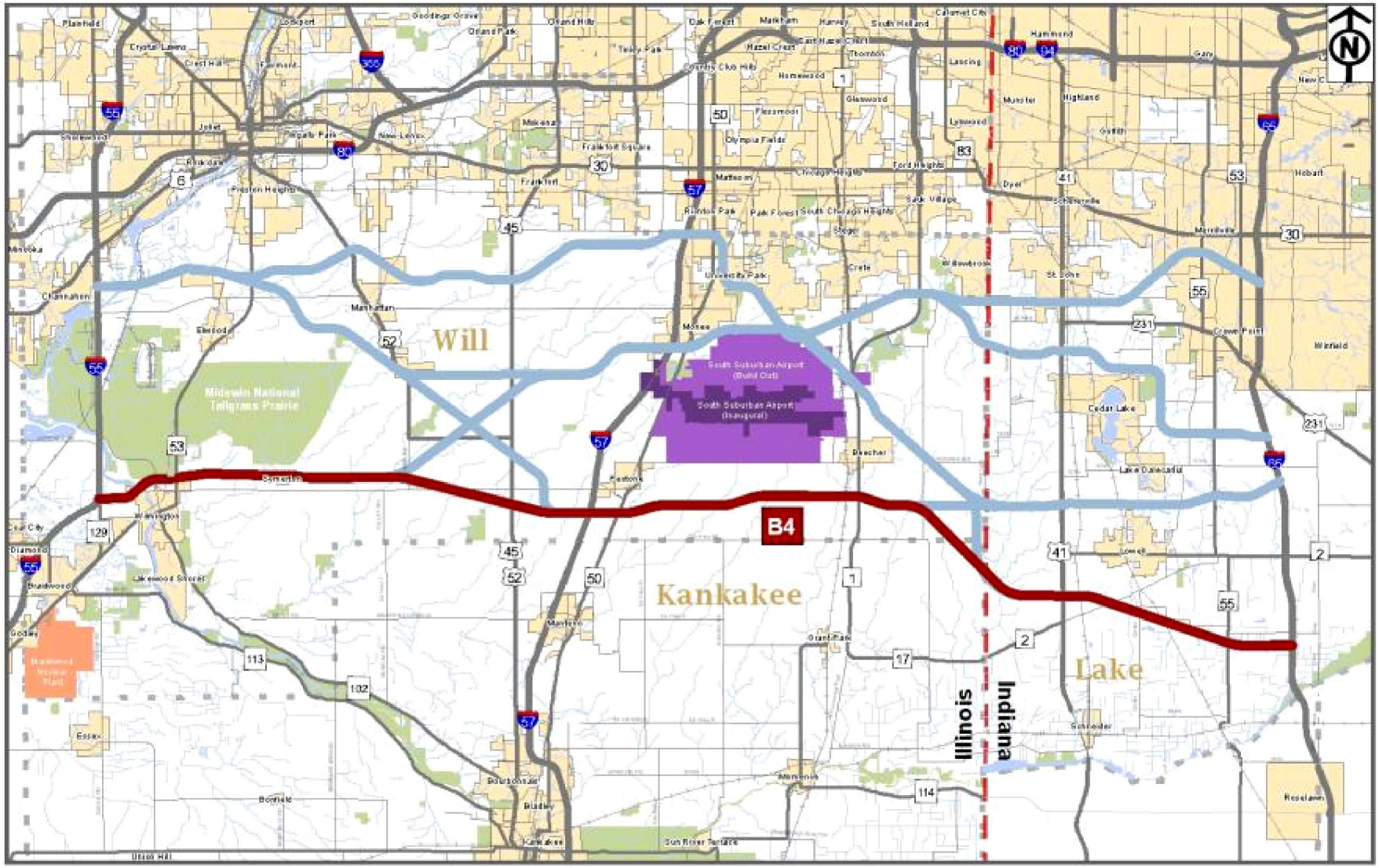
The SSMMA and the Village of Crete expressed concerns that Corridor B3 might not adequately serve the Study Area and requested further evaluation of a potential northern alternative corridor that would avoid the impacts at GSU and the Town of St. John.

2.4.4.2 Identification of Additional Alternative Corridors

In order to further evaluate concerns expressed by Towns of Cedar Lake and Lowell, a new alternative corridor was identified that essentially combines Corridor B3 west of the Illinois/Indiana state line, with Corridor C4 east of the state line. Following the alternative corridors naming convention, this new alternative corridor is named Corridor B4 and is shown in Figure 2-28.

As noted above, a number of requests were received from multiple organizations and from members of the general public to further evaluate a northern alternative corridor based predominantly on travel benefits. In order to further evaluate a northern alternative corridor that avoids or minimizes the previously discussed major impact areas, a new alternative corridor was identified that attempts to avoid these impact areas near

Figure 2-28. Corridor B4



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Manhattan, University Park, Crown Point, Schererville, and St. John as discussed in Sections 3.3.1 and 3.3.2. This alternative corridor is a combination of previously considered Corridors A3S1, B1, and A3 that incorporates an "A" connection point with I-55, a "3" connection point at I-65, a recommended Corridor A3S1/B1 connection refinement, and stays north of the SSA. Following the naming convention, this new alternative corridor is named Corridor A3S2 and is shown in Figure 2-29.

2.4.4.3 Evaluation of Additional Alternative Corridors

On the above basis, and as discussed in Section 2.5.3.2, the identified new Corridors B4 and A3S2 were evaluated to determine how they compare to the alternative corridors previously considered with respect to travel performance and/or socioeconomic and environmental impacts. Table 2-10 and Table 2-11 present a comparison of travel performance for Corridors B4 and A3S2 with the 10 initial alternative corridors.

Table 2-12 presents a comparison of socioeconomic and environmental impacts for Corridors B4 and A3S2, with the 10 initial alternative corridors. It is noted that Table 2-12 reflects the initial round impact results for Corridors C4, A-1, and B-2, and the second round impact results for Corridors A1, A2, A3, A3S1, A4, B1, and B3 based on the refinements made to these alternative corridors as part of the second round evaluation.

Travel Performance

Similar to the process discussed in Section 2.5.2.2, travel performance for the new Corridors B4 and A3S2 was evaluated using both non-tolled and tolled scenarios. As shown in Table 2-10 and Table 2-11, Corridors B4 and A3S2 would improve travel performance as compared to the 2040 No-Action Alternative for all travel performance measures. Comparing Corridors B4 and A3S2 to the 10 initial alternative corridors, neither performs as well as the northern-most alternative corridors, but they perform similar to Corridor B3.

In comparing Corridors B4, A3S2, and B3, they generally demonstrate similar travel performance improvement over the 2040 No-Action Alternative with the main exception being that Corridor B4 is projected to carry approximately 20 percent and 25 percent less average daily total traffic and truck traffic than Corridors A3S2 and B3 respectively. However, Corridors B4, A3S2, and B3 all address the purpose and need evaluation criteria, showing improvement as compared to the 2040 No-Action Alternative.

Socioeconomic and Environmental Impacts

In reviewing Table 2-12, Corridor B4 is similar to Corridor B3 and would be among the least impacting alternative corridors overall as compared to the 10 initial alternative corridors, although it had the highest floodplain impacts. Corridor A3S2 is a mix of comparatively high impacts for some criteria and low impacts for others. Corridor A3S2 had comparatively high impacts to existing business parks, intermodal facilities, wetlands, and water bodies. Corridor A3S2 had comparatively low impacts with respect to threatened and endangered species and overall building impacts.

Figure 2-29. Corridor A3S2

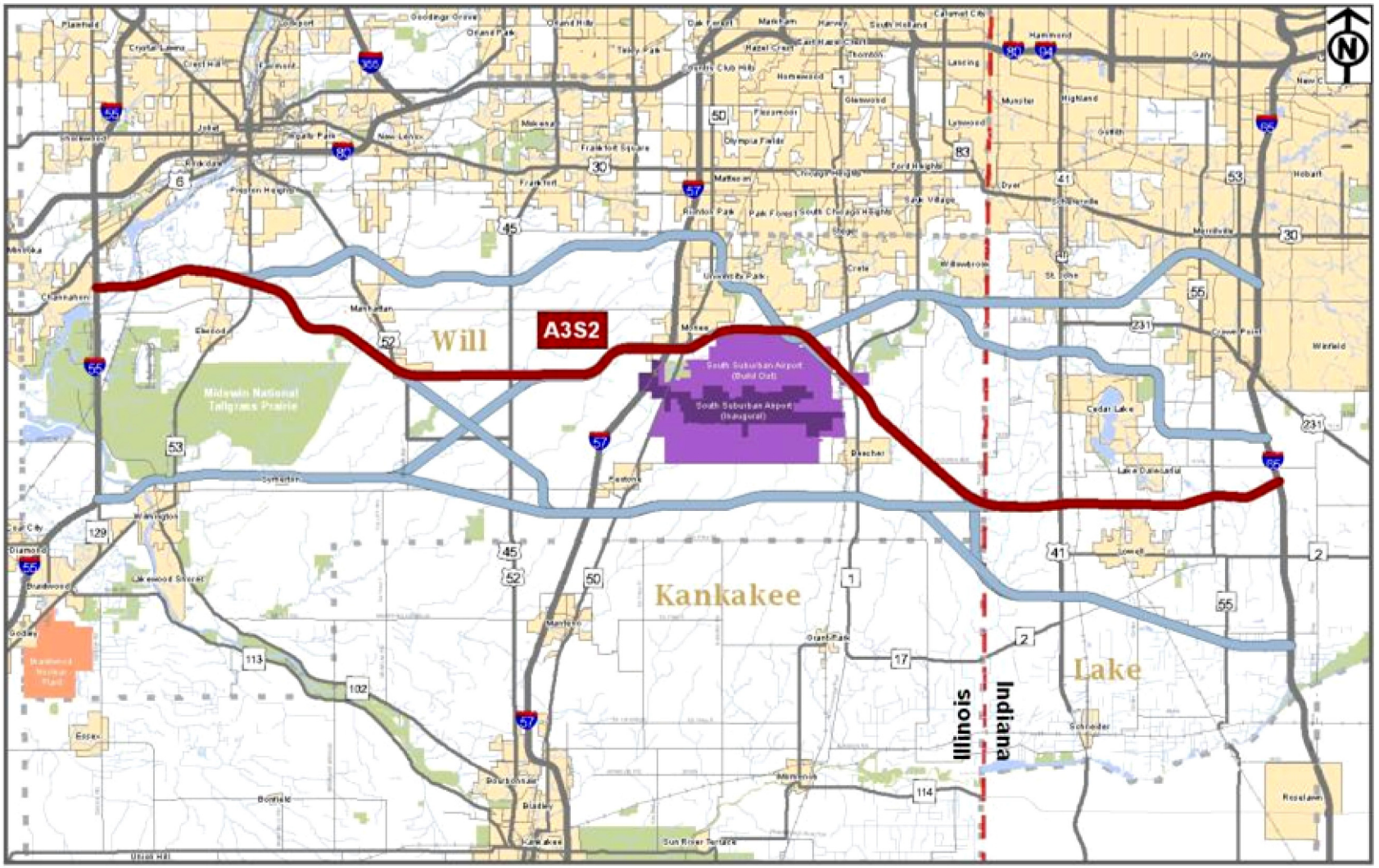

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Table 2-10. Travel Performance Matrix with Corridors B4 and A3S2 (Non-Tolled)

Travel Performance Measure	2040 No Build	CORRIDOR											
		A1	A2	A3	A3S1	A4	B1	B3	B4	A3S2	C4	Arterial A-1	Arterial B-2
Improve Regional Mobility													
Address Projected Growth in Regional E-W Travel													
Region East-West Vehicle Hours of Travel	3,747,000	-17,000	-14,000	-13,000	-15,000	-9,000	-12,000	-12,000	-9,000	-11,000	-3,000	0	0
South Sub-Region East-West Vehicle Hours of Travel	890,000	-37,000	-32,000	-30,000	-24,000	-27,000	-27,000	-21,000	-15,637	-22,825	-11,000	0	0
Reduce Regional Travel Delay / Improve Regional Travel Time													
Region Vehicle Hours of Travel	6,899,000	-16,000	-15,000	-17,000	-17,000	-18,000	-18,000	-14,000	-13,000	-14,000	-8,000	1,000	1,000
South Sub-Region Vehicle Hours of Travel	1,579,000	-36,000	-28,000	-26,000	-20,000	-23,000	-26,000	-19,000	-13,985	-20,393	-11,000	1,000	1,000
Improve Access to Jobs													
Number of Jobs Accessible within 30 Minutes	1,792,000	30,000	24,000	21,000	21,000	20,000	26,000	18,000	17,000	18,000	10,000	1,000	1,000
Alleviate Local System Congestion and Improve Local System Mobility													
Address Projected Growth in Local Traffic and Reduce Local Travel Delan / Improve Local Travel Times													
Study Area Congested VMT on Arterials	2,039,000	-209,000	-150,000	-224,000	-138,000	-261,000	-200,000	-106,000	-105,000	-128,000	-82,000	-82,000	-64,000
Study Area Vehicle Hours of Travel on Arterials	255,200	-15,200	-13,900	-13,200	-13,100	-14,000	-14,500	-9,100	-9,300	-11,300	-5,800	0	-600
Average Daily Traffic All Vehicles on Build Alt.	-	48,000	41,000	41,000	36,000	39,000	40,000	35,000	28,000	34,000	20,000	20,000	8,000
Average Daily Traffic Trucks on Build Alt.	-	24,000	21,000	21,000	21,000	18,000	18,000	20,000	15,000	20,000	10,000	5,000	2,000
Address Lack of Cont. Higher Func. Class E-W Routes													
New Lane Miles of Interstate	-	201	212	214	210	223	193	187	195	202	231	0	0
New Lane Miles of Other Principal Arterials	-	0	0	0	0	0	0	0	0	0	0	102	106
Provide for Efficient Movement of Freight													
Provide More Efficient Freight Movement													
Region Truck Hours of Travel	859,000	-4,900	-5,300	-5,800	-6,500	-6,100	-5,300	-5,400	-4,800	-5,100	-2,800	200	200
South Sub-Region Truck Hours of Travel	254,500	-18,600	-14,500	-13,900	-13,500	-10,800	-11,500	-11,800	-7,700	-13,300	-4,700	600	600

Highest Travel Benefit: **Lowest Travel Benefit:**

Table 2-11. Travel Performance Matrix with Corridors B4 and A3S2 (Tolled) [1, 2]

Travel Performance Measure	2040 No Build	Toll Traffic	CORRIDOR											
			A1	A2	A3	A3S1	A4	B1	B3	B4	A3S2	C4	Arterial A-1	Arterial B-2
Improve Regional Mobility														
Address Projected Growth in Regional E-W Travel														
Region East-West Vehicle Hours of Travel	3,747,000	25% retained	-6,000	-4,900	-4,600	-5,300	-3,200	-4,200	-4,200	-3,200	-3,900	-1,100	0	0
		75% retained	-14,500	-11,900	-11,100	-12,800	-7,700	-10,200	-10,200	-7,700	-9,400	-2,600		
South Sub-Region East-West Vehicle Hours of T	890,000	25% retained	-13,000	-11,600	-10,500	-8,400	-9,500	-9,500	-7,400	-5,600	-8,100	-3,900	0	0
		75% retained	-31,500	-28,100	-25,500	-20,400	-23,000	-23,000	-17,900	-13,600	-19,600	-9,400		
Reduce Regional Travel Delay / Improve Regional Travel Time														
Region Vehicle Hours of Travel	6,899,000	25% retained	-6,400	-6,000	-6,800	-6,800	-7,200	-7,200	-5,600	-5,200	-5,600	-3,200	1,000	1,000
		75% retained	-14,400	-13,500	-15,300	-15,300	-16,200	-16,200	-12,600	-11,700	-12,600	-7,200		
Sosuth Sub-Region Vehicle Hours of Travel	1,579,000	25% retained	-14,400	-11,200	-10,400	-8,000	-9,200	-10,400	-7,600	-5,600	-8,400	-4,400	1,000	1,000
		75% retained	-32,400	-25,200	-23,400	-18,000	-20,700	-23,400	-17,100	-12,600	-18,900	-9,900		
Improve Access to Jobs														
Number of Jobs Accessible within 30 Minutes	1,792,000		30,000	24,000	21,000	21,000	20,000	26,000	18,000	17,000	18,000	10,000	1,000	1,000
Alleviate Local System Congestion and Improve Local System Mobility														
Address Projected Growth in Local Traffic and Reduce Local Travel Delan / Improve Local Travel Times														
Study Area Congested VMT on Arterials	2,039,000	25% retained	-94,000	-68,000	-101,000	-62,000	-117,000	-90,000	-48,000	-47,000	-58,000	-37,000	-82,000	-64,000
		75% retained	-188,000	-135,000	-202,000	-124,000	-235,000	-180,000	-95,000	-95,000	-115,000	-74,000		
Study Area Vehicle Hours of Travel on Arterials	255,200	25% retained	-6,800	-6,300	-5,900	-5,900	-6,300	-6,500	-4,100	-4,200	-5,100	-2,600	0	-600
		75% retained	-13,700	-12,500	-11,900	-11,800	-12,600	-13,100	-8,200	-8,400	-10,200	-5,200		
Average Daily Traffic All Vehicles on Build Alt.	-	25% retained	12,000	10,300	10,300	9,000	9,800	10,000	8,800	7,000	8,500	5,000	20,000	8,000
		75% retained	36,000	30,800	30,800	27,000	29,300	30,000	26,300	21,000	25,500	15,000		
Average Daily Traffic Trucks on Build Alt.	-	25% retained	6,000	5,300	5,300	5,300	4,500	4,500	5,000	3,800	5,000	2,500	5,000	2,000
		75% retained	18,000	15,800	15,800	15,800	13,500	13,500	15,000	11,300	15,000	7,500		
Address Lack of Cont. Higher Func. Class E-W Routes														
New Lane Miles of Interstate	-		201	212	214	210	223	193	187	195	202	231	0	0
New Lane Miles of Other Principal Arterials	-		0	0	0	0	0	0	0	0	0	0	102	106
Provide for Efficient Movement of Freight														
Provide More Efficient Freight Movement														
Region Truck Hours of Travel	859,000	25% retained	-2,000	-2,100	-2,300	-2,600	-2,400	-2,100	-2,200	-1,900	-2,000	-1,100	200	200
		75% retained	-4,400	-4,800	-5,200	-5,900	-5,500	-4,800	-4,900	-4,300	-4,600	-2,500		
South Sub-Region Truck Hours of Travel	254,000	25% retained	-7,400	-5,800	-5,600	-5,400	-4,300	-4,600	-4,700	-3,100	-5,300	-1,900	600	600
		75% retained	-16,700	-13,000	-12,500	-12,200	-9,600	-10,300	-10,600	-6,900	-12,000	-4,200		

[1] The length of New Lane Miles of Limited-Access Highway and Other Principal Arterials does not provide a direct measure of travel benefit and is therefore not shaded.

[2] Arterial alternative corridors were only modeled as non-tolled facilities due to lack of access control making tolling impractical.

Highest Travel Benefit: **Lowest Travel Benefit:**

Table 2-12. Socioeconomic and Environmental Impact Matrix with Corridors B4 and A3S2

EVALUATON CRITERIA	CORRIDORS											
	A1	A2	A3	A3S1	A4	B1	B3	B4	A3S2	C4	Arterial A-1	Arterial B-2
Alignment Length (miles)	49.1	53.0	52.6	50.3	55.9	48.4	46.8	48.8	51.1	57.8	46.2	46.4
Wetland Impacts (acres)												
PEM	33.0	29.3	30.0	29.7	20.4	27.2	16.2	6.9	32.9	6.3	42.8	13.0
PFO	14.8	15.8	10.1	7.0	7.5	9.2	2.5	0.0	7.0	6.6	6.8	7.6
PSS	1.5	4.9	0.8	4.6	0.8	0.7	0.0	0.0	4.6	0.0	1.8	1.0
PUB	4.2	2.3	1.1	0.1	1.1	2.2	0.0	0.0	2.9	7.1	6.5	1.7
Other	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	10.1	10.1	0.0	12.9
Total Wetland Impacts (acres)	63.6	62.5	52.0	51.5	40.0	42.4	21.7	9.9	57.6	30.1	57.8	36.3
Total Threatened and Endangered Species Impacts (acres)	0.0	0.0	0.0	0.1	0.0	3.2	3.2	3.2	0.0	4.3	13.9	3.1
Total Floodplains Impacts (acres)	118.6	128.6	148.8	211.3	368.2	214.4	253.0	469.2	223.7	383.5	196.5	186.5
Total Stream Impacts (miles)	2.3	2.5	3.0	3.2	4.9	3.1	3.2	5.0	3.8	8.7	3.1	2.8
Total Impaired Streams Impacts (miles)	2.2	2.2	2.0	2.5	2.4	1.8	2.0	2.5	2.2	3.1	2.3	1.8
Water Bodies (Rivers, Lakes, Ponds) (acres)	16.7	17.7	22.2	20.4	15.6	4.0	9.7	3.0	22.6	24.3	7.7	10.9
Parks/Nature Preserves/Natural Areas (acres)												
Total Parks Impacts (acres)	39.0	20.2	20.2	0.0	20.2	18.8	0.0	0.0	0.0	2.1	2.0	0.0
Nature Areas Impacts (acres)	13.0	13.0	13.0	13.9	13.0	6.9	6.9	6.9	13.9	6.4	64.2	5.7
Total Forested Areas Impacts (acres)	69.6	146.5	77.8	68.6	37.0	43.2	43.3	2.5	73.7	13.2	46.8	52.1
Total Trail Impacts (miles)	3.6	3.5	3.6	0.3	3.6	0.8	0.2	0.2	0.9	5.5	2.6	0.2

Table 2-12. Socioeconomic and Environmental Impact Matrix with Corridors B4 and A3S2 (continued)

EVALUATON CRITERIA	CORRIDORS											
	A1	A2	A3	A3S1	A4	B1	B3	B4	A3S2	C4	Arterial A-1	Arterial B-2
Farmland (acres)												
Corn (acres)	696.5	652.2	843.3	1036.1	1035.5	752.9	940.2	1093.3	823.1	1044.7	181.0	509.5
Soy (acres)	733.9	825.4	824.7	815.7	927.6	709.0	806.7	907.5	838.3	783.9	187.4	446.8
Other (acres)	558.6	548.3	494.6	285.6	441.0	480.1	279.0	198.6	401.7	261.7	483.0	391.1
Total Farmland (acres)	1989.0	2025.9	2162.6	2137.5	2404.1	1942.1	2025.9	2199.3	2063.1	2090.3	851.3	1347.5
Special Use (acres)												
Landfill (each)	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cemeteries (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	2.8
Business Parks (acres)	38.3	38.3	44.2	0.0	44.2	41.0	2.7	2.7	55.6	0.0	21.1	7.8
Intermodals (acres)	85.1	85.1	89.2	46.8	89.2	38.3	0.0	0.0	102.2	0.0	14.0	0.0
Major Utility - Pipelines (miles)	15.3	14.0	13.0	3.4	13.2	6.3	2.3	2.7	5.2	1.9	29.0	2.6
Major Utility - Power Lines (miles)	8.4	1.0	0.7	2.0	0.8	11.6	5.3	5.6	0.9	0.5	0.6	0.6
Affected Buildings (each)												
Residential (each)	96.0	77.0	54.0	41.0	46.0	234.0	41.0	44.0	59.0	81.0	568.0	134.0
Commercial (each)	36.0	25.0	15.0	22.0	18.0	30.0	8.0	7.0	8.0	1.0	98.0	18.0
Agricultural and Farms (each)	33.0	44.0	32.0	54.0	44.0	44.0	43.0	63.0	24.0	37.0	8.0	8.0
Unknown (each)	42.0	58.0	50.0	49.0	55.0	29.0	29.0	28.0	45.0	77.0	39.0	36.0
Total	207.0	204.0	151.0	166.0	163.0	337.0	121.0	142.0	136.0	196.0	713.0	196.0

Least Impacting: **Most Impacting:**

Figure 2-30 through Figure 2-32 show the general location of impacts to floodplains, streams, and wetlands by project section for Corridors A1, A2, A3, A4, A3S1, A3S2, B1, B3, and B4. These figures are representative only since some rounding of numbers was necessary for these figures due to the imprecise location of section break lines. As a result, there are some differences in the total impact numbers as compare to Table 2-12. The actual total impacts for each alternative corridor are included in Table 2-12.

Table 2-13 compares the agricultural land diagonal parcel severances for Corridors A3S2, B3, and B4. Corridors A3S2 and B4 would have a notably higher instance of angled parcel acquisitions and higher potential for uneconomical remnant parcels in agricultural areas.

Table 2-13. Agricultural Land Diagonal Parcel Severances per Corridor

A3S2	B3	B4
81	0	83

Table 2-14 compares the potential impacts for Corridors A3S2, B3, and B4 on known cultural resources. The potential impacts within the 400-foot working alignment are nearly the same for all three alternative corridors. However, as noted above, there are many other properties and/or structures within the Study Area that may be eligible for the NRHP. It is not possible to completely assess the magnitude or extent of overall impacts on historic properties for each alternative corridor at this stage of the NEPA process. Field surveys will be conducted during Tier Two NEPA studies to identify any resources more than 50 years of age that were not previously identified or evaluated for NRHP eligibility.

Table 2-14. Potential Cultural Resource Impacts

CULTURAL RESOURCES [1]	CORRIDOR		
	A3S2	B3	B4
Within the 2,000-foot corridor plus an additional two mile wide Buffer Area			
NRHP-listed and eligible (each)	3	3	3
NRHP-listed Route 66 (miles)	2.4	1.7	1.7
Archaeological Sites (each)	4	4	4
ARP Sites (acres)	51.2	51.2	51.2
Within the 400-foot wide Working Alignment			
NRHP-listed and eligible (each)	1	1	1
NRHP-listed Route 66 (miles)	0.1	0.1	0.1
Archaeological Sites (each)	1	1	0
ARP Sites (acres)	0.0	0.0	0.0

[1] Refer to Section 2.3.2 (Study Area Constraints) for sources of cultural resource information.

2.4.4.4 Summary of Additional Alternative Corridors Evaluation

Based on the above analysis for Corridors B3, B4, and A3S2, Corridor B3 is the least impacting, followed by Corridor B4 and then Corridor A3S2. All three alternative corridors show very similar travel performance, and for all of the purpose and need evaluation criteria show improvement over the 2040 No-Action Alternative. Corridor B4

Figure 2-30. Floodplain Impacts by Alternative Corridor Section

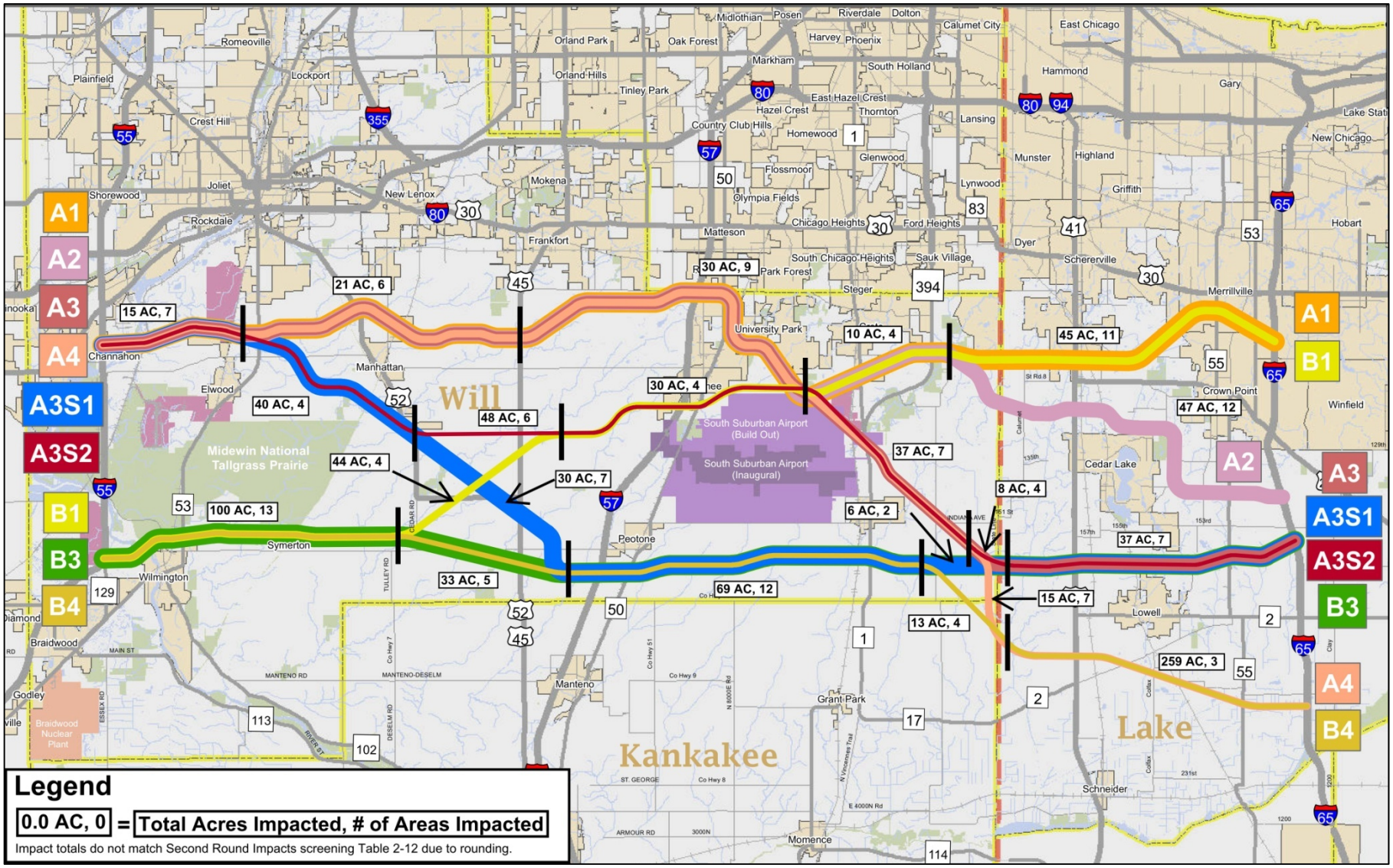


Figure 2-31. Stream Impacts by Alternative Corridor Section

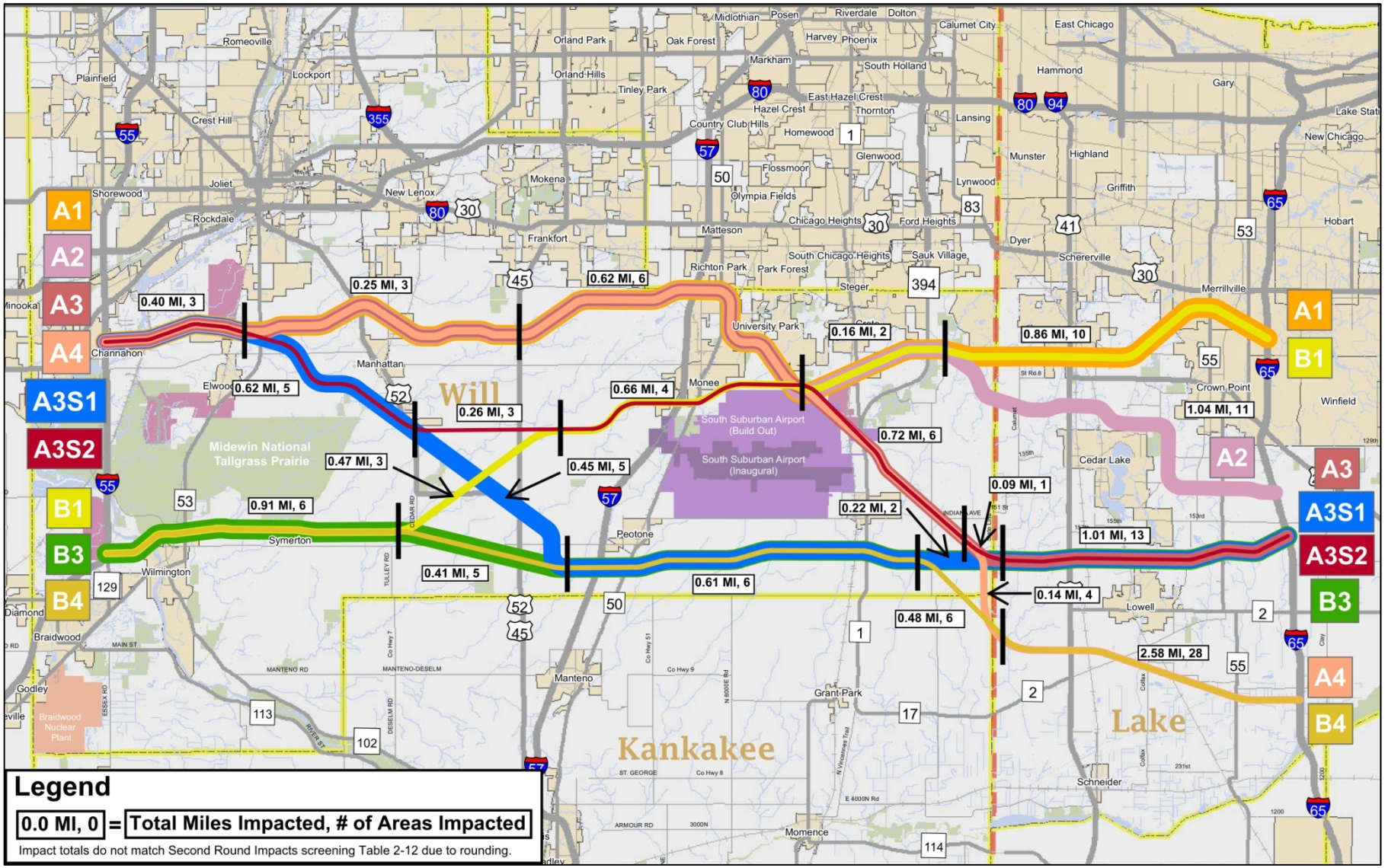
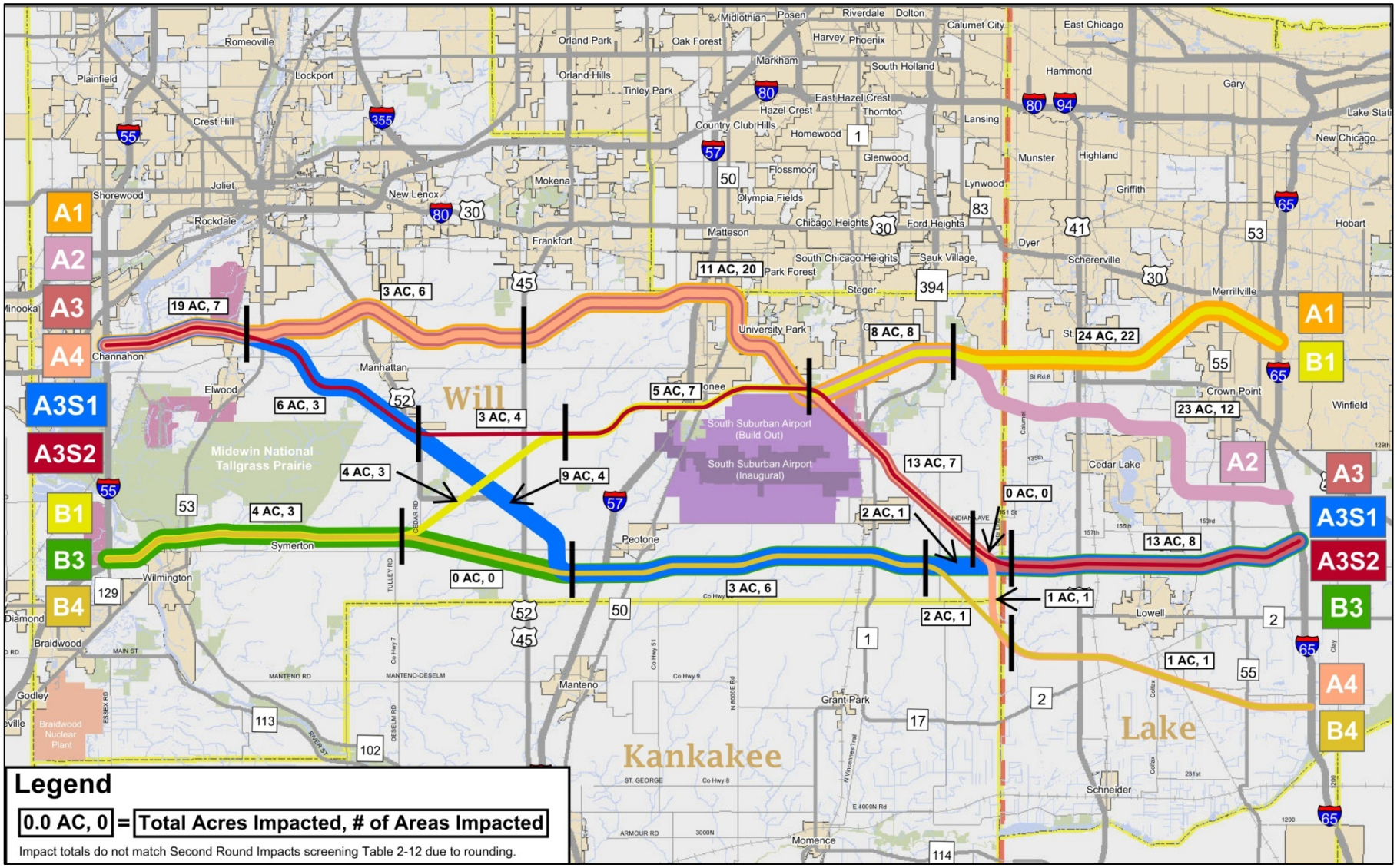


Figure 2-32. Wetland Impacts by Alternative Corridor Section



is projected to carry less average daily total traffic and truck traffic than Corridor B3 and Corridor A3S2. On this basis, it is recommended that Corridors B3, B4, and A3S2 be carried forward along with the No-Action Alternative for detailed analysis in the Tier One DEIS.

With regard to flexibility for potential multi-purpose corridor use, Corridor A3S2 would have comparatively "low" flexibility similar to Corridor A1 through the northern more developed portions of the corridor in Illinois, such as west of IL-53 and near Manhattan, Monee, Crete, and Goodenow. However, Corridor A3S2 would share the comparatively "high" flexibility similar to Corridor B3 through the central, less developed portions of the corridor in Indiana. On this basis, Corridor A3S2 is considered to have overall comparatively "medium" flexibility for potential multi-purpose corridor use. Corridor B4 is considered to have comparatively "high" flexibility for potential multi-purpose corridor use, similar to Corridor B3 with which it shares a corridor alignment through most of the Study Area.

2.5 Conclusion – Alternative Corridors to be Carried Forward for Further Analysis

Each step of the evaluation process was used to collectively form the basis for a determination of the alternative corridors to be carried forward for detailed evaluation in the Tier One DEIS.

The evaluation of travel performance, and socioeconomic and environmental impacts were key considerations in the overall alternative corridors development and evaluation process. In addition, extensive input from project stakeholders with respect to alternative corridor acceptability as well as suggested alternative corridor refinements was considered as part of the second round evaluation. Flexibility with respect to potential multi-purpose corridor use was also considered for informational purposes in response to comments from resource agencies.

Based on the above, and in consideration of the entire evaluation process, Corridors A3S2, B3, and B4 have been carried forward along with the No-Action Alternative for more detailed analysis.

2.6 Description of the Alternative Corridors Carried Forward

The following provides a general description of each of the alternative corridors to be carried forward – Corridors A3S2, B3, and B4.

Corridor A3S2 is an east-west oriented corridor that generally traverses the north portion of the Study Area in Illinois and proceeds in a southeastern direction through the central portion of the Study Area in Indiana. Corridors B3 and B4 are also east-west oriented corridors that generally traverse the central portion of the Study Area in Illinois from I-55 to a point west of the Illinois/Indiana state line. From there, Corridor B4 proceeds in a southeastern direction through the southern portion of the Study Area in Indiana.

As shown in Figure 2-29, Corridor A3S2 generally connects I-55 near Channahon, Illinois, with I-65 north of Lowell, Indiana. As shown in Figure 2-18, Corridor B3 generally connects I-55 north of the City of Wilmington, Illinois, with I-65 north of the Town of Lowell, Indiana. Corridor B4 is identical to Corridor B3 from the I-55 connection point until just west of the Illinois/Indiana state line where Corridor B4 proceeds southeast as shown in Figure 2-28.

A Tier One representative working alignment for each of the alternative corridors carried forward was developed and is shown in Figure 2-33 through Figure 2-45. The 2,000 foot width alternative corridors are outlined in red. Inside the alternative corridors, the 400 foot wide working alignments are shown as discussed in 2.3.4.1 above, and are outlined in black. Additional width for the working alignments is provided at potential interchange locations. As part of each working alignment, primary interchanges are anticipated to be provided at existing Interstate highways and marked state routes. The interchange types are anticipated to vary based on traffic operational needs as well as environmental concerns and land use constraints.

Table 2-15 summarizes the potential interchange locations and types for each of the alternative corridors carried forward based on the information available for this Tier One DEIS. Additional potential interchange locations (if any) will be evaluated as part of the Tier Two NEPA studies.

Table 2-15. Potential Interchange Locations and Types

Interstate or State Route	Interchange Type		
	A3S2	B3	B4
I-55	System - Directional	System - Directional [1]	System - Directional [1]
IL-53	Local [2]	Local [2]	Local [2]
US Route 52	Local - Standard Diamond	--	--
US Route 45	Local - Standard Diamond	Local - Standard Diamond	Local - Standard Diamond
I-57	System - Cloverleaf	System - Cloverleaf	System - Cloverleaf
IL-50	--	--	--
IL-1	Local - Standard Diamond	Local - Standard Diamond	Local - Standard Diamond
US Route 41	Local - Standard Diamond	Local - Standard Diamond	Local - Standard Diamond
IN-55	Local - Standard Diamond	Local - Standard Diamond	Local - Standard Diamond
I-65	System - Directional	System - Directional	System - Directional

[1] The interchange at I-55 will operate as both a system and local road interchange with connection to IL-129.

[2] Based on coordination with the Illinois State Historic Preservation Office (SHPO), three design concepts will be evaluated due to IL-53 designation as Alternate Route 66: 1) Partial Cloverleaf (not all four quadrants) at IL-53, 2) Offset Interchange east of IL-53, and 3) No interchange.

Potential grade separations have been identified in Figure 2-33 through Figure 2-45. These potential grade separations are based on information available during the Tier One EIS and will be further evaluated in the Tier Two NEPA studies.

For Corridor B3, there are approximately 28 locations where the alignment would cross over a stream via a bridge or culvert, which includes the major crossing of the Kankakee River. There are approximately eight locations where Corridor B3 would cross existing railroads, and approximately 49 locations where it would cross an existing roadway, which includes the eight likely interchange locations. This amounts to approximately 84 potential grade separations (i.e.; bridges) that would be required for Corridor B3.

For Corridor A3S2, there are approximately 13 locations where the alignment would cross over a stream via a bridge or culvert, which includes the major crossing of the Des Plaines River. There are approximately eight locations where Corridor A3S2 would cross existing railroads, and approximately 55 locations where it would cross an existing roadway, which includes the nine likely interchange locations. This amounts to approximately 90 potential grade separations (i.e.; bridges) that would be required for Corridor A3S2.

For Corridor B4, there are approximately 27 locations where the alignment would cross over a stream via a bridge or culvert, which includes the major crossing of the Kankakee River. There are approximately eight locations where Corridor B4 would cross existing railroads, and approximately 49 locations where it would cross an existing roadway, which includes the eight likely interchange locations. This amounts to approximately 87 potential grade separations (i.e.; bridges) that would be required for Corridor B4.

In addition to the interchange locations, each potential roadway crossing for the selected corridor(s) identified as part of the Tier One Final EIS will be evaluated in the Tier Two NEPA studies to determine if a bridge will be provided to carry through traffic over or under the Illiana Corridor, or if the roadway will be disconnected with or without a frontage road. This evaluation will include coordination with transportation service providers, the communities, and other project stakeholders. The objective will be to ensure that the integrity of the existing transportation network is maintained with respect to regional and local accessibility, emergency services and other identified needs, to the extent practical and feasible. Factors in this determination will be feasibility with respect to topography and any potential socioeconomic and environmental impacts, reasonableness with respect to initial and future maintenance costs, and acceptance of any (if any) required local agency cost participation and future maintenance responsibilities.

The type and size of each bridge or culvert associated with the selected corridor(s) will also be determined in the Tier Two NEPA studies. In most cases, it is anticipated that the selected corridor(s) would cross over, rather than under, an existing railroad, however, this will be evaluated in greater detail in the Tier Two NEPA studies with respect to cost and grade constraints.

Figure 2-33. Tier One Representative Alignment – Corridor A3S2

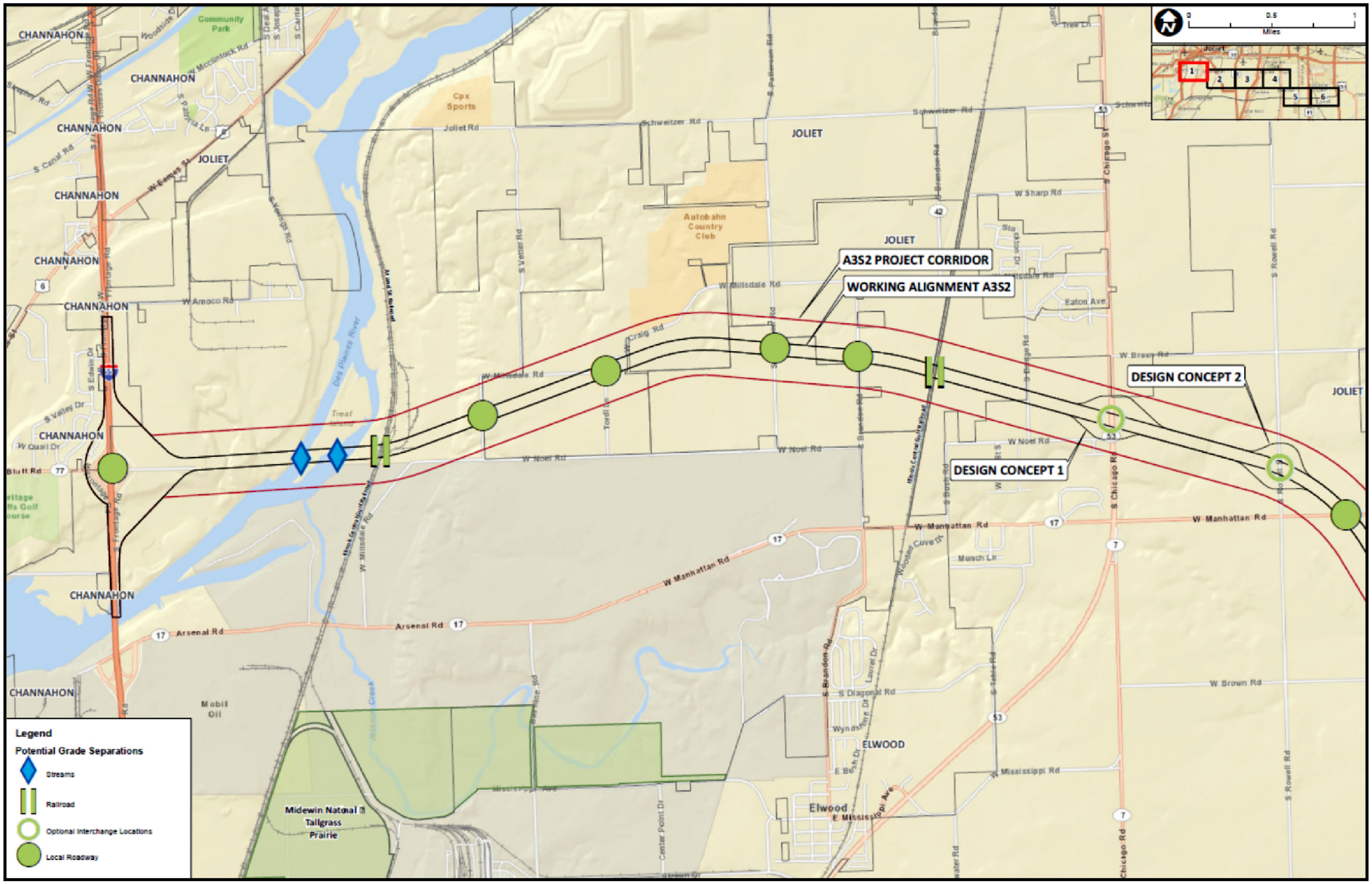


Figure 2-34. Tier One Representative Alignment – Corridor A3S2

Figure 2-35. Tier One Representative Alignment – Corridor A3S2

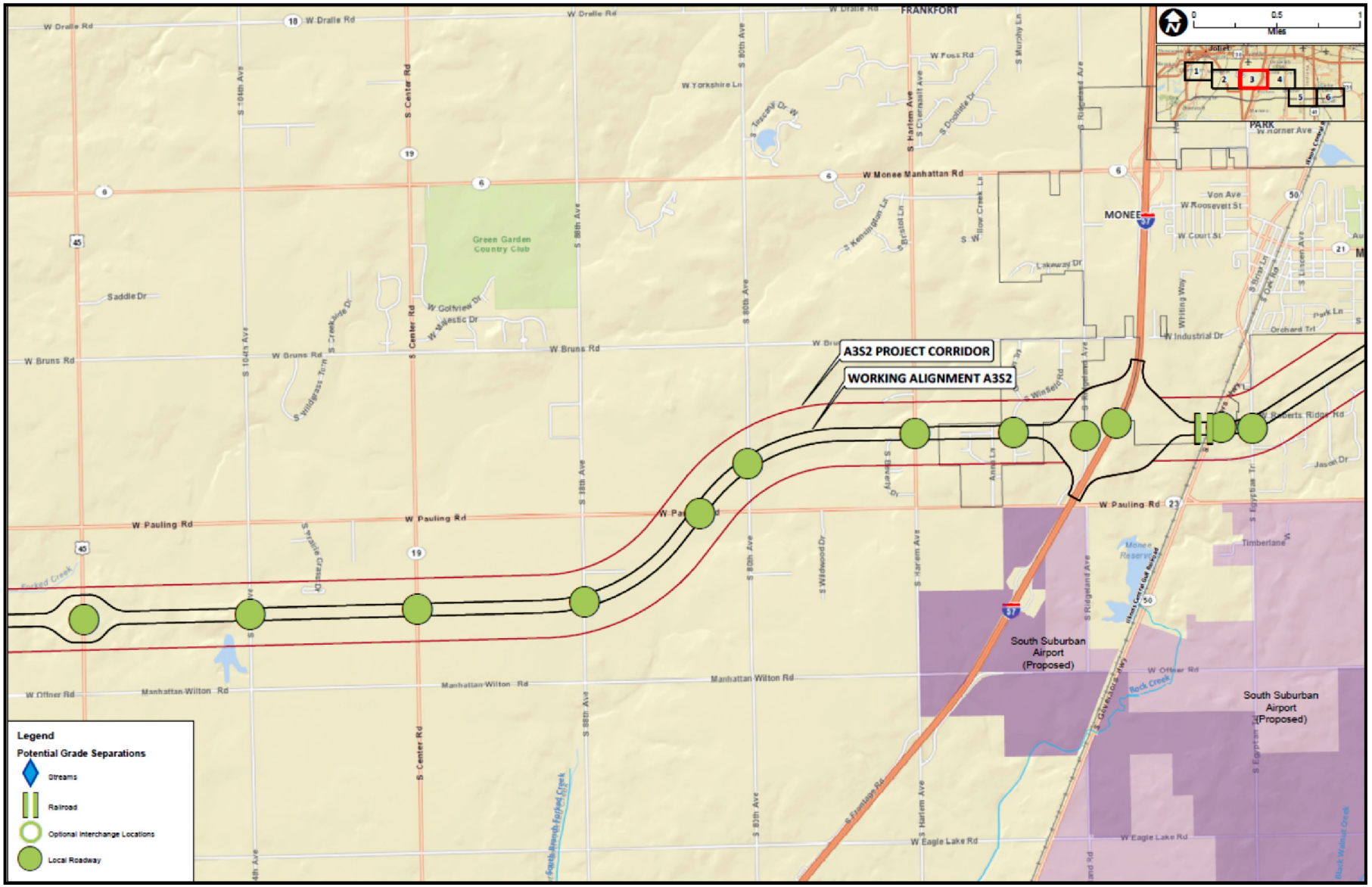


Figure 2-36. Tier One Representative Alignment – Corridor A3S2

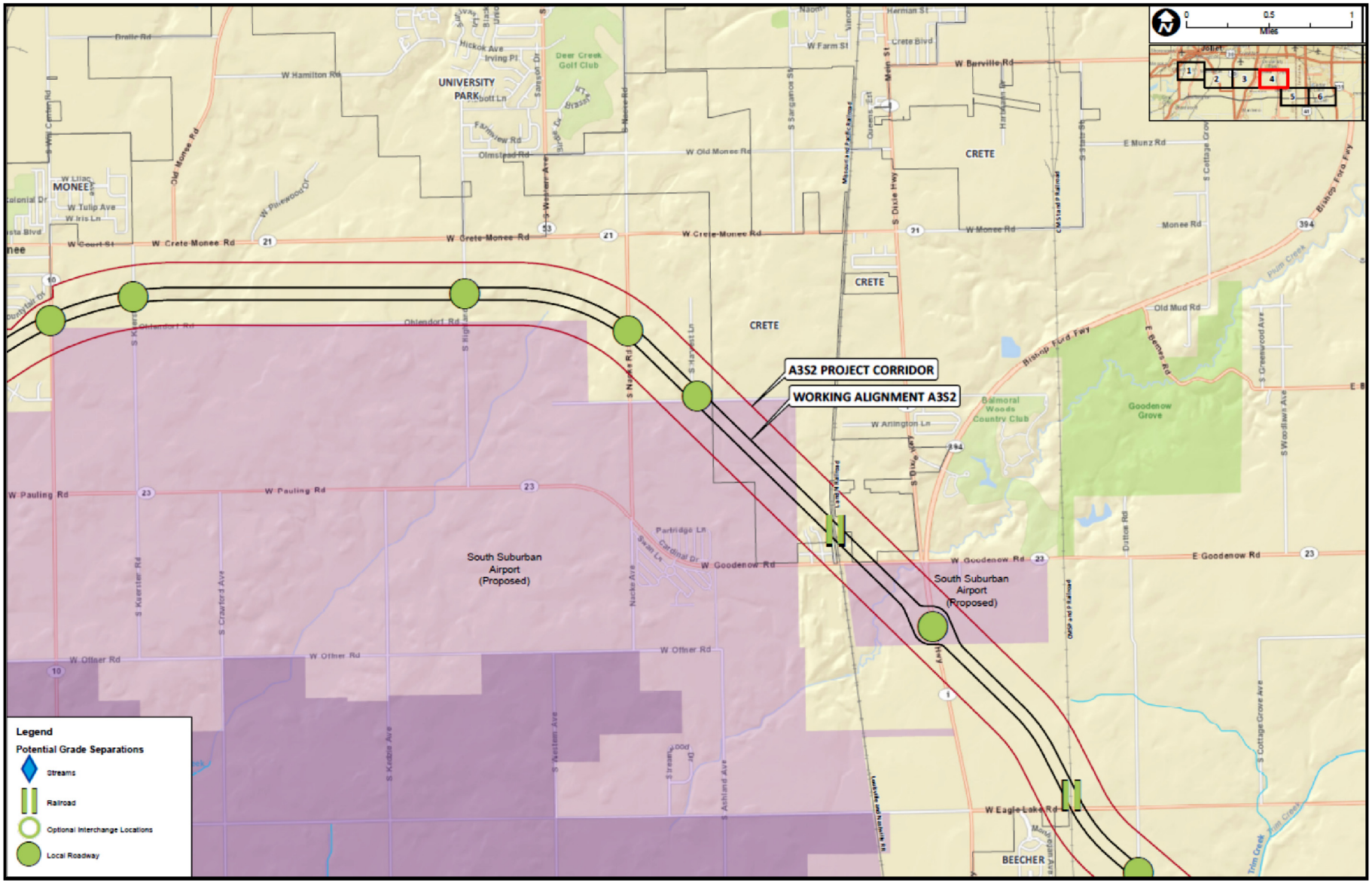


Figure 2-37. Tier One Representative Alignment – Corridor A3S2

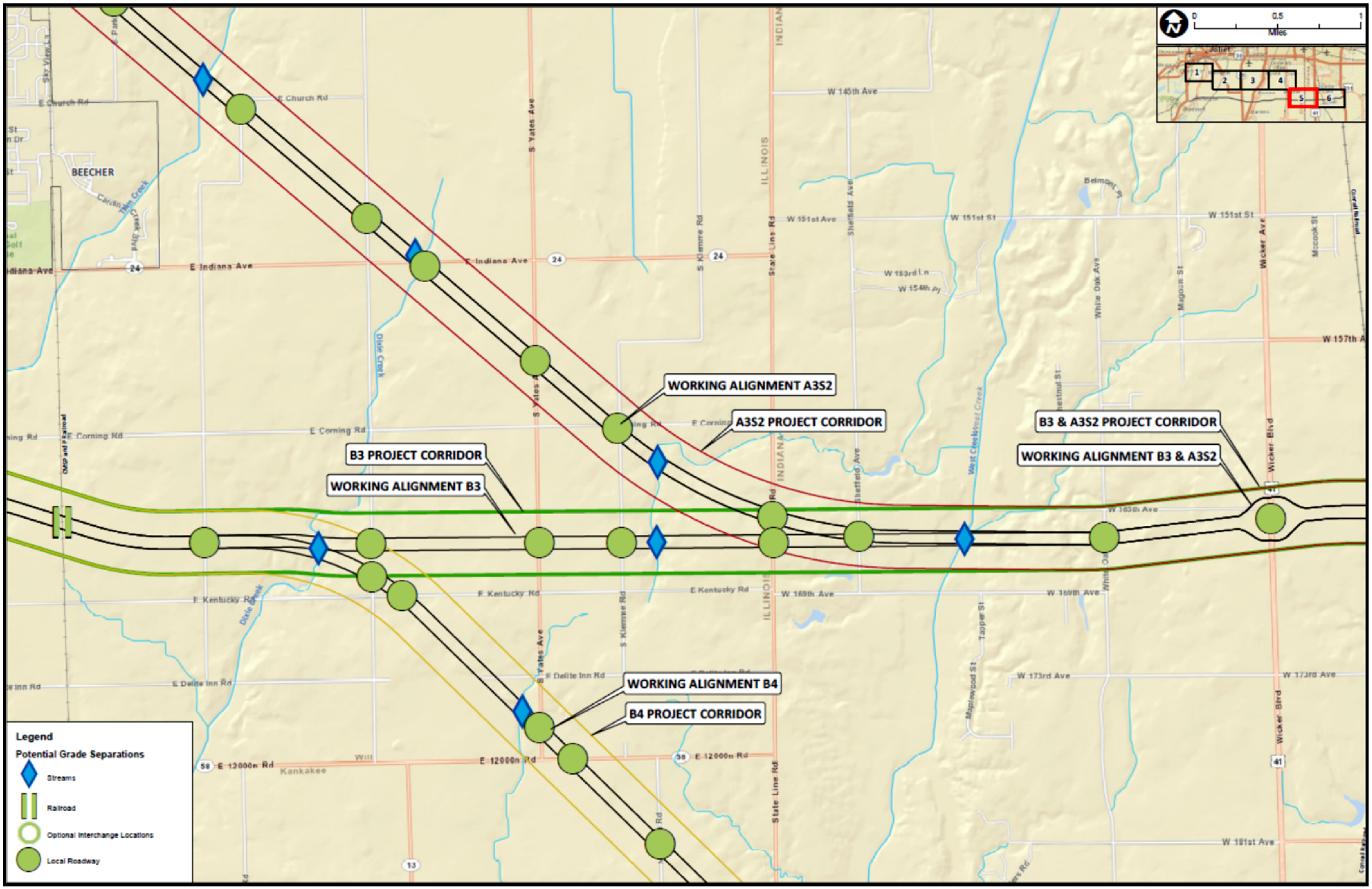


Figure 2-38. Tier One Representative Alignment – Corridor A3S2

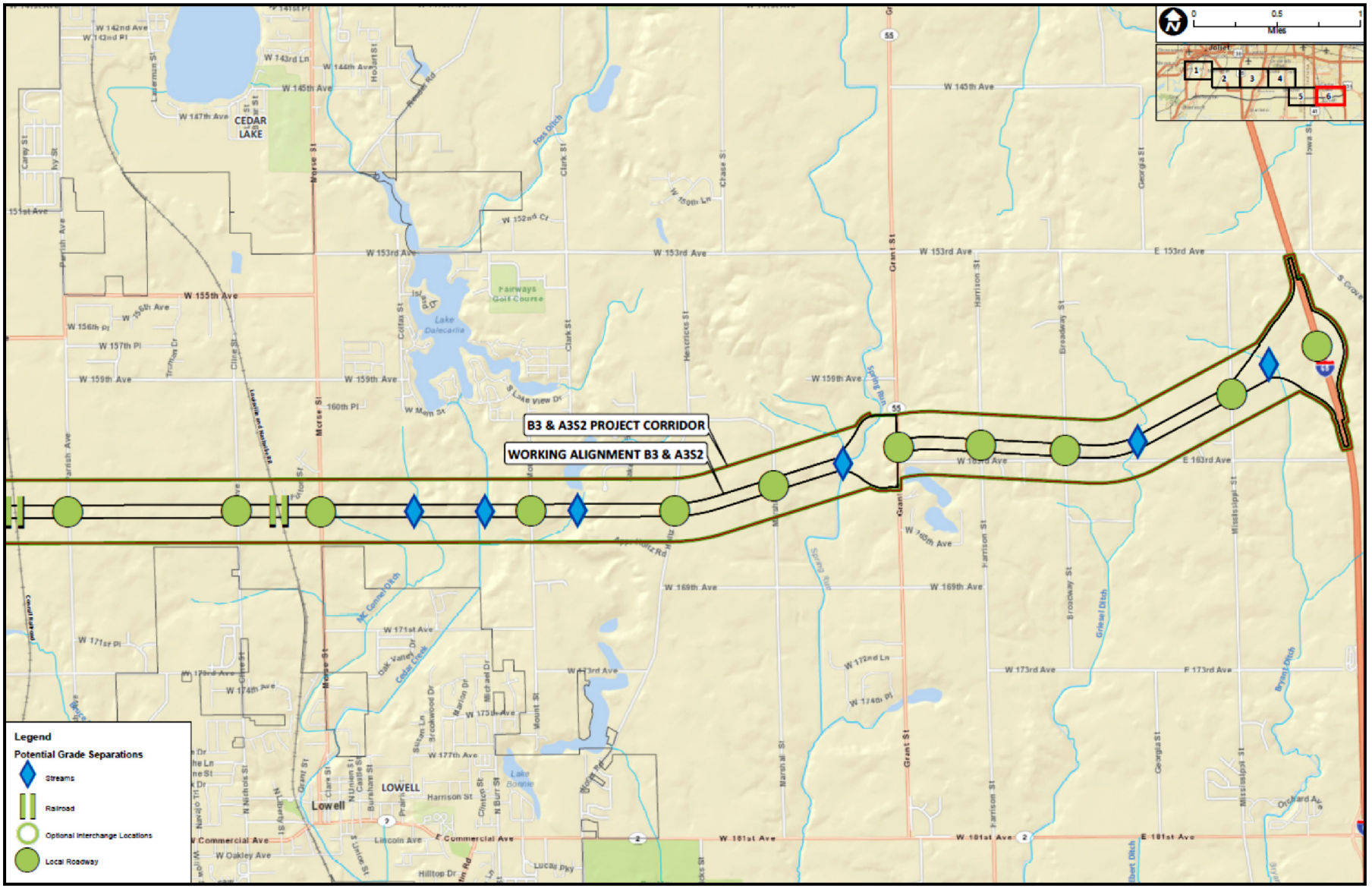


Figure 2-39. Tier One Representative Alignment – Corridors B3 and B4

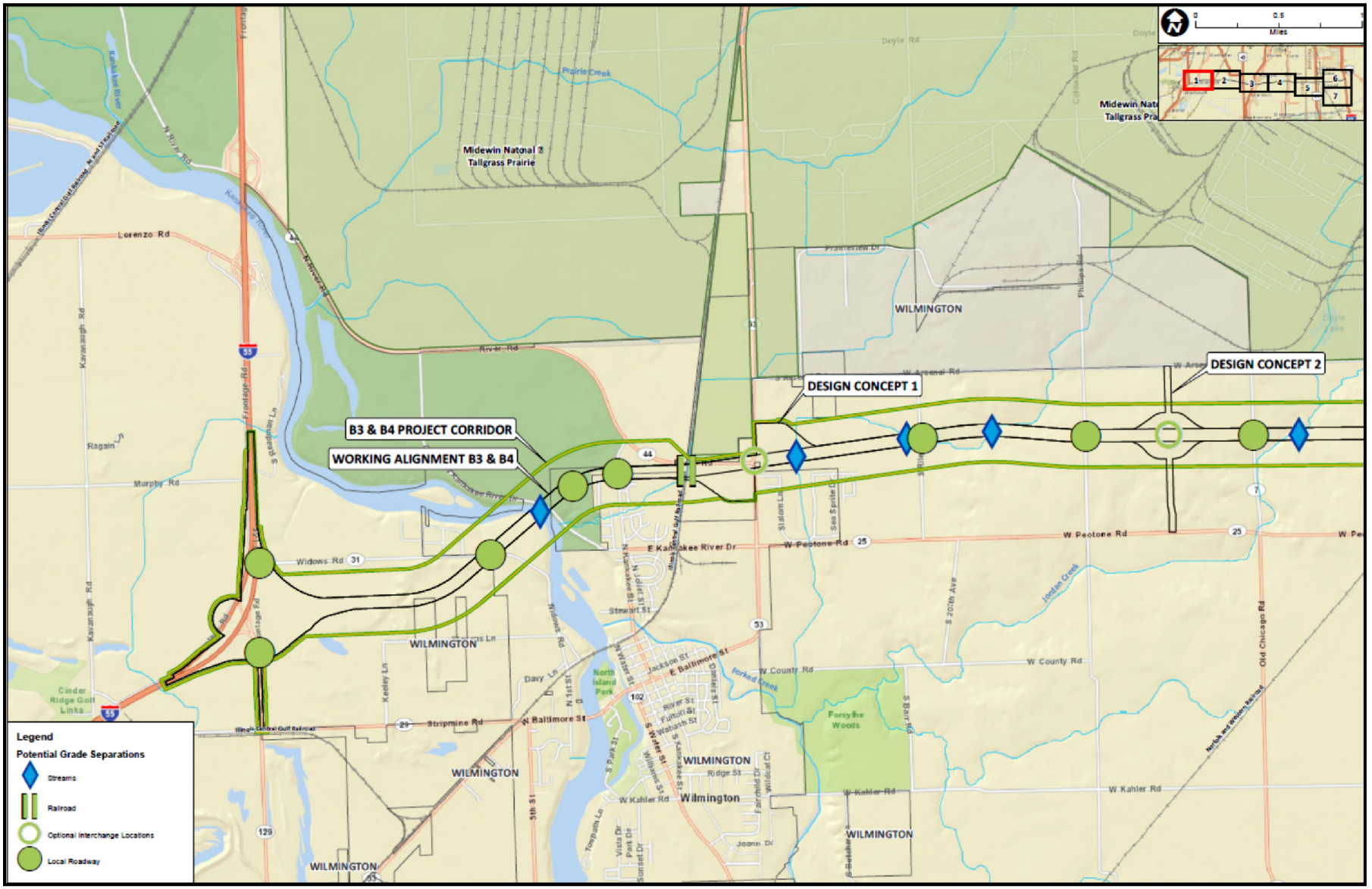


Figure 2-40. Tier One Representative Alignment – Corridors B3 and B4

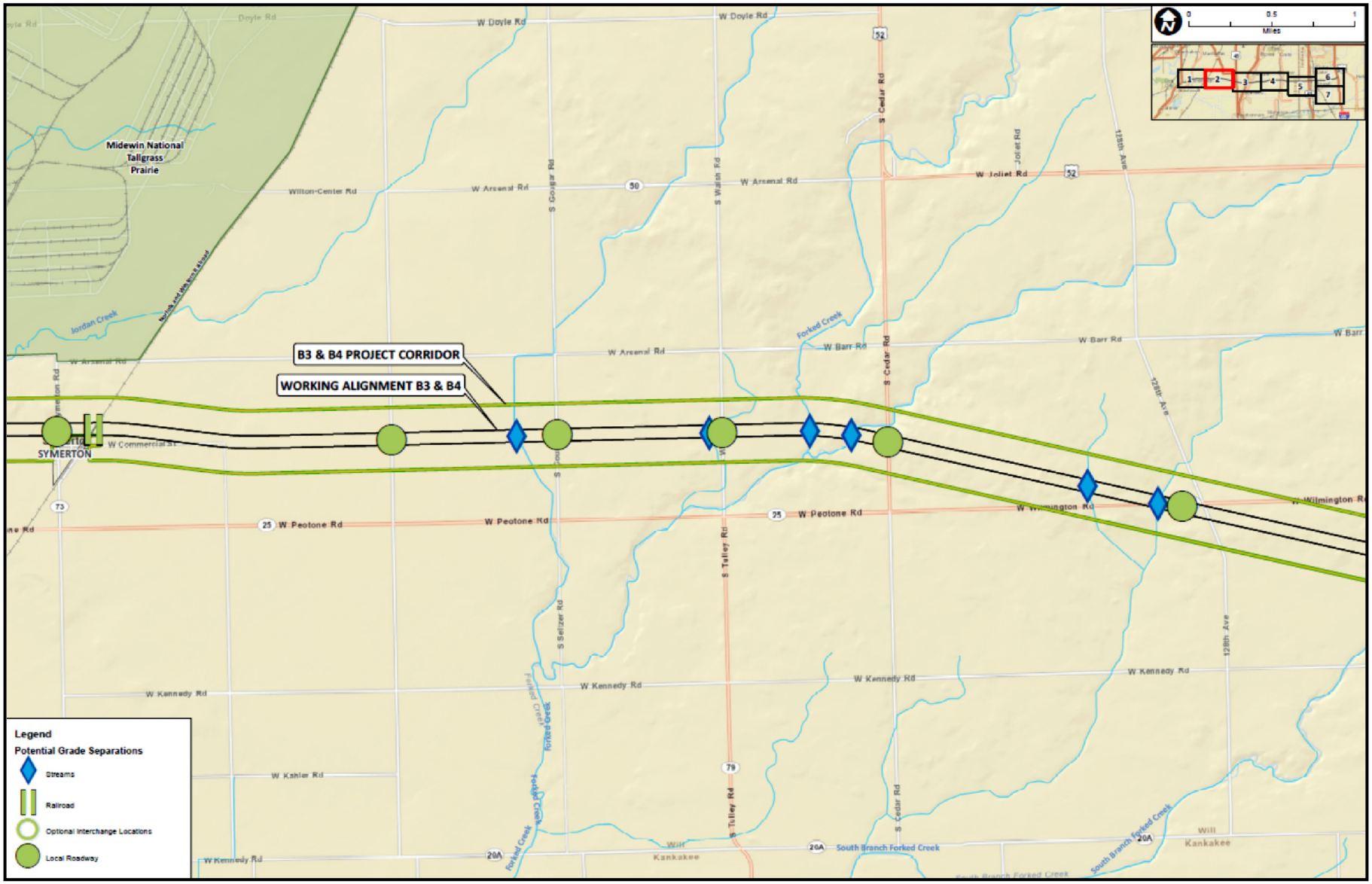


Figure 2-41. Tier One Representative Alignment – Corridors B3 and B4

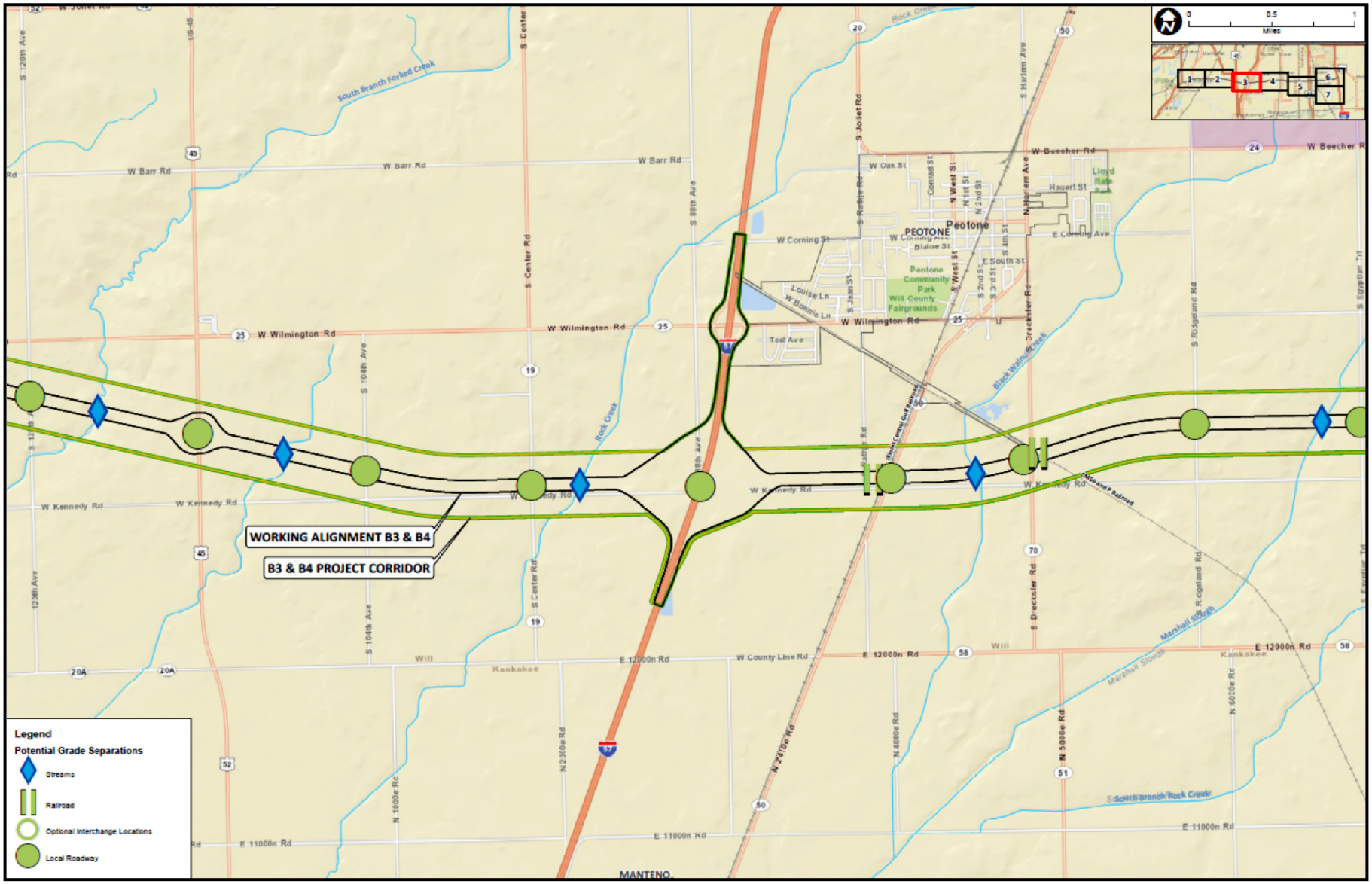


Figure 2-42. Tier One Representative Alignment – Corridors B3 and B4

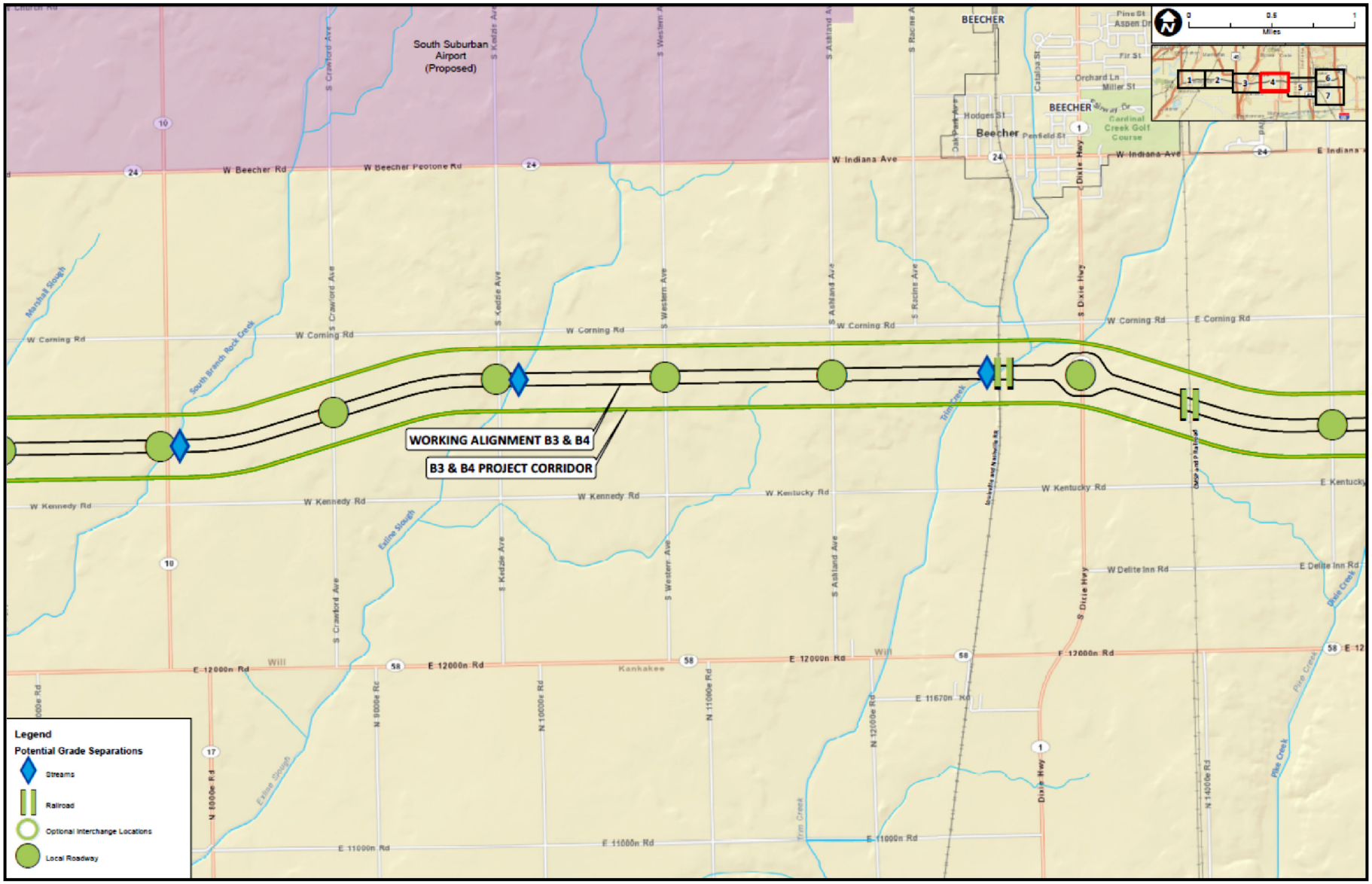


Figure 2-43. Tier One Representative Alignment – Corridors B3 and B4

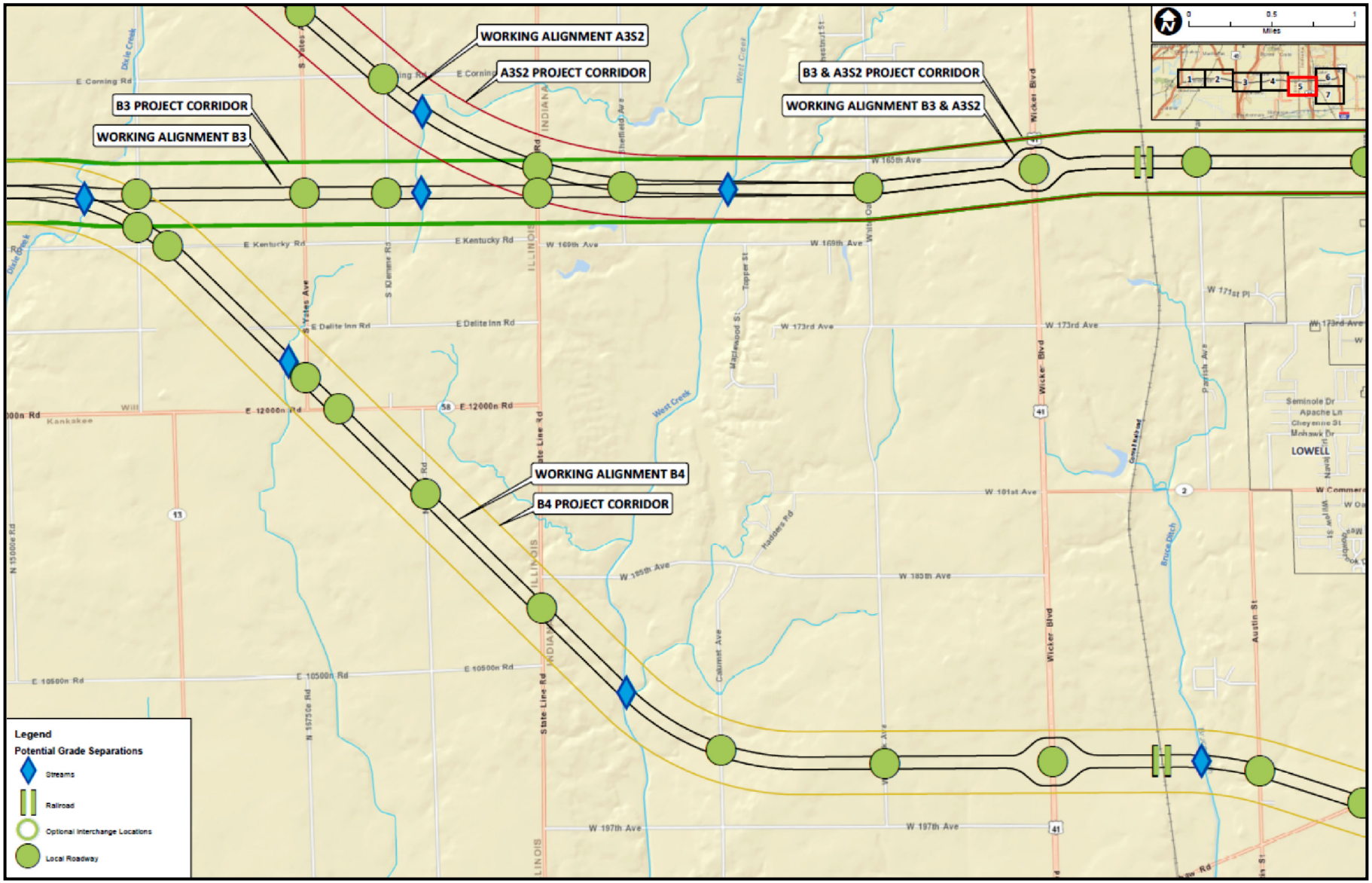


Figure 2-44. Tier One Representative Alignment – Corridor B3

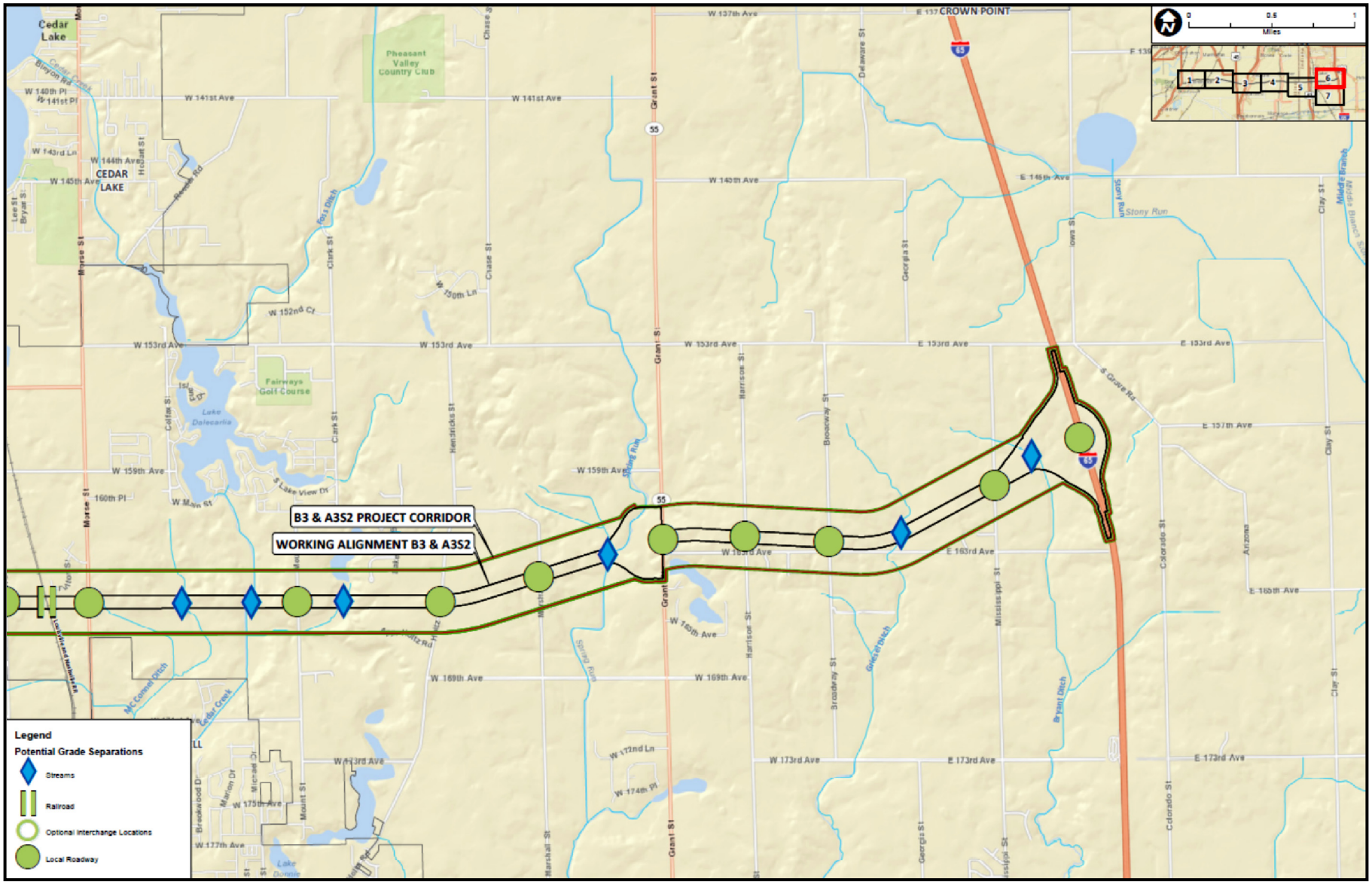
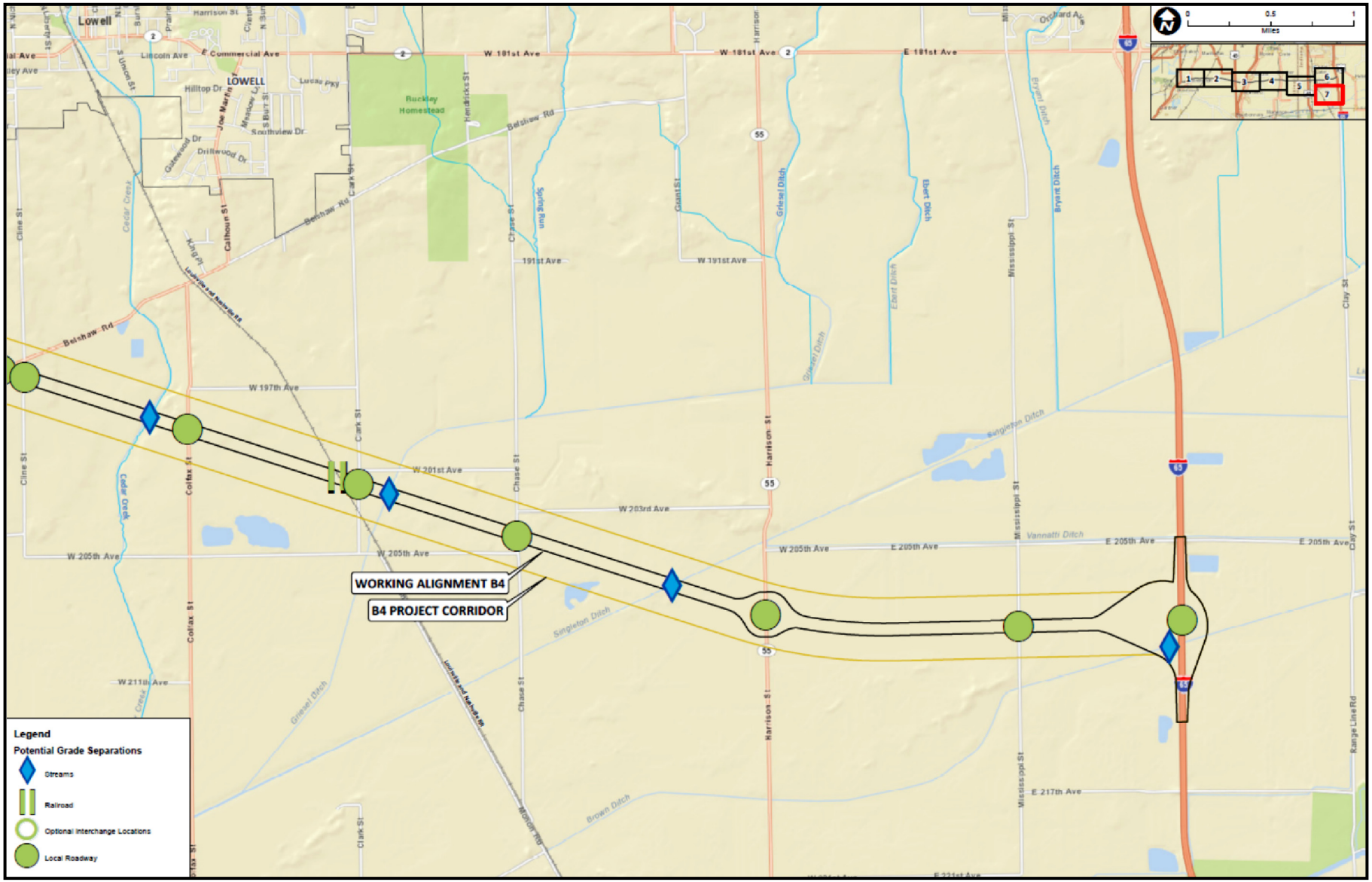


Figure 2-45. Tier One Representative Alignment – Corridor B4



2.6.1 Travel Performance

The travel performance for Corridors A3S2, B3, and B4 were evaluated with the regional travel demand forecasting model using a build socioeconomic forecast. This build socioeconomic forecast[6] assumes a limited-access alternative corridor is in place in the central portion of the study area. The build socioeconomic forecast is based on the reallocation of regional population and employment based on the change in accessibility provided by the limited-access alternative corridor.

As part of the travel performance evaluation for the build condition, the toll diversion curves for differing vehicle types were reviewed. It was found that the lower end of the curve for percentage of traffic using a toll road was for passenger cars at approximately 30 percent. The higher end of the curve for percentage of traffic using the toll road was for trucks at approximately 60 percent. On this basis, a 30 to 60 percent range for the percentage of traffic retained on a toll road was assumed for the purposes of analyzing the impacts of tolling on travel performance.

The travel performance results for Corridors A3S2, B3, and B4 are presented in Table 2-16 for the forecast year 2040 assuming both non- tolling and tolling scenarios.

As seen in Table 2-16, the travel performance for Corridors A3S2 and B3 are very similar and have the best overall travel performance. For the non-tolled scenario, Corridor B3 had an estimated ADT of 41,000 vehicles per day in the 2040 forecast year, including 24,000 trucks per day. Corridor A3S2 had 2,000 less ADT than Corridor B3, and the same estimated truck volume as Corridor B3. Corridor B4 had 7,000 less ADT than Corridor B3 and 8,000 less trucks. Corridor A3S2 has the highest travel benefit for regional VHT, study area congested VMT, study area VHT on arterials, and region THT. Corridor B3 has the highest travel performance for region east-west VHT, ADT, and study area truck miles of travel on arterials.

The tolling scenario with 30 and 60 percent retained traffic exhibited similar results to the non-tolled scenario, with Corridors A3S2 and B3 being very similar and having the best overall travel performance.

2.6.2 Alternative Corridor Expansion Potential

Corridors A3S2, B3 and B4 were compared to assess the relative increase in impacts if a wider working alignment were applied. The purpose of this assessment is to evaluate the potential compatibility with an expanded typical section that could potentially accommodate multi-purpose corridor use including additional modes such as utility transmissions/alternative freight transportation facilities, and/or expanded habitat and resource protection measures, as a few examples. In this regard, Table 2-17 summarizes the increase in impacts from a 400 foot working alignment to a 600 foot working alignment. Overall, Corridor A3S2 has the highest relative increase in impacts for more categories than Corridors B3 or B4. Corridors B3 and B4 have very similar changes in

[6] Illiana Corridor Study Forecasted Growth of Employment and Population in the Extended Region of Chicago, May 2012. Refer to Appendix E.

Table 2-16. Corridors Carried Forward Travel Performance (as compared to the best performing corridor)

Travel Performance Measure	No Toll			Toll Traffic	Tolled		
	A3S2	B3	B4		A3S2	B3	B4
Improve Regional Mobility							
Address Projected Growth in Regional E-W Travel							
Region East-West Vehicle Hours of Travel	+1,000	-	+3,000	30% retained	+2,000	-	+2,000
				60% retained	+3,000	-	+4,000
South Sub-Region East-West Vehicle Hours of Travel	-	+2,000	+8,000	30% retained	-	+1,000	+2,000
				60% retained	-	-	+5,000
Reduce Regional Travel Delay / Improve Regional Travel Time							
Region Vehicle Hours of Travel	-	+2,000	+4,000	30% retained	-	-	+3,000
				60% retained	-	-	+2,000
South Sub-Region Vehicle Hours of Travel	-	+2,000	+7,000	30% retained	-	+2,000	+3,000
				60% retained	-	-	+4,000
Improve Access to Jobs							
Jobs Accessible within 30 minutes to/from Study Area	-	-1,600	-1,300	30% retained	-	-800	-700
				60% retained	-	-1,400	-1,100
Alleviate Local System Congestion and Improve Local System Mobility							
Address Projected Growth in Local Traffic and Reduce Local Travel Delan / Improve Local Travel Times							
Study Area Congested VMT on Arterials	-	+29,000	+21,000	30% retained	-	+1,000	+15,000
				60% retained	-	+26,000	+69,000
Study Area Vehicle Hours of Travel on Arterials	-	+300	1,500	30% retained	+100	-	+100
				60% retained	+200	-	+300
Average Daily Traffic All Vehicles on Build Alt.	-2,000	-	-7,000	30% retained	-1,000	-	-2,000
				60% retained	-2,000	-	-4,000
Average Daily Traffic Trucks on Build Alt.	-	-	-6,000	30% retained	-	-	-1,000
				60% retained	-	-	-3,000
Address Lack of Cont. Higher Func. Class E-W Routes							
New Lane Miles of Limited Access Facilities	202	187	195				
New Lane Miles of Other Principal Arterials	0	0	0				
Provide for Efficient Movement of Freight							
Provide More Efficient Freight Movement							
Region Truck Hours of Travel	-	+1,300	+1,500	30% retained	-	-	+1,000
				60% retained	-	-	+1,700
South Sub-Region Truck Hours of Travel	-	+1,600	+5,800	30% retained	-	+1,400	+1,400
				60% retained	-	+600	+4,300

Table 2-17. Socioeconomic and Environmental Impact Matrix with B4 and A3S2 – 400-Foot to 600-Foot Comparison

EVALUATON CRITERIA	400-Foot to 600-Foot Corridor Impact Change		
	B3	B4	A3S2
Wetland Impacts (acres)			
PEM	8.9	4.4	3.8
PFO	1.1	0.0	10.4
PSS	0.0	0.0	2.9
PUB	0.1	0.0	0.2
Other	1.6	1.6	5.0
Total Wetland Impacts (acres)	11.8	6.1	22.2
Total Threatened and Endangered Species Impacts (acres)	1.6	1.6	0.0
Total Floodplains Impacts (acres)	124.0	236.6	103.8
Total Stream Impacts (miles)	1.7	2.3	1.8
Total Impaired Streams Impacts (miles)	1.1	1.2	1.2
Water Bodies (Rivers, Lakes, Ponds) (acres)	4.9	1.8	12.5
Parks/Nature Preserves/Natural Areas (acres)			
Total Parks Impacts (acres)	0.0	0.0	0.0
Nature Area Impacts (acres)	12.1	12.1	6.5
Total Forested Areas Impacts (acres)	17.7	1.0	32.6
Total Trail Impacts (miles)	0.1	0.1	1.5
Farmland (acres)			
Corn (acres)	467.0	536.9	458.8
Soy (acres)	381.4	449.8	315.0
Other (acres)	152.6	106.3	191.5
Total Farmland (acres)	1001.0	1093.0	965.2
Special Use (acres)			
Landfill (each)	0.0	0.0	0.0
Cemeteries (acres)	0.0	0.0	0.0
Business Parks (acres)	3.9	3.9	24.7
Intermodal Facilities (acres)	0.0	0.0	46.2
Major Utility - Pipelines (miles)	1.0	1.2	0.8
Major Utility - Power Lines (miles)	9.9	0.9	6.0
Affected Buildings (each)			
Residential (each)	17.0	16.0	29.0
Commercial (each)	2.0	2.0	0.0
Agricultural and Farms (each)	8.0	9.0	13.0
Unknown (each)	14.0	10.0	24.0
Total	41.0	37.0	66.0

impacts between the two working alignments with the exception of wetlands, floodplains and farmland. On this basis, Corridors B3 and B4 are more suited for potential multi-purpose corridor use than Corridor A3S2.

2.7 Implementation Strategy and Tier Two NEPA Studies

The Tier One DEIS for the Illiana Corridor considers a full range of potential multi-modal transportation improvements to satisfy the travel needs of the Study Area. Three alternative corridors have been identified to be carried forward in the Tier One DEIS for detailed analysis. The study brings together various transportation providers who have interests in improved transportation in the Study Area and who provided input throughout the study process. Ultimately, the Tier One EIS studies are anticipated to conclude with a decision to select a corridor(s) to be advanced for detailed evaluation and refinement in the Tier Two NEPA studies.

The Tier One decision will serve as a basis for transportation agencies and other transportation providers to prioritize and plan for eventual project implementation.

Because project implementation will be costly, it will likely occur over time in phases or sections. Phased construction of highway projects are guided by the definition of operational independence. A phase of work with operational independence must be able to be built and function as a viable transportation facility, even if the remainder of the work is never built. The development of a phased implementation plan cannot be fully defined in the Tier One EIS since many more details are required to sequence the development of a project of this magnitude. Potential phased implementation scenarios will be considered in detail in the Tier Two NEPA studies.

To facilitate overall project implementation, the Tier Two NEPA studies may be conducted for the entire selected corridor(s) or for sections of the selected corridor(s) that have independent utility. The logical termini for sections of independent utility is typically based on crossing routes with a functional roadway classification equal to or higher than the improvement being considered. Based on the selected corridor(s) as a limited-access highway facility, the logical termini for sections of independent utility would be the existing north-south Interstate facilities within the Study Area. On this basis, should the lead agencies agree to advance the Tier Two NEPA studies in independent sections, the likely sections of independent utility would be:

- Interstate 65 to Interstate 57
- Interstate 57 to Interstate 55

With completion of the Tier Two NEPA studies, other factors may remain that could influence the project implementation strategy, such as project delivery and procurement options, as well as funding opportunities and strategies. Within the sections of independent utility for which Tier Two NEPA studies are completed, project implementation may further occur in stages based on sections of operational independence as necessitated by these other factors.

Sections of operational independence would be evaluated as part of the Tier Two NEPA studies based on whether they also can be built and function as a viable transportation facility even if the rest of the work described in the Tier Two NEPA studies is never built.

Ultimately, a detailed implementation plan for improvements will be developed as part of the Tier Two NEPA studies, establishing a proposed sequence for project implementation based on sections of independent utility, operational independence, and viable financing strategies.

2.8 Potential Funding and Financing Options

Major transportation infrastructure projects have traditionally been financed through a combination of federal and state monies. These resources typically are combined to fund projects on a pay-as-you-go basis, meaning that projects often are built in phases or sections as funds become available over time. The pay-as-you-go approach has the benefit of simplicity and avoids the interest costs associated with debt. However, delayed implementation involves the hidden costs associated with inflation and unrealized benefits with respect to delayed economic development, delayed safety improvement, and delayed environmental benefits.

Because public funding resources are increasingly limited, state and local governments are faced with the challenge of inadequate funding to meet transportation needs. The result is that critical projects often face years of delay before funding is available. In an era of constrained public funding, new funding mechanisms are being considered. Although Illinois and Indiana have signed a Memorandum of Agreement (MOA) and passed enabling legislation to allow for public private agreements between Illinois and Indiana and one or more private entities to design, build, finance, operate, and maintain the Illiana Corridor, additional potential funding and financing sources are also anticipated to be required. As capital costs are developed for each of the build corridors, a uniform methodology for estimating these costs will be utilized (see Appendix G – Cost Estimating Procedure for Roadway System Alternatives).

The range of potential funding and financing strategies includes the following:

- Federal Credit Assistance and Instruments:
  - Transportation Infrastructure Finance and Innovation Act of 1998: This is a Federal transportation credit assistance program first authorized under the Transportation Equity Act (TEA)-21 that provides direct Federal loans, lines of credit, and loan guarantees through the US Department of Transportation (USDOT) to large projects of national significance, under criteria developed by Congress. In 2011, the USDOT received 34 letters of interest representing $14 billion in credit assistance compared to approximately $2 billion available. This extreme competitiveness, combined with the current uncertainty surrounding the surface transportation bill reauthorization does not provide any long-term visibility on the future of this program. Should this program continue to be

authorized in the next cycle, the Illiana Corridor could benefit from this form of borrowing if it meets the program's eligibility criteria.

- Section 129 Loans: Section 129 of Title 23 of US Code (U.S.C.) permits states to use federal funds to make loans to any federally eligible project. The loans must be repaid with a dedicated, nonfederal source. Illinois does not have enabling legislation in place to use Section 129 loans for surface transportation projects.
- State Infrastructure Banks (SIBs): A state revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects. Illinois does not have an established SIB. Indiana established a SIB in 1999, but has so far only authorized two local projects, for a total loan amount of $6 million, all of which had been disbursed as of December 2008.
- Private Activity Bonds (PABs): PABs are tax-exempt bonds issued by public entities to provide low-cost financing for private projects that serve a public purpose. Under the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), eligible projects include privately developed and operated highway and freight transfer facilities, which could include the Illiana Corridor if delivered under a P3 (see below).
- Grant Anticipate Revenue Vehicle Bonds (GARVEEs): A GARVEE is a debt instrument repayable, either exclusively or primarily, with future federal aid highway funds under Section 122 of Title 23 of the U.S.C. Although the source of payment is federal funds, GARVEEs cannot be backed by a federal guarantee but are issued at the sole discretion of, and on the security of, the state issuing entity.

- Federal Aid Highway Program
  - Federal Highway Program Formula Funds: The Illiana Corridor would be eligible to receive funds from some of the federal funding programs authorized under Title 23 of the U.S.C. (the federal-aid highway program). Current formula funding is already fully committed to other projects and prospects are not good regarding a potential increase in federal funding levels. Nonetheless, any increase in these funding levels could potentially be used to fund a portion of the project.
  - Federal Discretionary Funding: It is extremely difficult to forecast the potential for receiving surface transportation earmarks. Further, there is considerable uncertainty about federal spending in general as well as with the overall level of highway funding and the level of earmarking that will be available in the next transportation authorization bill. Nonetheless, the regional and national significance of the Illiana Corridor could provide opportunities to receive such funding depending on the language included in the reauthorization bill.
  - Tapered Match: TEA-21 section 1302 removed the requirement that federal share of project costs be applied to each progress payment, thereby allowing the Federal Highway Administration (FHWA) to establish a more flexible matching share policy for progress payments, as long as the appropriate matching ratio is

achieved by the end of the project. Tapered match may be useful when the government sponsor lacks the funds needed to match a federal project at the start but will accumulate the match over the life of the project. The state, when requesting a tapered match, should include in its request for project approval, a statement that tapered match will achieve earlier project completion, reduced project costs, or allow additional nonfederal funds to be leveraged for the project. With or without the authorization of tapered match, the state remains committed to providing the required nonfederal share of project costs. The state must also be able to control the federal share amount in its billing system.

- State Funding and Financing
  - IDOT and INDOT Funding: existing funds traditionally used by both States to fund transportation projects are already fully committed to other projects. However, the Illiana Corridor could benefit from these funds, should revenues from the state fuel tax or vehicle registration fee increase, or should additional state revenues be identified.
  - Toll Revenue Bonds: Toll revenue bonds issued by a public entity could be used to finance all or a portion of the project's capital cost. These bonds would be backed by net toll revenues collected on the Illiana Corridor. The cost of financing the project through this mechanism would depend on numerous factors, including but not limited to the credit quality of the net toll revenues pledged towards the repayment of the bonds, guarantees offered by the issuing entity, capital structure for the project, and market conditions at the time of issuance.

- P3s: As noted above, both Illinois and Indiana have passed enabling legislation to allow for consideration of P3 for the Illiana Corridor. A P3 consists in a contractual agreement that is formed between public agency and private sector partners, which allows more private sector participation in the delivery, financing, and/or operation of a transportation project than is traditionally sought. The term "public-private partnership" (P3) defines an expansive set of relationships from relatively simple contracts (e.g., design-build contracting), to development agreements that can be very complicated and technical, where design, construction, financing, operations, and maintenance responsibilities (and associated risks) are transferred to the private partner. The value created from a P3 agreement stems from the efficient allocation of risks to the parties that are best able to manage them. If structured properly and depending on market conditions, a P3 agreement can have the effect of reducing demands on constrained public budgets.
- Tolling: The level of toll revenues will depend on a number of factors including traffic volumes, and tolling policy. Further studies will be undertaken as the project advances through the planning process to assess the level of funding that can be expected from toll revenues.

No funding is currently committed to the Illiana Corridor, other than preliminary engineering. Further funding requirements for the Illiana Corridor will be given detailed attention in future steps of this project.