

**ALTERNATIVES TO BE CARRIED FORWARD
EXECUTIVE SUMMARY
June 21, 2012**

This Executive Summary describes the key points of the Alternatives to be Carried Forward Technical Memorandum.

Alternatives Identification and Definition

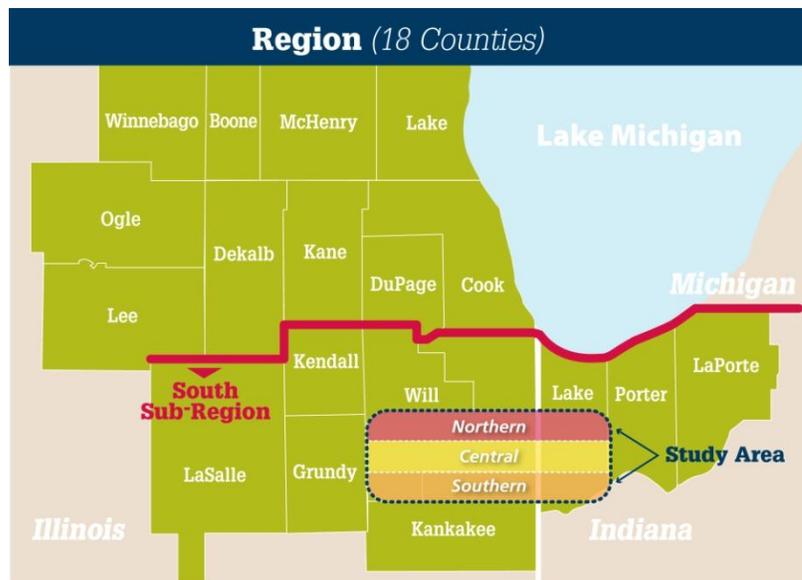
Through the September 2011 Corridor Planning Group (CPG) meeting, the December 2011 public meetings, and other stakeholders meetings, over 100 alternative concepts were received. Based on avoidance of three major constraint areas in the Study Area, the Midewin National Tallgrass Prairie, the planned South Suburban Airport, and Cedar Lake, and other natural and built resources a limited number of alternatives can actually be considered viable.

Over 100 Alternatives were developed and gathered from stakeholders during the Corridor Planning Group/Technical Task Force and Public meetings. The study team organized all these ideas into corridor alternatives and were then organized based on similar starting and ending points, avoiding densely populated areas, and other identified constraints. These potential conceptual alternatives were then further refined to avoid natural features, environmental constraints and other large impacts. The study team has analyzed each alternative the public suggested thus far, and has refined the corridors to minimized impacts. In all 8 new facilities on new alignments will be initially analyzed based on a 400-foot-wide footprint within a broader 2000-foot-wide study corridor and 2 upgrading existing arterial facilities evaluated using a 200' working alignment within a broader 400' corridor were shown at the December and February Public Meetings. This resulted in ten alternatives brought to the first and second round screenings.

First Round Alternatives Evaluation and Screening

These ten alternatives were evaluated based on their travel performance and environmental impacts in comparison to the No Build Alternative.

Travel Performance: A travel demand forecasting model for an eighteen-county area in northeast Illinois and northwest Indiana that includes a national truck freight model was used to assess the travel performance of the alternatives. Using a 2040 No Build market-based population and employment forecast as input for the travel demand model, the initial alternatives



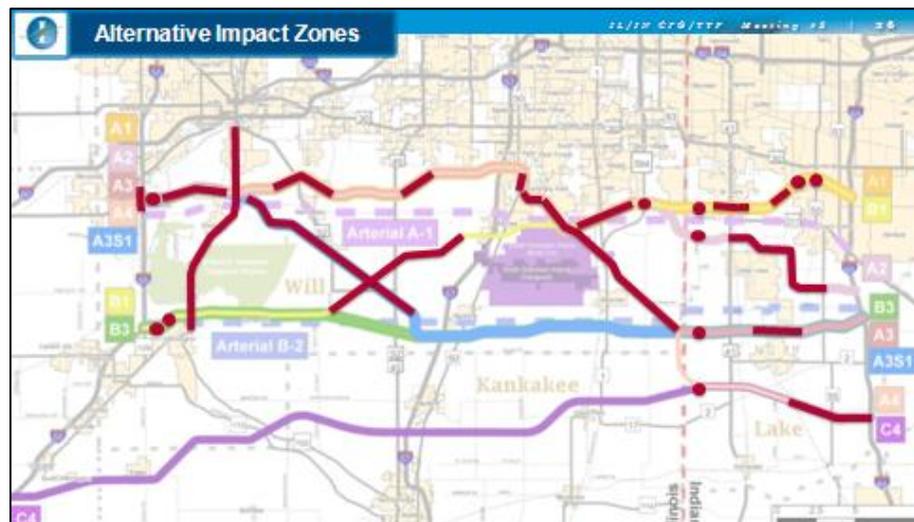
were tested and compared to the No Build alternative. The results of the initial alternatives testing showed strong regional movement through the Study Area for the limited access alternatives located in the northern and central portions of the Study Area. However, the arterial improvements and the limited access alternative in the southern portion of the Study Area did not attract these regional traffic movements.

Socioeconomic and Environmental Impacts: A geographic information system (GIS) was established for this study containing available socioeconomic, environmental, and physical features from federal, state, and local databases. Approximately 100 different potential impacts were quantified based on the GIS estimated impacts in the working alignment and manual checking of the GIS impacts using available aerial mapping and field review. Overall, the portions of the limited access alternatives located in the northern portion of the Study Area resulted in more overall impacts, some being substantial. This is due to the higher development densities and the greater difficulty in avoiding and minimizing impacts. Arterial A-1 Alternative also showed high potential displacement impacts.

First Round Conclusions: The C4 limited access alternative and the two arterial alternatives (A-1 and B-2) were not carried forward for further evaluation, as they had comparatively lower travel performance than the other limited access alternatives and the northern Arterial improvement had high number of property impacts, while C4 impacted Kankakee River State Park.

Second Round Alternatives Evaluation and Screening

The study team then looked at the northern and central alternatives and held a series of stakeholder meetings during January and February of 2012, further information and feedback were gathered on the alternatives. Based on this information, the remaining limited access alternatives



were refined in order to reduce impacts and address previously unknown constraints. As seen in the graphic below, the northern alternatives, A1 and A2, and the diagonal B1 alternative result in numerous impacts that raise doubt as to whether these alternatives are viable. The other diagonal alternatives, A3S1, A3, and A4, still had several impacts, plus had the undesirable diagonal alignment. Alternative B3 was identified as the alternative with fewest overall impacts

based on the Second Round refinements and relatively good travel performance. Based on this evaluation, B3 was the preliminary recommendation for the alternative to be carried forward into the DEIS.

Additional Alternatives Suggested

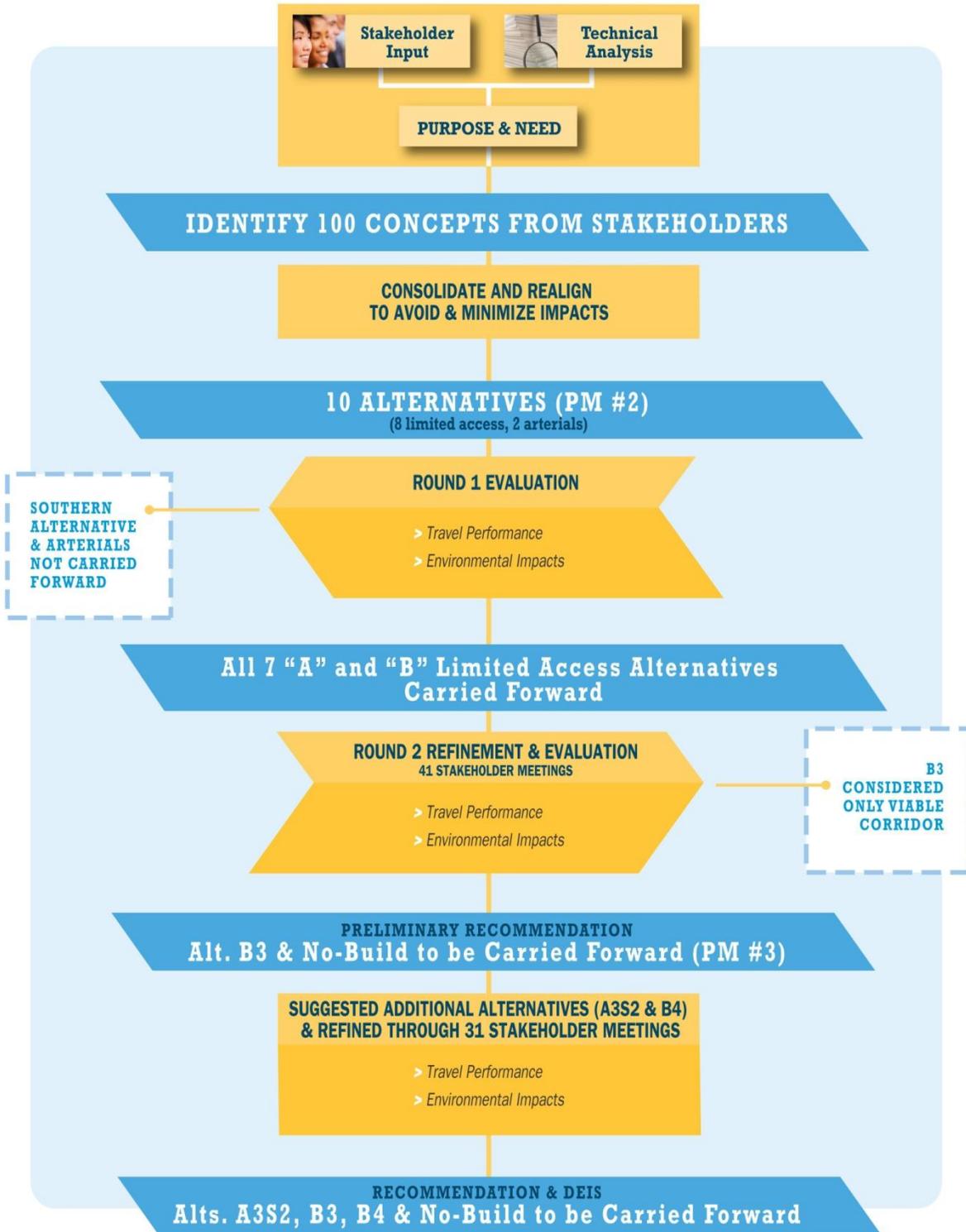
Following the preliminary recommendation of B3 to be carried forward for further study at the February 2012 CPG and Public Meetings #3, stakeholders in both states asked the study team to consider additional options. In Indiana, the B4 alternative was suggested; this alternative followed B3 from I-55 to Indiana, where it turned south of B3 to go south of the Lowell/Cedar Lake area to avoid residential and wetland impacts there. In Illinois, the A3S2 alternative was suggested to create a feasible northern corridor closer to existing suburban development and intermodal facilities, and north of the planned South Suburban Airport; this alternative followed parts of previous alternatives A3S1, B1, and A3. The A3S2 alternative avoided the Governors State University impacts, and the residential impacts in northern portion of the Study Area in Indiana.

In April-May 2012, additional stakeholder meetings were held to gain information and feedback on these two new alternatives. Potential environmental impacts were found to be lowest on B3, followed by B4 and A3S2. The A3S2 and B3 alternatives had very similar travel performance, with B4 having slightly worse travel performance, as the eastern portion of the alternative is located further south of A3S2 and B3. All three were found to meet the project's Purpose and Need and deemed as viable alternatives by the Departments.

Recommendation

The A3S2, B3, and B4 limited access alternatives are recommended to be carried forward, along with the No Build alternative to be evaluated in the Tier One Draft Environmental Impact Statement.

Alternatives Identification & Evaluation Process



Alternatives to be Carried Forward

Technical Memorandum

Illiana Corridor Tier 1 Environmental Impact Statement



Prepared for:

Illinois Department of Transportation and
Indiana Department of Transportation

Draft
April 25, 2012

Preface

The Alternatives to be Carried Forward Technical Memorandum (ACFTM) was prepared and issued on April 25, 2012. There are minor changes between the information presented in the ACFTM and the information presented in the Draft Environmental Impact Statement (DEIS).

- The Purpose and Need Statement was revised in June 2012 as a result of coordination with state and federal resource agencies from January through June of 2012. The DEIS Section 1 Purpose and Need includes revision of the principal need point, “Address Local System Deficiencies” to “Alleviate Local System Congestion and Improve Local System Mobility”, and other edits made to better reflect the transportation issues to be addressed. As such, some of the travel performance information in the ACFTM is presented differently in the DEIS to be consistent with the revisions in the Purpose and Need. For example, the “Address Projected Growth in Local Traffic” and the “Reduce Local Travel Delay/Improve Local Travel Time” need points were consolidated into one need point, and the principal need point, “Provide More Efficient Movement of Freight” has been revised to include a single need point “Provide More Efficient Freight Movement.”
- The socioeconomic and environmental impact tables in Section 2 of the DEIS differ from those in the ACFTM. The primary reasons for these differences are:
 - Provision of more detailed information
 - Improved database quality through recent updates.
 - Refinements to corridor locations.
 - Changes in methodology in enumerating resources.

An analysis confirmed that results from a rerun of Round Two impact tables using updated GIS data and increased category detail does not affect the recommended alternatives to be carried forward as presented in the ACFTM.

- Graphic summaries of impacts for wetland, floodplain, and stream resources by segment for each of the second round alternatives as well as Corridors A3S2 and B4 are included in the DEIS. These graphic summaries indicate the magnitude of these resource impacts for each segment of an alternative, thus providing more information as to the general location of potential impacts. The graphic summaries were requested by state and federal resource agencies at an informational meeting on May 25, 2012.
- The DEIS includes a commitment by IDOT and INDOT for facilitation of land use coordination within the overall corridor width (nominally 2000 feet) with the various regional and local jurisdictions. This land use coordination effort will be conducted during the Tier 2 study process and beyond, dependent on the states’ continuing support of the Illiana Corridor project.

Table of Contents

PREFACE.....	I
INTRODUCTION	1
1.0 TRANSPORTATION ISSUES AND PROBLEMS IDENTIFICATION	4
2.0 ALTERNATIVES IDENTIFICATION AND DEVELOPMENT	7
2.1 No-Build (Baseline) Alternative	8
2.2 Transportation Improvements Toolbox.....	9
2.3 Study Area Constraints	10
2.3.1 Summary of Constraints.....	19
2.4 Congestion Management Process	19
2.5 Alternatives Identification	21
2.5.1 Alternatives Naming Convention.....	25
2.6 Corridor Width	36
2.6.1 Working Alignments	36
3.0 ALTERNATIVES EVALUATION.....	38
3.1 Alternatives Evaluation Process	38
3.2 Initial Round Alternatives Evaluation	39
3.2.1 Purpose and Need Modal Evaluation	39
3.2.2 Initial Travel Performance Evaluation	41
3.2.3 Initial Socioeconomic and Environmental Impact Evaluation	48
3.2.4 Initial Round Evaluation Summary	52
3.2.5 Other Potential Alternatives	52
3.3 Second Round Alternatives Evaluation	53
3.3.1 Stakeholder Coordination	54
3.3.2 Potential Alternative Refinements	57
3.3.3 Second Round Socioeconomic and Environmental Impacts Evaluation.....	61
3.3.4 Second Round Evaluation Summary.....	68
4.0 ADDITIONAL ALTERNATIVES TO BE CARRIED FORWARD.....	72
4.1 Stakeholder Input	72
4.2 Identification of Additional Alternatives.....	72
4.3 Evaluation of Additional Alternatives	73
4.3.1 Travel Performance	76

4.3.2	Socioeconomic and Environmental Impacts	76
4.4	Summary of Additional Alternatives Evaluation	80
5.0	CONCLUSION	80

List of Tables

Table 1-1.	Identified Transportation Issues and Problems	6
Table 2-1.	Committed Projects In or Near the Study Area	8
Table 3-1.	Travel Performance Evaluation Matrix (Non Tolled)	46
Table 3-2.	Travel Performance Evaluation Matrix (Tolled)	47
Table 3-3.	Initial Round Socioeconomic and Environmental Impacts Matrix	51
Table 3-4.	Second Round Socioeconomic and Environmental Impacts	62
Table 3-5.	Potential Community Based Impacts	63
Table 3-6.	Potential Ecological and Special Lands (Section 4(f)) Impacts.....	64
Table 3-7.	Agricultural Land Diagonal Parcel Severances.....	67
Table 3-8.	Potential Cultural Resource Impacts	68
Table 4-1.	Agricultural Land Diagonal Parcel Severances.....	76
Table 4-2.	Travel Performance Matrix with B4 and A3S2 (No Tolls)	77
Table 4-3.	Travel Performance Matrix with B4 and A3S2 (Tolling).....	78
Table 4-4.	Socioeconomic and Environmental Impact Matrix with B4 and A3S2	79
Table 4-5.	Potential Cultural Resource Impacts	80

List of Figures

Figure 1-1.	Region and South Sub-Region Map	2
Figure 1-2.	Illiana Corridor Study Area	4
Figure 2-1.	2040 No-Build Alternative Improvements.....	9
Figure 2-2.	Major Obstacles to East-West Routes.....	12
Figure 2-3.	Built Environment and Population Densities	13
Figure 2-4.	Major Environmental Constraints.....	14
Figure 2-5.	Agricultural Land Use	15
Figure 2-6.	National Wetland Inventory (NWI) Areas.....	16
Figure 2-7.	Threatened and Endangered Species Areas.....	17
Figure 2-8.	Cultural Resources.....	18
Figure 2-9.	Initial Stakeholder Alternative Corridor Suggestions	23
Figure 2-10.	Grouped Alternative Corridors	24
Figure 2-11.	Corridor Naming Convention	25
Figure 2-12.	Initial Representative Alternatives.....	26
Figure 2-13.	Alternative A1	27
Figure 2-14.	Alternative A2	28
Figure 2-15.	Alternative A3.....	29

Figure 2-16. Alternative A4	30
Figure 2-17. Alternative A3S1	31
Figure 2-18. Alternative B1	32
Figure 2-19. Alternative B3	33
Figure 2-20. Alternative C4	34
Figure 2-21. Arterial Alternatives A-1 and B-2	35
Figure 2-22. Corridor Widths	37
Figure 3-1. Alternative Refinements Carried Forward	61
Figure 3-2. Land Use Impacts for Diagonal Alternatives	66
Figure 3-3. Land Use Impacts for Non-Diagonal Alternatives	66
Figure 4-1. Alternative B4	74
Figure 4-2. Alternative A3S2	75
Figure 5-1. Recommended Alternatives to be Carried Forward in Tier 1 DEIS	82

Appendix A – Potential Alternative Refinement Worksheets

Figure A-1. Potential Alternative Refinement 1	A-1
Figure A-2. Potential Alternative Refinement 2	A-2
Figure A-3. Potential Alternative Refinement 3	A-3
Figure A-4. Potential Alternative Refinement 4	A-4
Figure A-5. Potential Alternative Refinement 5	A-5
Figure A-6. Potential Alternative Refinement 6	A-6
Figure A-7. Potential Alternative Refinement 7	A-7
Figure A-8. Potential Alternative Refinement 8	A-8
Figure A-9. Potential Alternative Refinement 9	A-9
Figure A-10. Potential Alternative Refinement 10	A-10
Figure A-11. Potential Alternative Refinement 11	A-11
Figure A-12. Potential Alternative Refinement 12	A-12
Figure A-13. Potential Alternative Refinement 13	A-13
Figure A-14. Potential Alternative Refinement 14	A-14
Figure A-15. Potential Alternative Refinement 15	A-15
Figure A-16. Potential Alternative Refinement 16	A-16
Figure A-17. Potential Alternative Refinement 17	A-17
Figure A-18. Potential Alternative Refinement 18	A-18
Figure A-19. Potential Alternative Refinement 19	A-19
Figure A-20. Potential Alternative Refinement 20	A-20
Figure A-21. Potential Alternative Refinement 21	A-21
Figure A-22. Potential Alternative Refinement 22	A-22
Figure A-23. Potential Alternative Refinement 23	A-23
Figure A-24. Potential Alternative Refinement 24	A-23
Figure A-25. Potential Alternative Refinement 25	A-23
Figure A-26. Potential Alternative Refinement 26	A-23
Figure A-27. Potential Alternative Refinement 27	A-23
Figure A-28. Potential Alternative Refinement 28	A-23

Introduction

The purpose of the Alternatives to be Carried Forward Technical Memorandum (ACFTM) is to summarize the technical analysis and Stakeholder coordination that was performed to identify the alternative(s) to be carried forward for detailed evaluation in the Tier 1 Environmental Impact Statement (EIS) for the Illiana Corridor.

The Illiana Corridor was first envisioned in the 1900s as a vital link in an outer ring of highways encircling the Chicago region, and has since been studied in a number of forms over the last 40 years. Previous studies have indicated possible benefits from the development of an east-west transportation corridor extending from I-55 in Will County, Illinois to I-65 in Lake County, Indiana. These benefits include providing an alternate route for motorists travelling the I-90/94 corridor, relieving traffic on the I-80 Borman/Kingery Expressway and U.S. 30, serving as a bypass for trucks around the congested metropolitan highways, providing access to one of the largest intermodal freight areas in the U.S. and the proposed South Suburban Airport, supporting area economic development, and the potential for substantial job creation. As traffic volumes on other highways in the region have increased, the associated congestion has resulted in travel delays with substantial economic impacts to industries that depend on the ability to efficiently move freight within and through the region.

The jurisdictions of three metropolitan planning organizations extend over most of the Study Area: the Chicago Metropolitan Agency for Planning (CMAP), the Northwestern Indiana Regional Planning Commission (NIRPC), and the Kankakee Area Transportation Study (KATS). All three agencies have recently updated their long-range transportation plans to a 2040 planning horizon. Accordingly, the Tier 1 DEIS for the Illiana Corridor will use a 2040 planning horizon for consistency with these adopted regional plans.

The Illiana Corridor is described in the current 2040 long-range transportation plans of CMAP, NIRPC, and KATS. CMAP's GO TO 2040 Plan identifies the Illiana Corridor as an unfunded need and "supports initiating Phase 1 engineering for the project in order to narrow the scope to a few feasible alternatives, and recommends that these activities begin as a high priority." NIRPC's 2040 long-range transportation plan also included the Illiana Corridor as an unfunded need. The KATS adopted 2040 Long Range Transportation Plan (May 2010) includes the Illiana Corridor as a solution to the problem of through trucks using Kankakee County as a connection between Illinois and Indiana. In addition, the Illiana Corridor Tiered EIS is included in the Transportation Improvement Program (TIP) for CMAP and NIRPC.

In late 2006, the states of Indiana and Illinois, through their respective Departments of Transportation (DOTs), entered into a bi-state agreement that provided a framework for further development of the Illiana Corridor. This was followed in May 2007 by the passage of Senate Bill 105 in Indiana that enabled the Indiana Department of Transportation (INDOT) to perform a feasibility study that addressed the needs of the

corridor, and identified financing options, alternative routes, and potential impacts. The Illiana Expressway Feasibility Study was completed in June 2009.

Following the Illiana Expressway Feasibility Study, the Illinois Department of Transportation (IDOT) initiated two additional studies: The Strategic Role of the Illiana Expressway (April 2010), and the Illiana Expressway Economic Opportunities Analysis (April 2010). Both studies investigated the economic and social benefits that could result from the proposed expressway in the south and southwestern portions of the Chicago region.

On June 9, 2010, Governors Pat Quinn of Illinois and Mitch Daniels of Indiana moved the Illiana Corridor project forward by signing a Memorandum of Agreement (MOA). This MOA outlined a mutual commitment to the project by both states. Both states have passed legislation, as described in the MOA, to allow for public private agreements between Illinois and Indiana and one or more private entities to “develop, finance, construct, manage, or operate the Illiana Expressway to maximize the value and benefit to the people of both States and the public at large.” An assumption in this study is that the proposed action will include a public-private partnership component to finance the project, which could include constructing, operating, and maintaining the facility, consistent with the agreement between Illinois and Indiana.

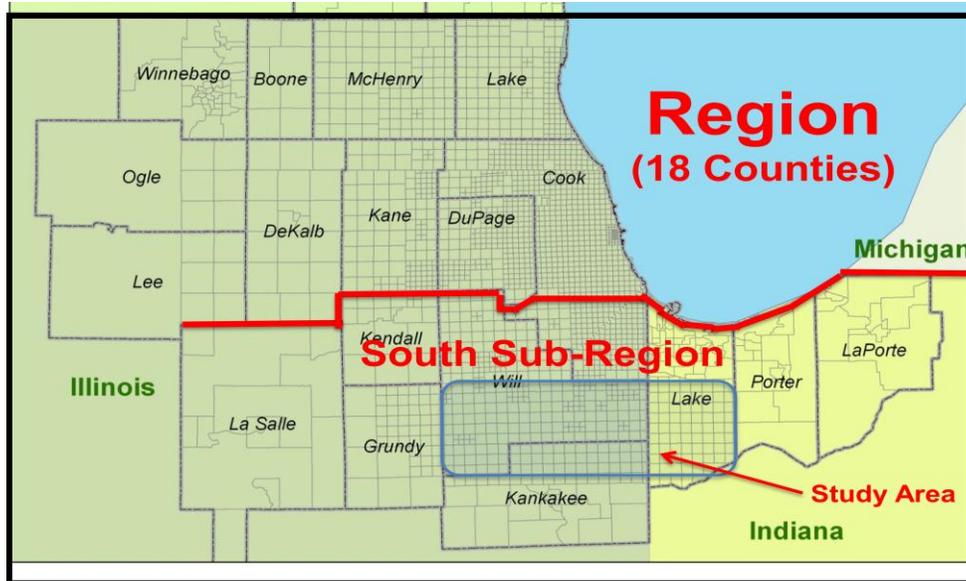
The northeast Illinois and northwest Indiana region is influenced by three key travel sectors. The greater region (including 18 counties in Illinois and Indiana for purposes of this study, as shown in Figure 1-1) serves as a vital national link for inter-state and national transportation and commerce movement. The region is also a key intermodal logistical area for transfer of rail, port, and truck freight between modes, which adds substantial trucking demand throughout the region.

Portions of the region are fully developed population centers having a long-established and balanced functional classification roadway network. Other areas are not developed, but are projected to experience substantial population and employment gains, but lack the full range of functional classification roadways.

As the travel demands throughout the region increase, the impact on travel performance and the corresponding needs are quite different due to the varying character of existing areas of the region. For this reason, the South Sub-Region has been defined to include the nine-county area south of Lake Michigan, as shown in Figure 1-1.

The South Sub-Region includes regional transportation facilities such as I-80, the Indiana Toll Road, and portions of I-55, I-57, and I-65. The northern portion of the South Sub-Region that includes I-80 is fully developed with limited infill opportunities. This area also has a long-established roadway system with a fully developed functional classification of roadways that includes a mix of interstates, other multi-lane highways, arterials, collectors and local streets.

Figure 1-1. Region and South Sub-Region Map



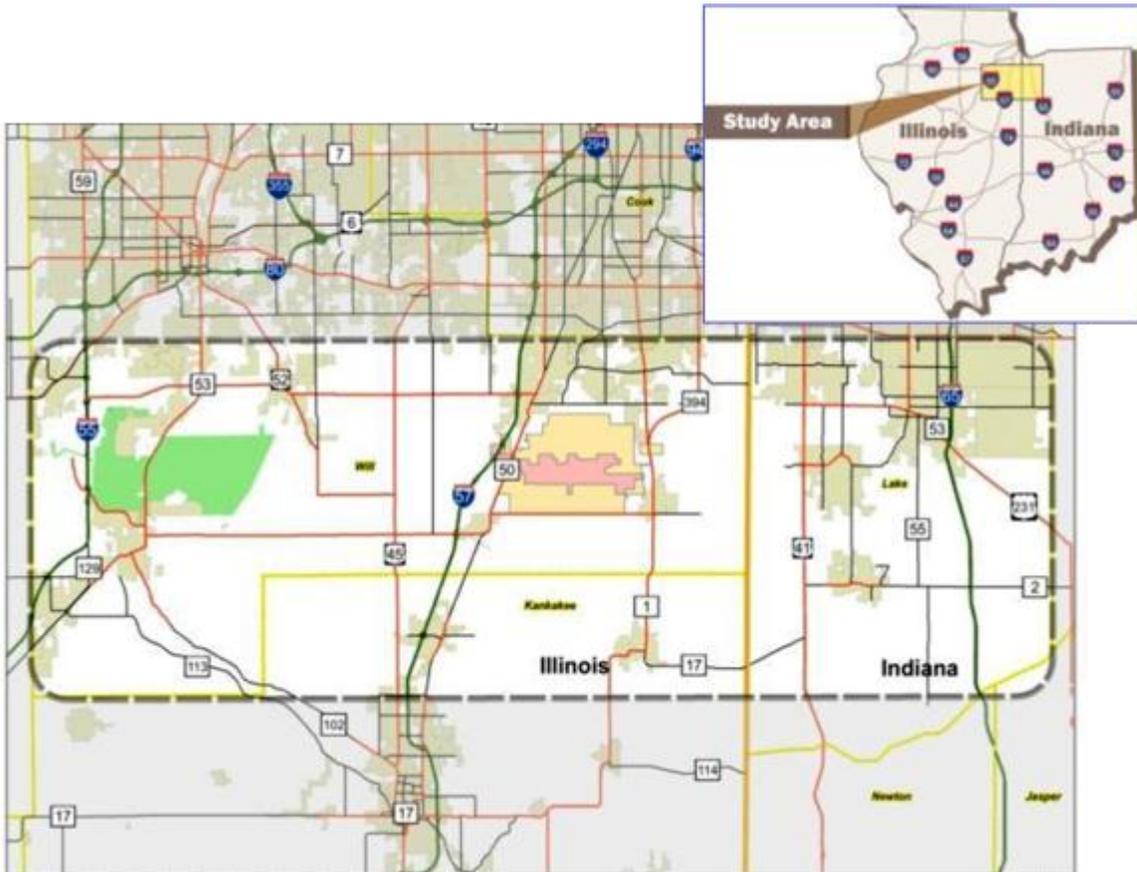
The roadways in the northern portion of the South Sub-Region are congested. Recent capacity improvements have been made to I-80/94 by INDOT and to I-80 by IDOT. This coupled with the current studies by IDOT for additional I-80 capacity improvements is anticipated to provide the maximum practical capacity along I-80 and I-80/94 within the design year of this proposed project. Therefore, these improvements are included as such in the “No Build” 2040 transportation network.

The southern portion of the South Sub-Region is less developed, and also includes the Illiana Corridor Study Area. The Illiana Corridor Study Area is shown in Figure 1-2. It is approximately 950 square miles in portions of southern Will County and northern Kankakee County in Illinois and southern Lake County in Indiana.

The general location of the Study Area is between I-55 in Illinois on the west, I-65 in Indiana on the east, the areas south of US Route 30 to the northern portion of Kankakee County in Illinois and the southern portion of Lake County in Indiana.

The EIS for the Illiana Corridor is being advanced in two tiers. Tier 1 includes a conceptual level of engineering detail in order to perform a comparative evaluation of potential alternatives with respect to travel performance and environmental impacts. In Tier 2, detailed engineering and environmental studies for the preferred corridor will be conducted, including full engineering plans, profile and cross sections, access justification reports, interchange type studies, and interchange/intersection design studies.

Figure 1-2. Illiana Corridor Study Area



Multiple alternatives within the preferred corridor(s) will be evaluated in Tier 2. Detailed environmental studies and documentation, and the regulatory requirements of state and federal agencies will also be completed in Tier 2.

1.0 Transportation Issues and Problems Identification

Identifying the transportation issues and problems within the Illiana Corridor Study Area was a fundamental first step for the overall project planning process. Early project activities included identifying transportation issues and problems that led to establishing the purpose of and need for the project. This included extensive stakeholder coordination activities coupled with a comprehensive technical analysis of transportation system performance.

Stakeholder coordination activities included numerous face-to-face meetings which were held within the first six months of the Tier 1 DEIS process. In addition, there have been seven meetings of the Corridor Planning Group (CPG); three Public Meetings (multiple locations), an Agency EIS Scoping Meeting; and two NEPA/404 Merger meetings. This

coordination is documented on the project website at www.illianacorridor.org and will be summarized in the Tier 1 DEIS.

As part of the initial CPG meetings, workshops were held to develop and gain concurrence with the Stakeholders on the transportation needs. In addition, a technical analysis of the region, South Sub-Region, and Study Area was completed to develop and confirm the nature of transportation issues and problems within the Study Area. This culminated in the Transportation System Performance Report (TSPR) ¹ and comprises a comprehensive analysis and summary of the performance of the transportation system for the Study Area both today and for the year 2040 under the No-Build alternative.

The stakeholder input and the TSPR findings formed the foundation for the overall study process and provided essential input for development of the project's Purpose and Need Statement. Table 1-1 summarizes the transportation issues and problems identified through this process.

Based on the stakeholder input and TSPR findings, the project's Purpose and Need Statement was prepared. The project's Purpose is:

"The purpose of the proposed action is to provide a transportation solution(s) that will improve regional mobility, address local system deficiencies, and provide for efficient movement of freight in the Study Area in a manner that complements regional transportation and economic development goals."

The principal need points are outlined below:

1. Improve Regional Mobility
 - Address projected growth in regional east-west travel
 - Reduce regional travel delay/improve regional travel times
 - Improve access to jobs
2. Address Local System Deficiencies
 - Address projected growth in local traffic
 - Address lack of continuous east-west routes through the Study Area
 - Reduce local travel delay/improve local travel times
3. Provide Efficient Movement of Freight
 - Improve accessibility to Study Area freight facilities
 - Provide more efficient freight movement through the Study Area

¹ Illiana Corridor Transportation System Performance Report (TSPR), found at: <http://illianacorridor.org/informationcenter/library>

A more detailed description of the transportation issues and problems is provided in the Illiana Corridor Purpose and Need Statement which is available on the project website and will be contained in the Tier 1 DEIS.

Table 1-1. Identified Transportation Issues and Problems

Project Needs	Stakeholder Problem Statement	Technical Analysis Findings ²
<p>Improve Regional Mobility</p>	<ul style="list-style-type: none"> • Relieving congestion on major highways • Access to major traffic generators and Study Area /Regional jobs 	<ul style="list-style-type: none"> • The two main east-west roads directly north of the Study Area, I-80/94 and U.S. 30, both experience high levels of congestion currently. • I-80 to the north is the primary available east-west interstate route for regional travel. The next available east-west route is I-74, 100 miles to the south. • Population and employment forecasts show strong growth over the next 30 years. • Projected major regional growth will contribute to substantial increases in both east-west and north-south vehicle trips and miles.
<p>Address Local System Deficiencies</p>	<ul style="list-style-type: none"> • Future traffic congestion • Provide improved east-west connections 	<ul style="list-style-type: none"> • Average daily and forecasted traffic volumes are projected to increase substantially. • Large average daily traffic increases will be experienced on east-west roads in the Study Area. • Substantial traffic volume increases will be found along higher classification roadways. • Study Area contains no higher functional class east-west routes. • Manhattan-Monee and Peotone-Wilmington-Beecher Roads are the main east-west principal arterials in the Study Area; they are 2-lane facilities that do not extend completely across the Study Area. • There are only 141 east-west lane miles of other principal arterials in the Study Area and no multi-lane east-west highways. • Multi-lane and two-lane highways will continue to experience substantial deterioration in operations based on projected growth in travel demand. • There were 14,000 total crashes and 1,000 truck crashes in the Study Area over a 3 year period.
<p>Provide Efficient Movement of Freight</p>	<ul style="list-style-type: none"> • Address growing freight traffic • Access to intermodal facilities • Solutions should support the regionally and nationally important freight system 	<ul style="list-style-type: none"> • Local truck trips made entirely within the Study Area are projected to increase by 228% between 2010 and 2040. • Truck trips originating in or destined to the Study Area are projected to increase by 186% and 185%, respectively between 2010 and 2040. • Truck trips destined for, originating in, or passing through the Study Area are projected to increase by 193% between 2010 and 2040. • Truck vehicle miles traveled (VMT) are projected to substantially increase in the Study Area between 2010 and 2040: north-south by 60% and east-west by 106%, for a total truck VMT increase of 80%.

² Technical analysis findings are presented in the TSPR: <http://Illianacorridor.org/informationcenter/library>

2.0 Alternatives Identification and Development

The identification and development of potential build alternative corridors 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 alternatives evaluation process is described in Section 3.1.

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 Metropolitan Planning Organizations (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 1 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 2.6).
- An extensive stakeholder outreach program is an essential component of the overall study process and is being conducted consistent with IDOT's and INDOT's Context Sensitive Solutions (CSS) policies and/or practices, through which stakeholder input is sought on every aspect of the Illiana Corridor study.
- 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 alternatives 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 build alternatives through the tiered environmental process and beyond.

Based on input received through individual stakeholder meetings, 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.

2.1 No-Build (Baseline) Alternative

A 2040 No-Build (i.e.; Baseline) Alternative was developed for the Illiana Corridor Study. The 2040 No-Build Alternative was defined to include fiscally constrained major projects from the 2040 Regional Transportation Plans, projects included in the Transportation Improvement Programs of CMAP, NIRPC, and 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 these committed projects included those projects included 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-Build Alternative will be carried forward for consideration throughout the Tier 1 and Tier 2 EIS process and will be compared to all build alternatives with respect to travel performance and socioeconomic and environmental impacts.

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 South Suburban Airport 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		
1-57	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	109 th Avenue in Crown Point (M)
Mississippi Street	New Road	from US 30 to 61 st Ave. in Merrillville (N)
101 st Avenue	Add Lanes	Merrillville (N)
IN 2	Add lanes, interchange improvement	I-65 east of Lowell (N)
Kennedy Avenue	Add Lanes	Schererville (N)

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

- Toll Roads
- Managed Lanes
 - HOV Lanes
 - HOT Lanes
 - Toll Express Lanes
 - Truck Only Lanes
- Traffic Management
 - Transportation System Management (TSM)
 - Intelligent Transportation Systems (ITS)
- Non-Motorized
- Multi-Purpose Corridors

2.3 Study Area Constraints

During the initial data collection phase of the Tier 1 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 following Figures 2-2 through 2-8 represent a summation of the background data gathered through this process.

Figure 2-2 shows the following major Study Area constraints identified through this process, which includes the Midewin National Tallgrass Prairie and the Joliet Arsenal; the South Suburban Airport (SSA), the surface and subsurface Colchester Mines South of Wilmington 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 major 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 IN Route 2 and US Route 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, forested/shrub wetlands are the dominant type. Additionally, wetlands are prevalent along the northern edge of the Study Area from Manhattan, IL to St. John, IN. Field studies will be performed as part of the Tier 2 EIS to delineate Waters of the U.S./Wetlands within the Study Area.

Figure 2-7 shows the general locations of federal and/or state listed Threatened and Endangered (T&E) plant and animal species within the Study Area, based on available GIS database information. T&E species are protected under the Endangered Species Act, which provides a program for the conservation of threatened and endangered plants and animals and their habitats. The majority of the known T&E species occur 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 the Town of Crete in 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 2 EIS to confirm the presence of T&E species and/or potential habitats.

Figure 2-8 shows the locations of identified cultural resources (Historic and Archeological) within the Study Area based on available GIS database information. The majority of the identified built historic resources 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 Indiana and Illinois and constrained by the availability of existing data.

Figure 2-2. Major Obstacles to East-West Routes

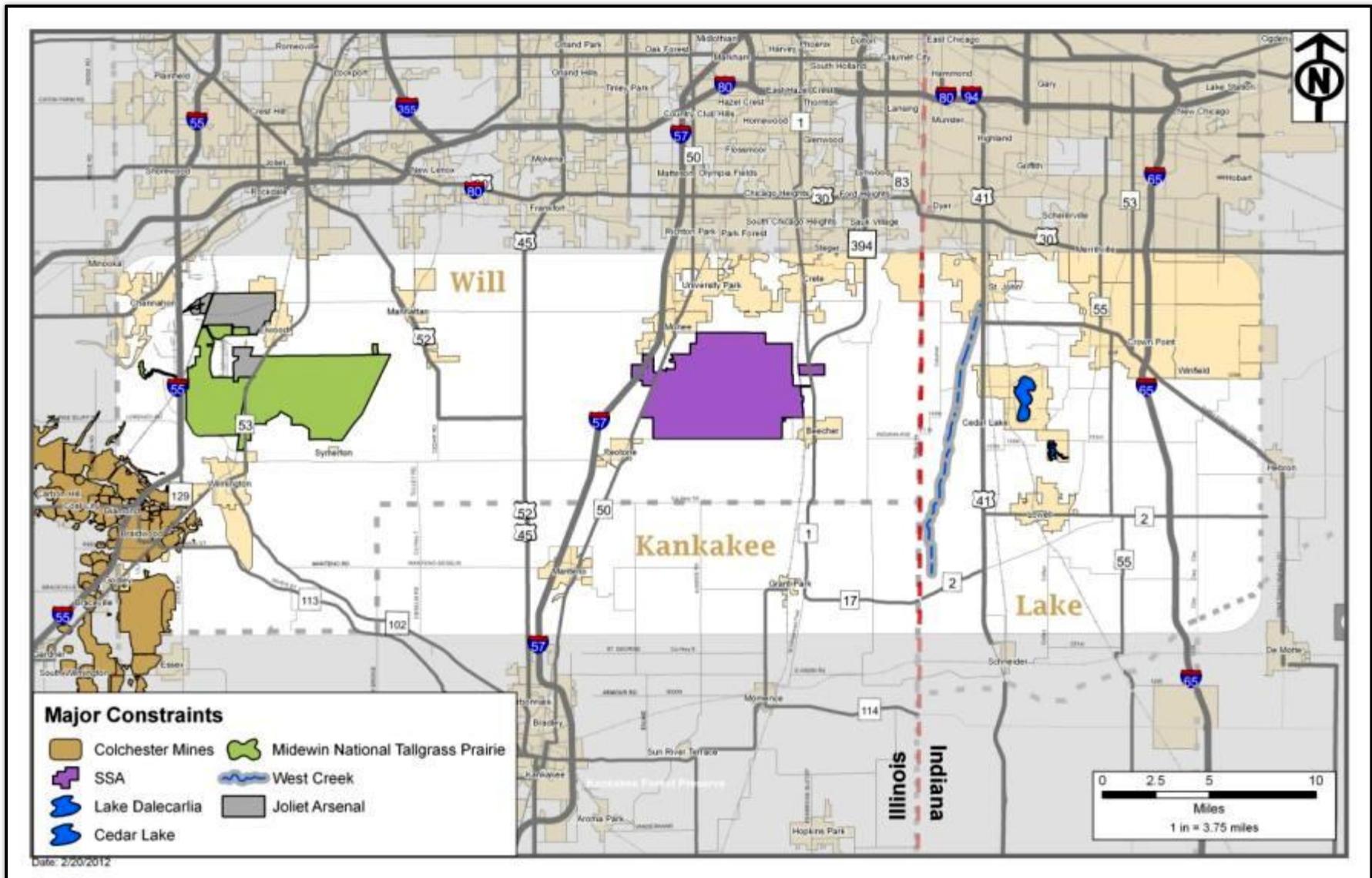


Figure 2-4. Major Environmental Constraints

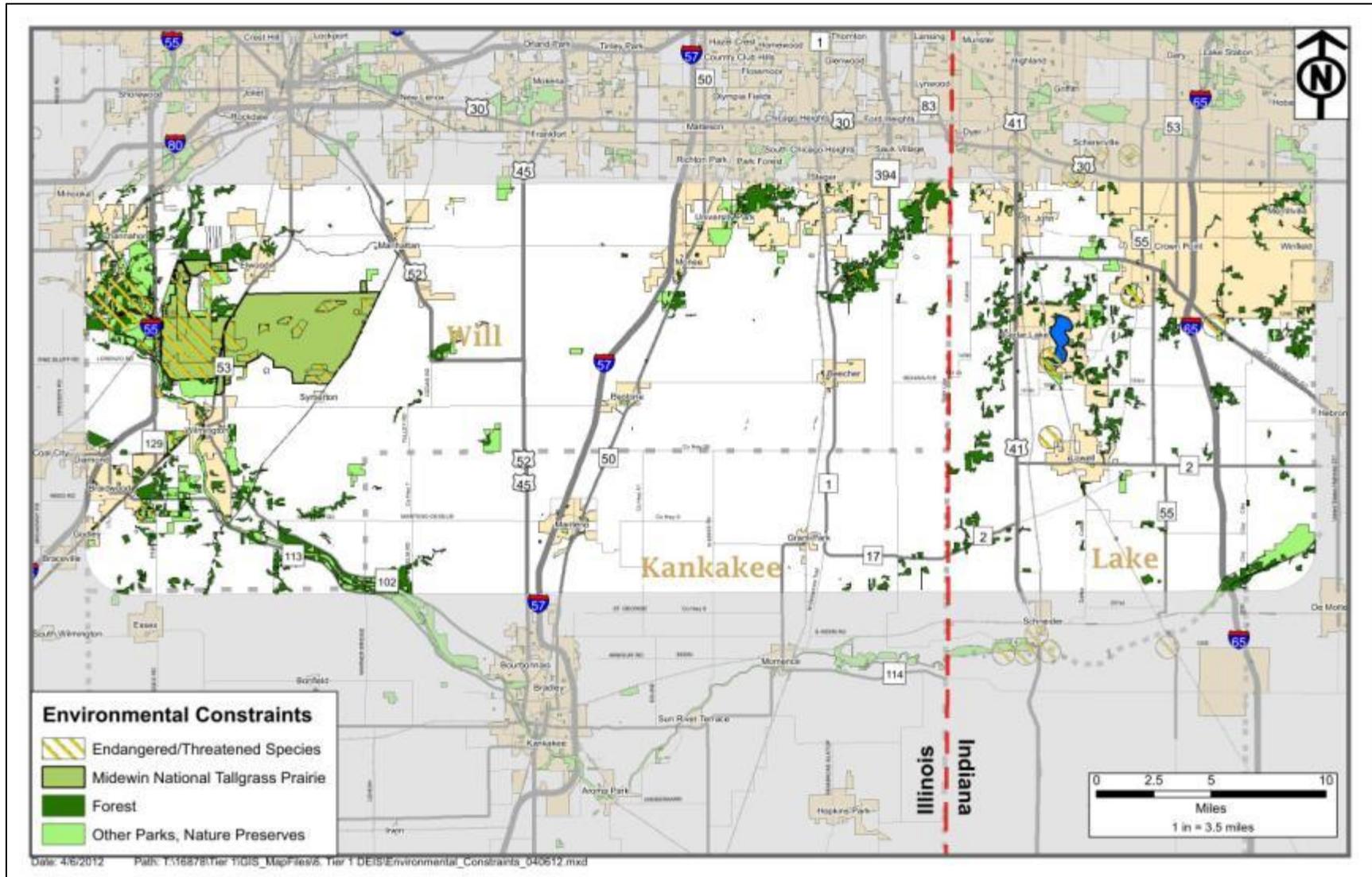


Figure 2-5. Agricultural Land Use

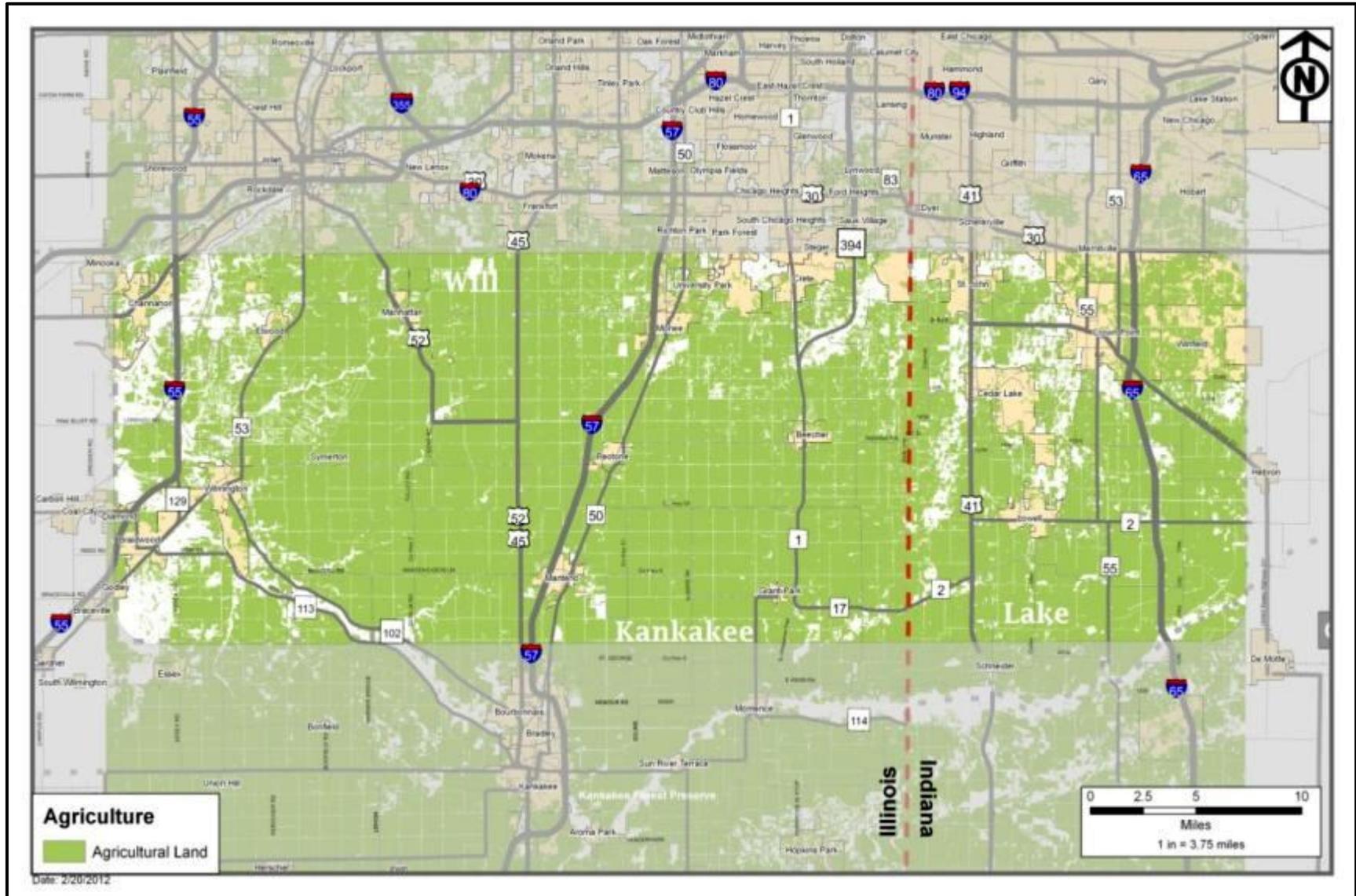
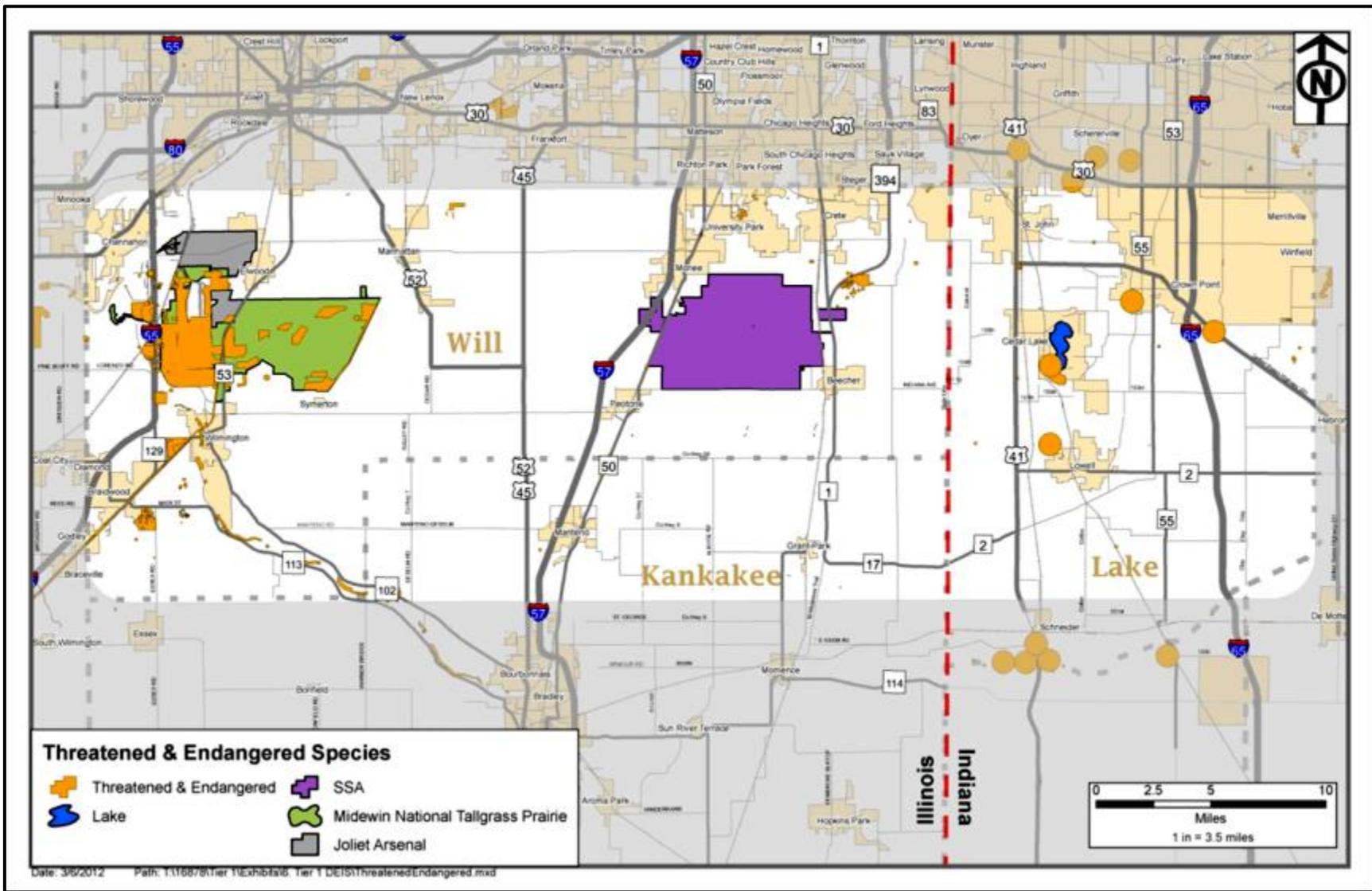


Figure 2-7. Threatened and Endangered Species Areas



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 ILCS 3440), National Park Service records, Illinois Historic Preservation Agency (IHPA) records, Indiana Division of Historic Preservation and Archaeology 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. Cultural resources information will continue to be gathered through the remaining Tier 1 process and as part of more detailed studies in Tier 2.

2.3.1 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.

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 Arsenal, and the CenterPoint intermodal facility. In addition, this area includes high concentrations of wetlands and threatened and endangered species.

Lake County, Indiana includes some of the more densely forested areas and also several higher population centers such as St. John, Cedar Lake, Lowell and Crown Point. In regards to historic resources, the areas of high sensitivity are predominately located 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 significant 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. The evaluation considered not only the larger constraint elements but also the mapping level detail gathered in GIS.

2.4 Congestion Management Process

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 Congestion Management Process (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 obviate 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 as part of the 2040 regional plans for CMAP, NIRPC, or KATS as a financially constrained major capital project. On this basis, 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 recommended project, which along with the prior planning efforts described in the Introduction, prompted initiation of the current Tier 1 DEIS. Prior to the project being adopted into the long range plans, the project will be evaluated through the respective MPO's 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 overall congestion management toolbox for the Illiana project is discussed above in Section 2.2. As discussed in Section 3.2.1, 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 TSPR³ that Rail Freight, Passenger Rail, Commuter Rail, Intercity Bus, and Commuter Bus do not have the ability to meet the project Purpose and Need. This discussion appears on pages 146- 149 in the TSPR. The use of Non-Motorized transportation 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 potential transportation modes including Truck Freight, Managed Lanes, and general multi-modal/multi-purpose corridor use were also seen as having low potential for meeting the project Purpose and Need as stand-alone alternatives, but could provide a transportation benefit as potential location specific complementary components of the Illiana Corridor. Therefore, it was determined that congestion management strategies would not satisfy the project Purpose and Need as a stand-alone alternative, and is therefore not considered further in Tier 1.

³ Available at: <http://illianacorridor.org/informationcenter/library>

Individual congestion management strategies, along with other lower cost transportation system management, travel demand management, and intelligent transportation system strategies will be considered in Tier 2 as location specific complementary components of the selected alternative where practical and feasible to sustain its functional integrity. The relative corridor flexibility is considered with respect to potential multi-purpose use in Section 3.3.4.1.

2.5 Alternatives 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" x 17" maps with representative constraint elements such as the municipal boundaries, planned improvements such as the South Suburban Airport 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 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
- 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 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 South Suburban Airport.

The alternatives were also reviewed for common themes or locations. During the initial digitization and conceptual placement of the suggested alternatives, the team reviewed each stakeholder alternative to identify duplicates. Once the duplicate alternatives were consolidated, the team then evaluated the overall trends of each group of alternatives. Once a grouping of 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 corridors either north or south of each municipality, it was possible to consolidate several potential locations of identified alternatives to common 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 Indiana and Illinois, and via the project website.

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

The remaining suggested alternatives (not including a potential fatal flaw or severe impact to a known environmental constraint) resulted in 10 unique “representative” corridors. Those corridors included eight on new alignment, and two arterial roadway improvement options, with sections on new alignment as required providing a continuous east-west route. These 10 initial alternatives are shown in Figures 2-12 through 2-21. The 10 initial alternatives could then be examined more closely for potential impacts to man-made or natural environmental assets within the 400’ working alignment and 2000’ corridor buffers, as discussed in Section 2.6.

Figure 2-9. Initial Stakeholder Alternative Corridor Suggestions

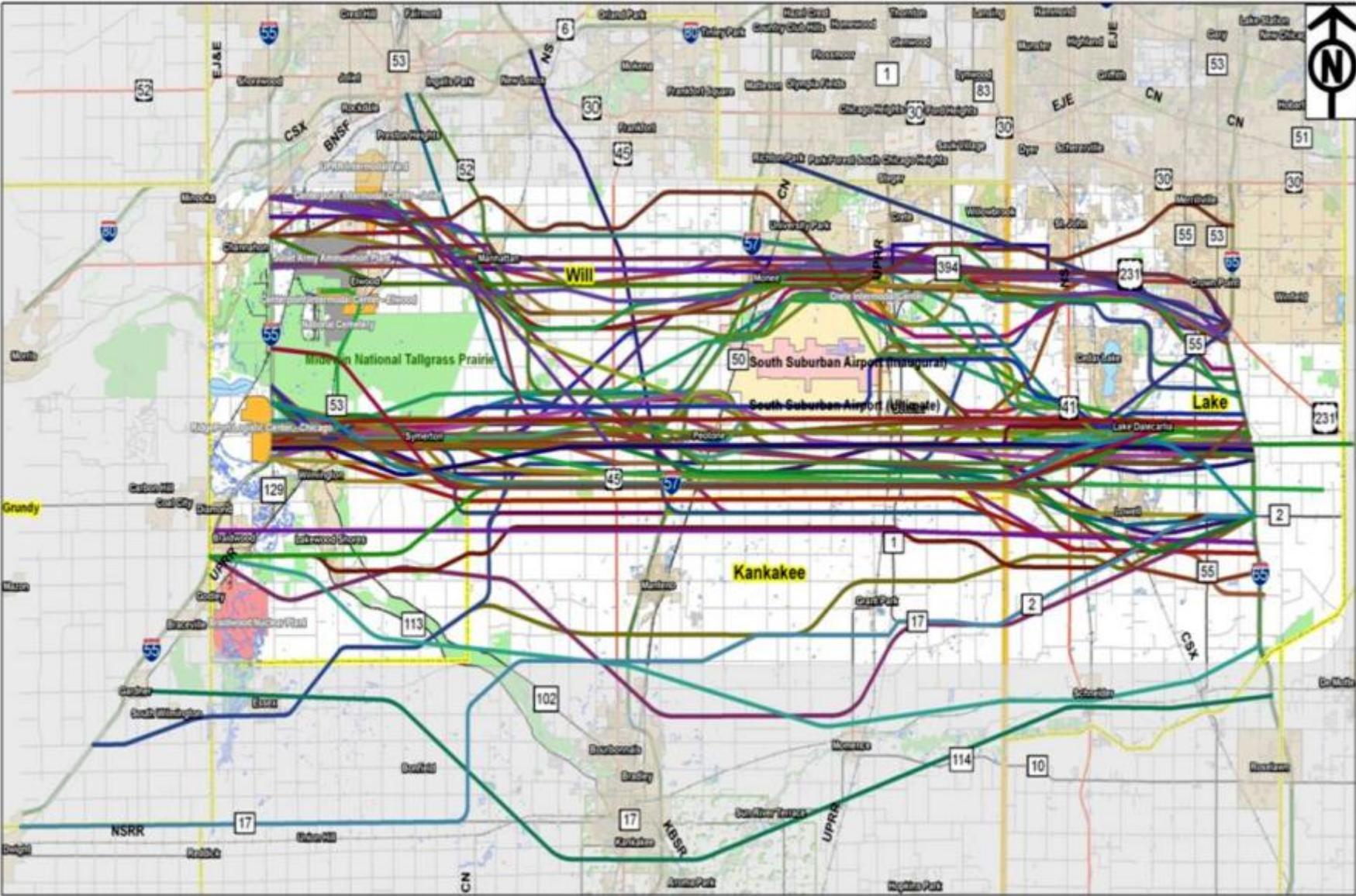
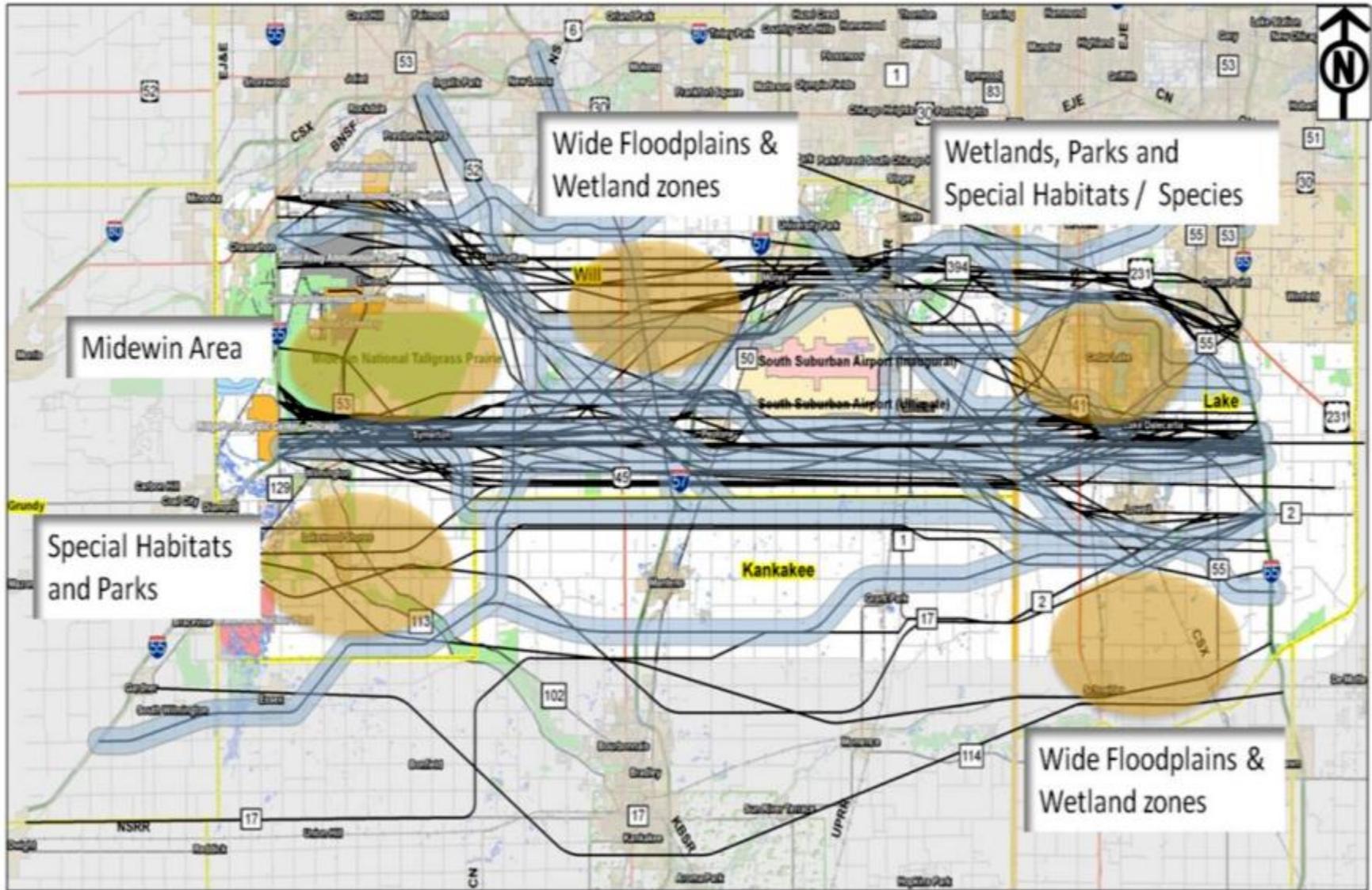


Figure 2-10. Grouped Alternative Corridors



2.5.1 Alternatives Naming Convention

The general alternatives naming convention can be seen in Figure 2-11, which is based on the general location where the alternatives 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, 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 alternatives were named without a hyphen (i.e.; "A1") and the arterial roadway alternatives were named with a hyphen (i.e.; "A-1").

Figure 2-11. Corridor Naming Convention

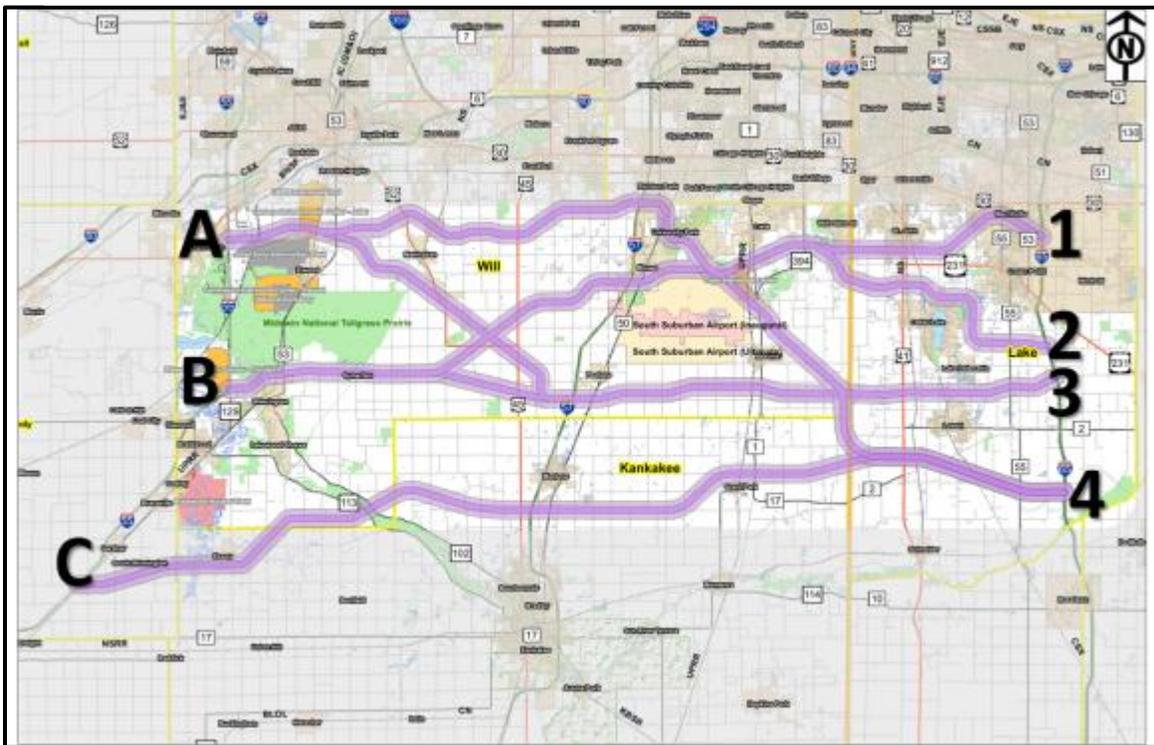


Figure 2-12. Initial Representative Alternatives

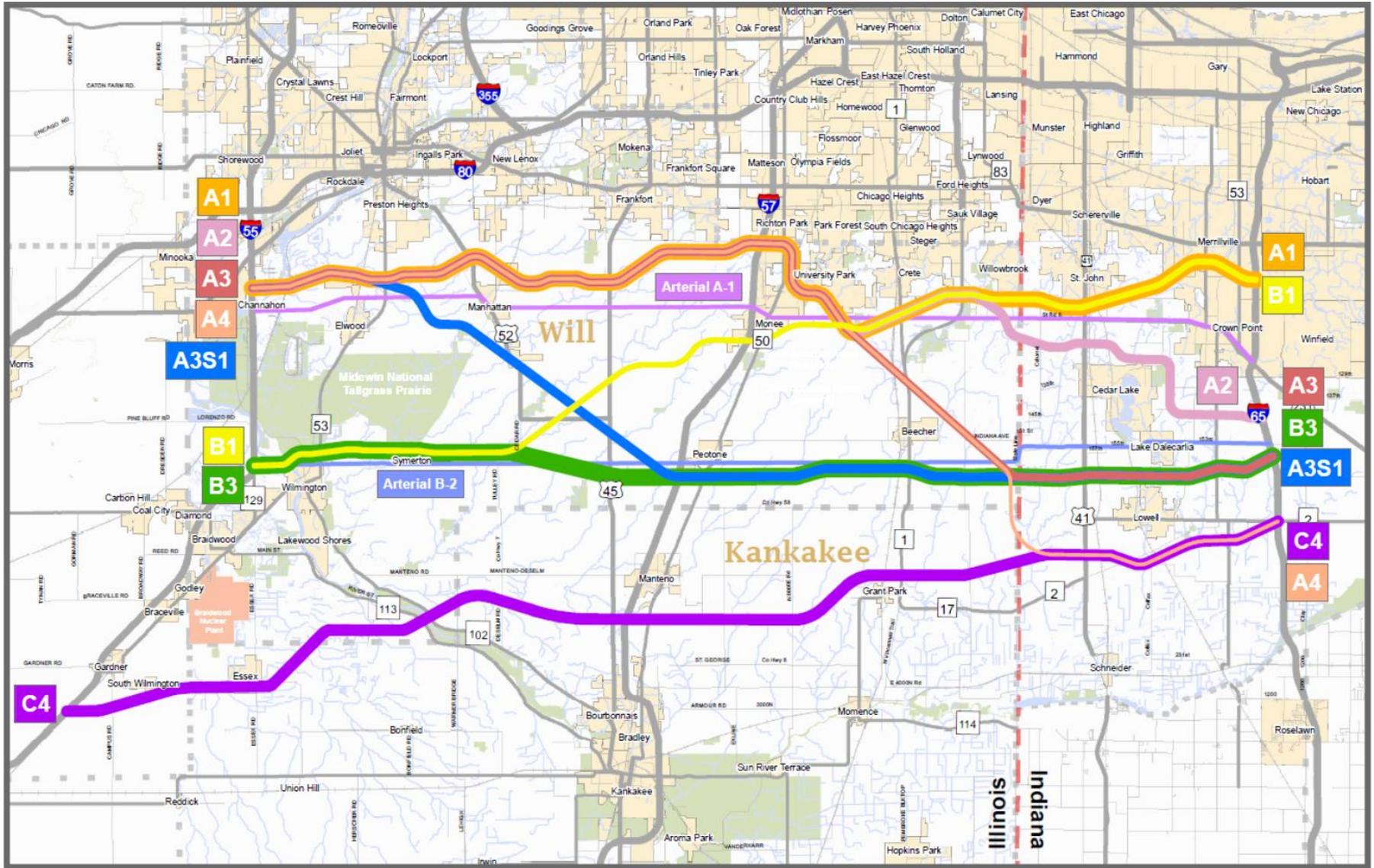


Figure 2-14. Alternative A2

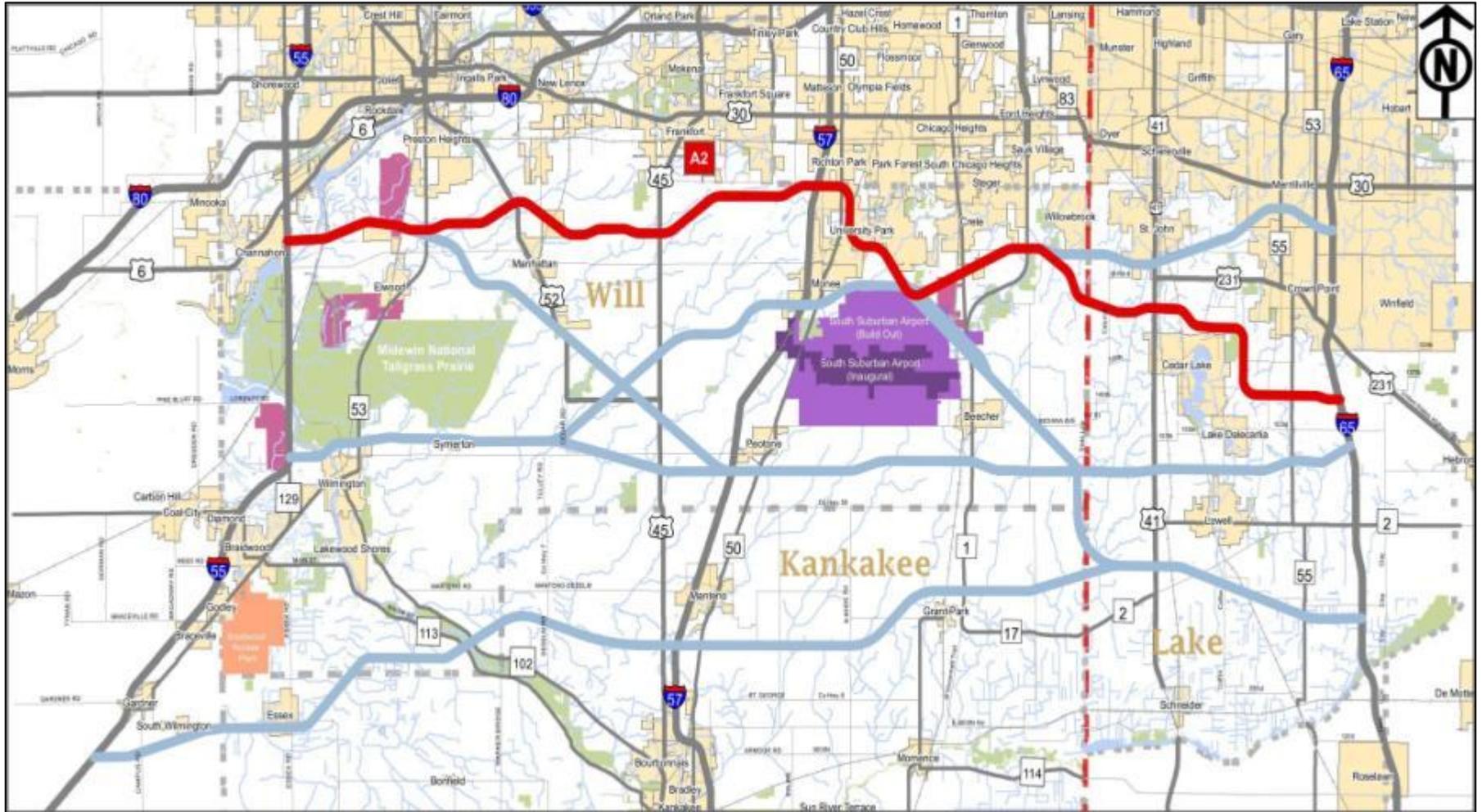


Figure 2-16. Alternative A4



Figure 2-17. Alternative A3S1

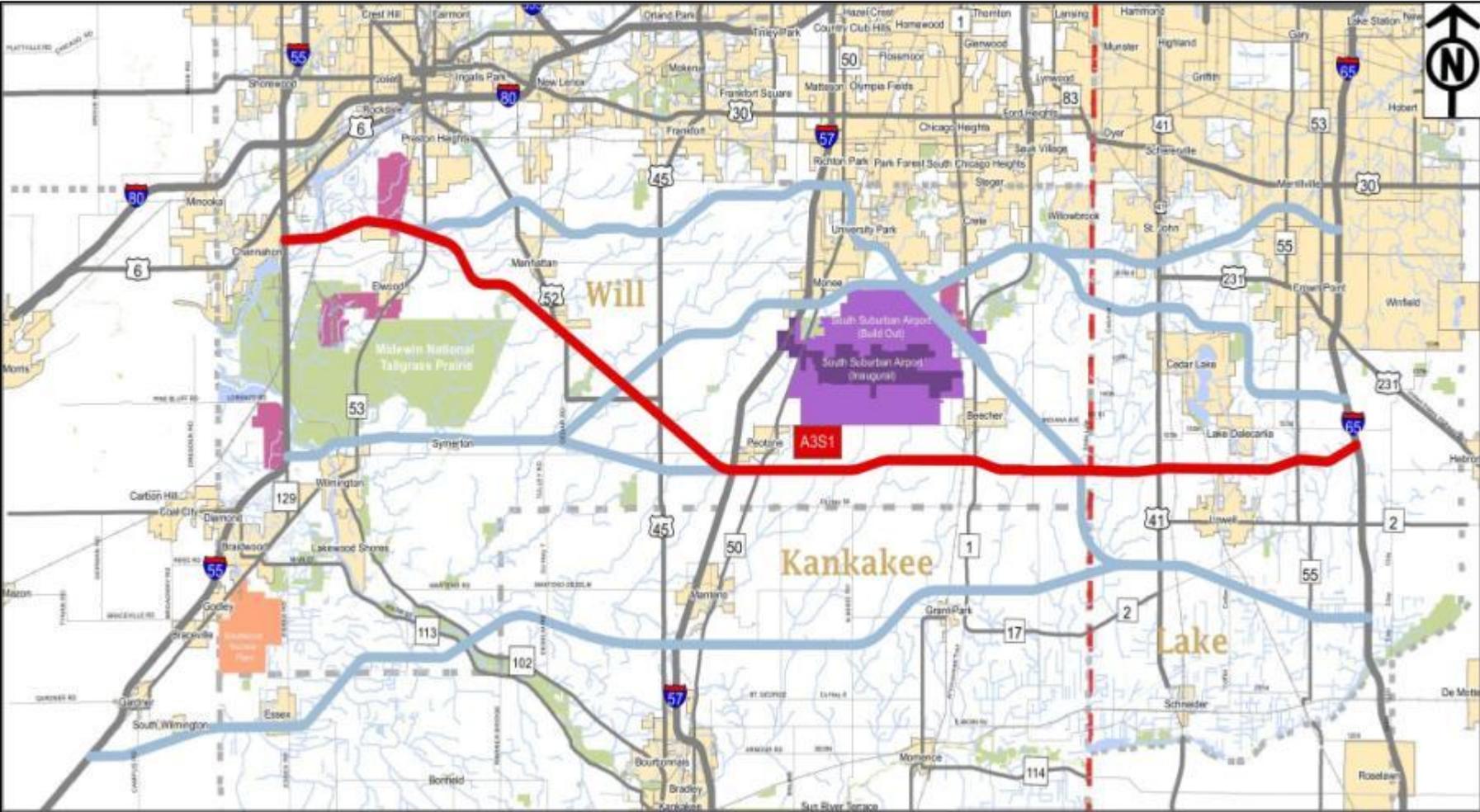


Figure 2-18. Alternative B1



Figure 2-19. Alternative B3

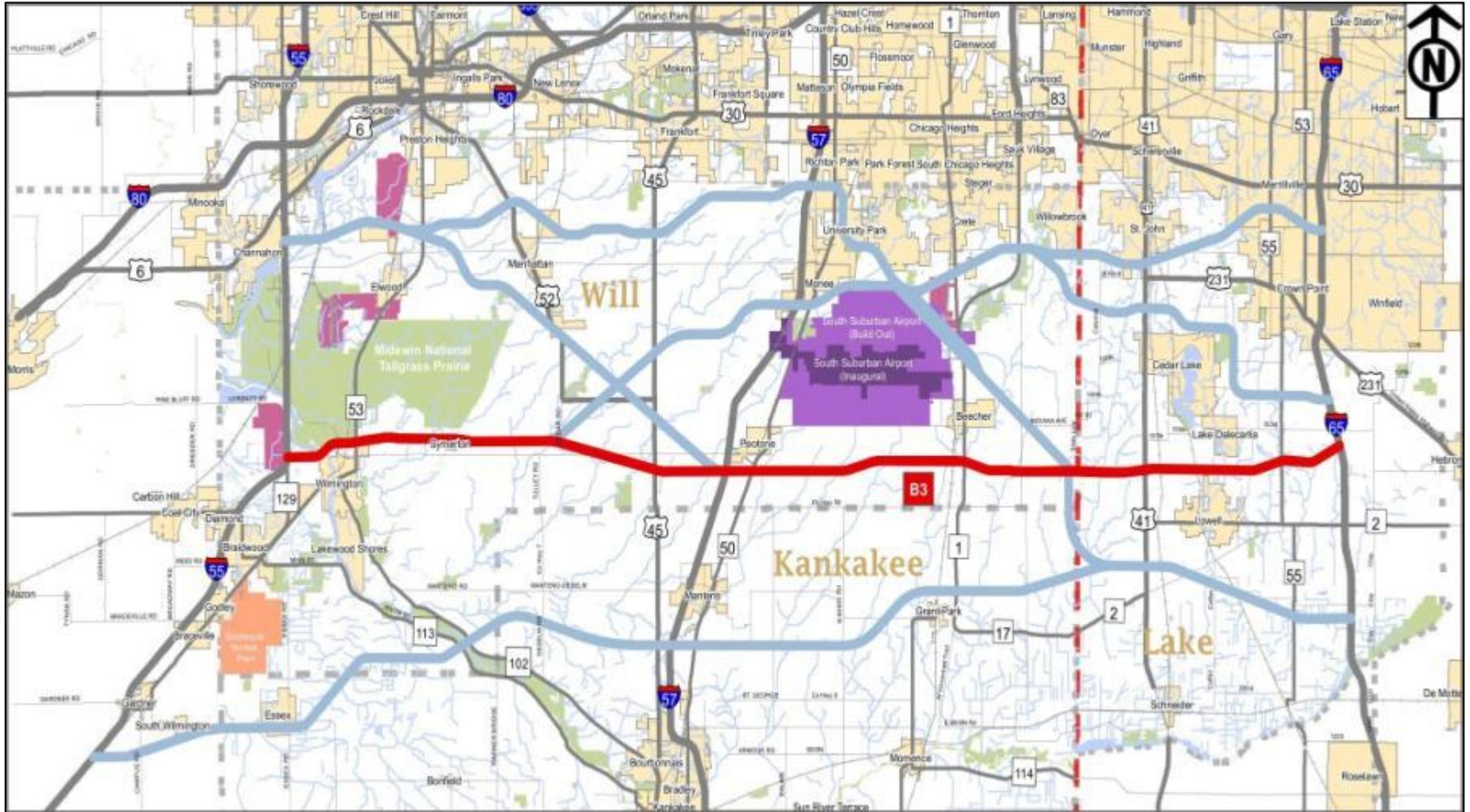


Figure 2-20. Alternative C4



These 10 initial alternatives were advanced for a comparative analysis as part of an initial round evaluation (refer to Section 3.0) to determine if any of the individual transportation modes or alternatives should be dismissed based on comparatively poor overall travel performance, or based on having disproportionately high and unavoidable socioeconomic and environmental impacts.

As part of a second round evaluation, remaining alternatives 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 overall flexibility for potential multi-purpose corridor use was considered at 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 in this analysis for informational purposes in response to comments from resource agencies.

2.6 Corridor Width

As noted above, the Tier 1 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 alternatives and 400 feet for arterial alternatives. The overall limited access and arterial corridor widths are consistent with practice on previous Tier 1 DEIS studies. An inventory of socioeconomic and environmental resources within each corridor was made and included as part of the GIS database for the project.

2.6.1 Working Alignments

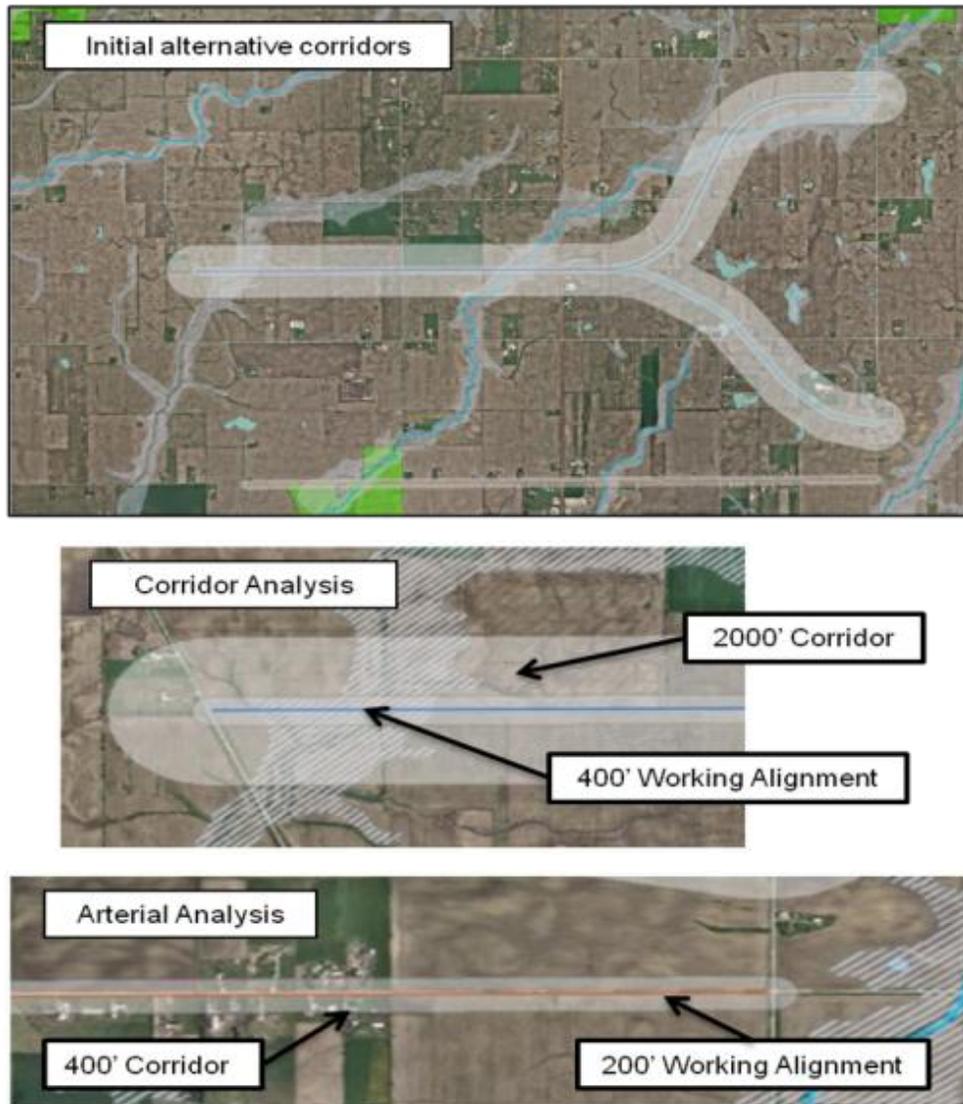
For new limited access alternative corridors, which can include multiple transportation modes, each of the identified corridors contained a single “working alignment” within the 2,000 foot overall corridor width that was evaluated for socioeconomic and environmental impacts. A 400 foot working alignment 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 of higher speed travel and wider outside clear zones also 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 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, 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 alternative corridors.

Figure 2-22. Corridor Widths



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 1 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.

Tier 2 studies will include environmental field surveys for the selected corridor(s) carried forward from Tier 1, 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 in Tier 2, any required environmental mitigation concepts and measures identified in Tier 1 will be confirmed and detailed. As part of the more detailed engineering in Tier 2, further refinements to the working alignment (s) will be evaluated within the Tier 1 recommended corridor(s) in order to avoid or minimize impacts and to define the actual required right-of-way, which is anticipated to vary from 400 foot wide (limited access) or 200 foot wide (arterial) work alignments widths in Tier 1. 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.

3.0 Alternatives Evaluation

The overall 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 alternatives.

3.1 Alternatives 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 alternatives. 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, and the 2040 No-Build alternative. A comparison of each alternative to the No-Build alternative was made, as well as a relative comparison of travel performance between the alternatives. 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 points.

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 alternatives should be dismissed based on having disproportionately poor overall travel performance in comparison to the No-Build Alternative and the other Build Alternatives.

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

Alternatives 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 refinements included moving the location of the working alignment to further minimize socioeconomic and environmental impacts to the extent practical and feasible.

It should be noted that stakeholder input played a key role in the alternatives refinement process. Stakeholders provided 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.

In addition, a qualitative assessment of flexibility with respect to accommodating potential future multi-purpose uses was considered at 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 in this analysis for informational purposes in response to comments from resource agencies.

Throughout the alternatives evaluation process, stakeholder input gathered from CPG meetings, Public Meetings, individual stakeholder meetings, the project website, and written comments was considered. This stakeholder coordination will be documented in the Tier 1 DEIS.

3.2 Initial Round Alternatives Evaluation

An initial Purpose and Need modal evaluation was first performed to identify which alternatives met 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 was to identify the alternative corridors with comparatively better performance and lesser impacts to be carried forward for more detailed evaluation.

3.2.1 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 TSPR⁴. 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 BNSF Railway, CSX Transportation, Norfolk Southern, Union Pacific, and assisted by Canadian National, Canadian Pacific, and Kansas City Southern railroads. The study assessed the long term capacity expansion and investment needs of the U.S. 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 addition, based on discussions with Union Pacific, Norfolk Southern, and Canadian National 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, no east-west freight railroad corridor needs were identified in the Study Area. On this basis, there is no planned expansion of east-west rail capacity in the Study Area with the 2040 planning horizon, and therefore Rail Freight 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, which are the closest existing commercial airport facilities with regularly scheduled passenger service. The South Suburban Airport (SSA) is proposed as an “inaugural” airport for 2040 planning purposes which is anticipated to generate minimum surface traffic within the context of regional transportation needs.

⁴ Available at: <http://illianacorridor.org/informationcenter/library>. Refer to pages 146-149.

These transportation modes, along with the other potential transportation modes included in the project toolbox as discussed in Section 2.2, as well as general multi-purpose corridor use, will be considered as potential location specific complementary components of the selected alternative, but not as stand-alone modal alternatives. Similarly, lower cost, transportation system management, travel demand management, intelligent transportation systems, and other related congestion management strategies will be considered as potential location specific complementary components of the selected alternative, but not as stand-alone modal alternatives.

On this basis, these multi-modal transportation components are not evaluated in further detail in the Tier 1 DEIS, but will be considered in Tier 2 with detailed development of the selected corridor. The ability for each alternative to accommodate these potential future multi-purpose uses varies based on natural environmental and community/land-use constraints.

3.2.2 Initial Travel Performance Evaluation

This evaluation involved an analysis of the travel performance of the initial alternatives. Given the uncertainty at this stage whether the implementation of any of these initial build alternatives will involve tolling, the limited access alternatives (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 1 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 were estimated using the regional travel demand forecasting model.⁵ The results are presented for the forecast year 2040 assuming a No Build socioeconomic forecast⁶ for relative comparison to the 2040 No-Build (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.

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

- Address Regional Mobility
 - Address projected growth in regional east-west travel: *Regional east-west daily vehicle hours of travel*. Regional east-west daily vehicle hours of travel measures the total time spent traveling by all vehicles on all roads in the east-west direction within the region as shown in Figure 1-1. For the regional measures, the performance of each alternative was measured against the No-Build 2040 baseline

⁵ Illiana Corridor Study Travel Demand Model Documentation, April 2012. Will be included as an appendix to the Tier 1 DEIS.

⁶ Illiana Corridor Study Historic and Forecasted Growth of Employment and Population in the Extended Region of Chicago, February 2012. Will be Included as an appendix to the Tier 1 DEIS.

- to determine the cumulative transportation benefit to the entire northeast Illinois/northwest Indiana region. The 18 county area adequately captures this measurement of regional benefit. A decrease in regional east-west vehicle hours of travel for the alternatives as compared to the No-Build Alternative shows that east-west travel is improved by the alternative, resulting in faster speeds and lower travel times.
- Reduce regional travel delay/improve regional travel times: *Region daily vehicle hours of travel.* Region daily vehicle hours of travel measures the total time spent traveling by all vehicles. A decrease in region hours of travel for the alternatives as compared to the No-Build Alternative shows that congestion is improved by the alternative, resulting in faster speeds and lower travel times.
 - Improve access to jobs: *Number of jobs accessible in 30 minutes.* 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 alternatives as compared to the No-Build Alternative shows that congestion and travel times are improved by the alternative, resulting in greater accessibility to jobs from the Study Area.
 - Address Local System Deficiencies
 - Address projected growth in local traffic: *Study Area daily congested vehicle miles of travel on arterials; new transportation facility average daily traffic (all vehicles and trucks).* Study Area daily congested vehicle miles of travel by all vehicles on arterials measures the vehicle miles of travel that are occurring under congested conditions on all arterial roads in the Study Area. For the arterial alternatives A-1 and B-2, this measure includes the new arterial roadways. A decrease in Study Area congested vehicle miles of travel for the alternatives as compared to the No-Build Alternative shows that congestion is improved by the alternative on arterial roads in the Study Area. New transportation facility average daily traffic 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: *New lane miles of interstate; new lane miles of other principal arterials.* New lane miles of interstate measures the number of new lane miles of limited access east-west interstate type facility added by the alternative 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 in the Study Area. Currently, there are no east-west interstates or other east-west multi-lane through roads in the Study Area. Since all of the build alternatives 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.

- Reduce local travel delay/improve local travel times: *Study Area daily vehicle hours of travel on arterials.* Study Area daily vehicle hours of travel measures the total time spent traveling on all arterial and local roads in the Study Area. For the arterial alternatives A-1 and B-2, this measure includes the new arterial roadways. A decrease in Study Area vehicle hours of travel for the alternatives as compared to the No-Build Alternative shows that congestion is improved by the alternative, resulting in faster speeds and lower travel times on arterials in the Study Area.
- Provide for Efficient Movement of Freight
 - Improve accessibility for freight facilities: *Study Area daily truck miles of travel on arterials.* Study Area daily truck miles of travel on arterials measures the total vehicle miles of travel by trucks on arterial roads in the Study Area. For the arterial alternatives A-1 and B-2, this measure includes the new arterial roadways. A decrease in truck miles of travel on arterials in the Study Area for the alternatives as compared to the No-Build Alternative shows that there is less truck traffic on arterial roads in the Study Area, resulting in reduced truck conflicts on local roads in the Study Area.
 - Provide more efficient freight movement: *Regional daily truck hours of travel.* Regional daily truck hours of travel measures the total time spent traveling on all roads in the region for all truck vehicles. A decrease in regional truck hours of travel for the alternatives as compared to the No Build Alternative shows that truck congestion is improved by the alternative, resulting in faster truck speeds and lower truck travel times.

The two best performing alternatives per criterion are shaded green and the two worst performing alternatives per criterion are shaded orange. However, it is noted that for some criteria there are more than two alternatives with the two best or worst results based on having identical values, which results in more than two alternatives being shaded. For criteria with vehicle hours of travel measures, a negative value demonstrates an improvement over the No-Build Alternative. For criteria with job accessibility and traffic volumes on the build alternative, a positive value demonstrates an improvement over the No-Build Alternative.

3.2.2.1 Non-Tolled Travel Performance

The initial alternatives were tested using the regional travel demand forecasting model. The analysis results assuming no tolls are presented in Table 3-1 based on the variance as compared to the 2040 No-Build Alternative.

The limited access alternatives had much better travel performance than the arterial alternatives. Arterial Alternatives A-1 and B-2 had the lowest travel performance for nearly every criteria.

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

3.2.2.2 *Tolled Travel Performance*

The analysis results assuming tolls are presented in Table 3-2. 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)
- 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 alternatives, and the wide range of potential tolling approaches and levels, the regional travel demand forecasting model was not run multiple times for each alternative under a range of tolling approaches and levels. Rather, sensitivity tests using the regional travel demand forecasting model were performed to see how the travel performance evaluation criteria changed under differing toll assumptions. Based on the sensitivity tests, 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 alternatives (as compared to the non-tolled scenario) would remain on the initial build alternatives 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 3-2 based on the variance as compared to the 2040 No-Build Alternative. As noted in Tables 3-1 and 3-2, the arterial alternatives 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 alternatives had much better travel performance than the arterial (non-tolled) alternatives. Arterial Alternatives A-1 and B-2 had the lowest travel performance for nearly every criteria.

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

Table 3-1. Travel Performance Evaluation Matrix (Non Tolled) ¹

Travel Performance Measure	2040 No Build	ALTERNATIVE									
		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
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
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
Address Local System Deficiencies											
Address Projected Growth in Local Traffic											
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
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
Reduce Local Travel Delay / Improve Local Travel Time											
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
Provide for Efficient Movement of Freight											
Improve Accessibility For Freight Facilities											
Study Area Truck Miles of Travel on Arterials	1,459,000	-152,000	-162,000	-142,000	-112,000	-164,000	-142,000	-85,000	-60,000	1,700	700
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

¹ The length of New Lane Miles of Interstate 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 3-2. Travel Performance Evaluation Matrix (Tolled) ^{1, 2}

Travel Performance Measure	2040 No Build	Toll Traffic	ALTERNATIVE									
			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		
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		
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
Address Local System Deficiencies												
Address Projected Growth in Local Traffic												
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		
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
Reduce Local Travel Delay / Improve Local Travel Time												
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		
Provide for Efficient Movement of Freight												
Improve Accessibility For Freight Facilities												
Study Area Truck Miles of Travel on Arterials	1,459,000	25% retained	-95,000	-101,000	-89,000	-70,000	-103,000	-89,000	-53,000	-38,000	1,700	700
		75% retained	-132,000	-141,000	-123,000	-97,000	-143,000	-123,000	-74,000	-52,000		
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		

¹ The length of New Lane Miles of Interstate 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:

3.2.2.3 Conclusion

With the uncertainty at this early stage of the study as to whether tolling would be implemented on limited access facilities, the initial alternatives 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% of the traffic being retained. There was a notable reduction for some of the travel performance criteria based on 25% of the traffic being retained.

With Arterial Alternatives A-1 and B-2 having the worst travel performance under both scenarios, they are recommended not to be carried forward. In addition, Alternative C4 was the worst performing of all the limited access alternatives in both no toll and tolled scenarios by a fairly wide margin. Consequently, Alternative C4 is not recommended to be carried forward.

3.2.3 Initial Socioeconomic and Environmental Impact Evaluation

This evaluation involved a comparative analysis of the socioeconomic and environmental impacts for each of the initial alternatives. The resulting evaluation matrix is shown in Table 3-3.

The evaluation criteria for socioeconomic and environmental impacts for each initial alternative were estimated using the project GIS database⁷, which includes a wide range of environmental and socioeconomic databases covering the Study Area. The impacts were assessed using the working alignment within each alternative corridor, which was 400 feet wide for the new limited access alternatives and 200 feet wide for the arterial alternatives. The working alignments were generally located within the middle of the alternative corridors with some refinements to avoid and minimize impacts to the greatest extent practical within the corridor.

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

- Alignment length: Alignment length, measured in miles, shows the total length of the new facility for each alternative. 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 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 in Tier 2.

⁷ Illiana Corridor Study Geographic Information System Technical Documentation, June 2011.

- Threatened and Endangered Species: Threatened and endangered species impacts, measured in acres, represents the potential area of habitat for known occurrences of protected species based on published data.
- Floodplain impacts: Floodplain impacts, measured in acres, represent the potential area of floodplains within the working alignment of each alternative. In general, floodplains are the areas adjacent to a river or stream that have been or maybe covered by floodwater at or below the 100-year frequency flood elevation. Floodways, which are the channel of a river or stream and the parts of the floodplain adjoining the channel that are reasonably required to efficiently carry and discharge the flood waters or flood flows of a river or stream, are a better measurement of impacts, and will be addressed in Tier 2.
- 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. In general, an impaired stream has a pollution problem preventing it from meeting one or more beneficial uses (for example, recreation, fish habitat, drinking water) of the stream.
- Water bodies: Water bodies, measured in acres, show the potential area of water bodies within the working alignment of each alternative. In general, water bodies include lakes, ponds, reservoirs, rivers, and streams.
- 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. 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.
- 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. It should be noted that there may be more than one building impact on an individual parcel of land. Field studies will be undertaken in Tier 2 to verify the number and status of each structure.

The two least impacting alternatives per criterion are shaded green and the two highest impacting alternatives 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 based on having identical values, which results in more than two alternatives being shaded.

As shown in Table 3-3, Alternative B3 has 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 alternatives. Alternatives B3 and Arterial B-2

also have the least number of orange shaded boxes (one); the orange boxes represent the two highest impacting alternatives.

Overall, Alternatives A2, A4, Arterial A-1, C4, A1, and B1 are the most impacting with the highest number of orange shaded boxes. Of this group, Alternative A2 is the most impacting with 9 orange boxes, followed by A4 and Arterial A-1 with 7 orange boxes, Alternative C4 with 6 orange boxes, and Alternatives A1 and B1 with 4 orange boxes each.

In terms of individual impacts, Arterial A-1 has a high number of potential residential and commercial affected building impacts. Arterial A-1 has 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. Given this disproportionately high number of building impacts, it is also recommended that the Arterial A-1 Alternative not be carried forward based on impacts.

Table 3-3. Initial Round Socioeconomic and Environmental Impacts Matrix

EVALUATION 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 Impaired 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
Commercial (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: 

3.2.4 Initial Round Evaluation Summary

All of the limited access alternatives would improve travel performance over the 2040 No-Build Alternative for all travel performance measures. The Arterial Alternatives A-1 and B-2 were projected to perform slightly worse than the 2040 No-Build Alternative for region vehicle hours of travel, Study Area truck miles of travel on arterials, and region truck hours of travel, essentially indicating no improvement in these measures.

The limited access alternatives had much better travel performance than the arterial alternatives. Arterial Alternatives A-1 and B-2 had the lowest travel performance for nearly every criteria and are not recommended to be carried forward.

In looking at the limited access alternatives, the alternatives located in the northern portion of the Study Area tended to have better travel performance than the alternatives located in the central or southern portion of the Study Area. Alternative C4 had the least improvement in travel performance of the limited access alternatives by a wide margin, with the least forecasted average daily traffic and truck volumes. Alternative C4 is not recommended to be carried forward.

With respect to the potential socioeconomic and environmental impacts, Alternatives A3S1 and B3, and Arterial B-2 had the lowest overall impacts based on being one of the two least impacting alternatives for the most criteria (the most “green” colored measures), and/or being one of the two most impacting alternatives for the fewest criteria (the least “orange” colored measures).

Arterial A-1 has 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 for residential and commercial building and total building impacts. Given this disproportionately high number of potential building impacts, Arterial A-1 is also not recommended to be carried forward based on impacts.

As a result, Alternative C4 and Arterial Alternatives A-1 and B-2 were not carried forward for further evaluation. These three initial alternatives had the poorest overall travel performance, and Arterial A-1 has disproportionately high residential and commercial potential building impacts.

In conclusion, Alternatives 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.

3.2.5 Other Potential Alternatives

While the above initial alternatives are being advanced to the second round evaluation, identification of new alternatives and/or potential alternative refinements are expected as a result of ongoing stakeholder coordination and/or based on more detailed technical analysis. Each additional alternative and/or potential refinement will be reviewed based on whether it would be superior with respect to travel performance and/or reduced socioeconomic and environmental impacts, as compared to the alternatives previously

considered and advanced. On this basis, a determination will be made as to whether the new alternative or refinement is carried forward. A number of potential alternative refinements were considered as part of the second round evaluation as discussed in Section 3.3.2. Although this process is expected to continue through the Tier 1 Final EIS stage, this document includes new alternatives and/or potential alternative refinements considered through April 1, 2012.

For example, a potential refinement to the “A” alternatives west of IL Route 53 was brought forth in the process of developing and presenting representative alternatives. This potential refinement is referred to as A1N1 and would include a proposed connection to I-80 at Houbolt/Empress Road via a crossing of the Des Plaines River in Joliet. This potential refinement was evaluated to determine if a travel benefit would be provided as compared to a direct connection to I-55. This refinement would incur potential impacts to Lower Rock Run Preserve and intersects 7 pipe transmission lines. While the potential A1N1 refinement would provide an additional connection to I-80, it results in a longer route for Illiana traffic destined for northbound I-55. This refinement would also result in a downgrade from a fully access controlled facility to an arterial design with surface intersections near I-80, which would operate less efficiently than a fully access controlled facility. Otherwise, there were no measureable travel performance impacts. This potential refinement was not recommended to be carried forward. The A1N1 potential refinement is shown in Appendix A, Figure A-2.

3.3 Second Round Alternatives Evaluation

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

In addition, an assessment of flexibility with respect to 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 that is not located adjacent to developed areas will 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 alternatives to be carried forward in the Tier 1 DEIS, along with the No-Build alternative.

3.3.1 Stakeholder Coordination

As noted above, substantial coordination occurred with project stakeholders to gain their input with respect to the initial alternatives. 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 refinements to be considered. The input received is documented in individual meeting summaries and will be summarized in the Tier 1 DEIS. A summary of the stakeholder comments received on the alternatives is as follows:

- The northern “A” and “1” alternatives resulted in a range of comments from stakeholders. While there was support for a northern alternative from Crete, Merrillville and the South Suburban Mayors and Managers Association (SSMMA) based on travel performance benefits, there was opposition from other stakeholders including Elwood, Manhattan, Monee, University Park, and St. John based on unacceptable impacts. 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” alternatives located as shown. There was also stakeholder concern on the costs of addressing the engineering challenges and impacts of the “A” alternatives 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.
- Alternative B3 received more stakeholder support than any other alternative. Alternative 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.
- The B1 alternative 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.
- The C4 and arterial alternatives did not receive much support, especially after the low travel benefits (for both C4 and the arterials) and degree of impacts (for the arterials) were discussed with the stakeholders.
- 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.

- Diagonal impacts caused by alternatives 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 corridors are 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 alternatives 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 were explained to and understood by stakeholders as affecting the ability to site both the “A” and “B” corridors. In particular, the “A” alternatives likely could not be moved south of Noel Road to avoid CenterPoint-Joliet impacts due to the Joliet Army Training Area (Refer to Figure 3-2, Potential Refinement 1), and the “B” alternatives likewise could not access I-55 via River Road; also, the “B” alternatives will be difficult to interchange with IL Route 53 directly due to the proximity of the Midewin property. Some stakeholders, including Wilmington and others, are receptive to offsetting the proposed IL Route 53 interchange location to the east to avoid complications with Midewin.
- Conflicts with existing planning were identified along the A1 alternative by several communities including Manhattan, University Park, and St. John. These communities were strong in their opposition to A1 as shown, and suggested a re-route of A1 or using a different alternative altogether to avoid the potential land use conflicts. St. John was opposed to a refinement of 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 the B1 alternative due to resulting impacts to a residential area directly adjacent to the SSA site. The Village has dealt with other potential impacts in this area associated with the SSA.
- The A1 alternative as currently proposed will conflict with Governors State University student housing and future commercial development plans. It is possible to realign 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 Alternative A1, and the associated commuter parking area at the Governors Highway/University Parkway intersection. Avoidance of a Will County Forest Preserve property will result in additional impacts to Governors State University property.
- Some stakeholders near the southwestern part of the Study Area were interested in examining alternate connections between the existing “B” and “C” alternatives. 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 A1 was brought to the study team’s attention. Stakeholders indicated these constraints may make the A1 alternative cost-prohibitive. However, Merrillville was a strong

supporter of the 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 alternatives. In particular, Crete offered several variations on a northern alternative 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" alternatives will not address the high amount of trucks traveling east-west along Wilmington-Peotone Road and other east-west roads in the south part of the Study Area. There was diverse stakeholder opinion on whether Illiana should primarily be a reliever route for I-80, or a regional bypass route serving the entire region.
- A few stakeholders favored C4 and inquired into its viability. They were informed that it drew the least projected traffic of all the new access controlled alternatives, and that it was the longest alternative end-to-end. Two communities in the southeastern part of the Study Area asked about the viability of a "B" alternative with a "4" connection to I-65 south of IN Route 2. They were informed of its increased engineering challenges due to floodplain and soils issues and its poorer travel performance similar to C4 due to the southern connection point. The communities understood the logic of keeping the B3 alternative north of IN Route 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 alternatives. Beecher has consistently been concerned about the effect of a B3 corridor in drawing excessive traffic on IL Route 1 through the village; they indicated a long planned western bypass may be needed as a solution to relieve traffic if B3 is built. Coal City was concerned about increased traffic on IL Route 113 and Lorenzo Road if B3 was built. These impacts will be addressed in the Traffic Impacts section of the Tier 1 DEIS.
- Several stakeholders expressed preference for the B3 alternative as the shortest, most direct 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 directly physically impacted by B3, that were near B3, and were a distance from B3.
- Several stakeholders commented that it is logical that the northern alternatives would draw more commuter traffic than central or southern alternatives, but the cost of addressing the impacts may outweigh the additional revenue potential in a tolling scenario.

- No fatal flaws in any of the alternatives were seen by the Forest Preserve representatives, although they requested that elements of the alternatives may need to be moved to avoid impacts, or mitigated if this was not possible.

3.3.2 Potential Alternative Refinements

Based on the stakeholder input received, as discussed above, and based on the ongoing more detailed technical analysis, a number of potential refinements to the second round alternatives were studied to further avoid or minimize socioeconomic and environmental impacts. The potential alternative refinements are further discussed and presented graphically in Appendix A, Figures A-1 through A-28.

Each of these potential alternative 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 second round alternatives include “A” and “B” connection points with I-55 and “1” through “4” connection points with I-65, with these connection points shared by multiple alternatives. 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 the working alignments for multiple alternatives. These areas of highest impact concern and the associated refinements considered are discussed below.

3.3.2.1 The “A” Alternatives

For alternatives with “A” connection points at I-55 (A1, A2, A3, A3S1, A4), the refinement process focused on minimizing impacts to new developments discovered during field visits and stakeholder meetings. To minimize the impacts between I-55 and IL Route 53 it was necessary to consider a refinement to route the working alignment north of CenterPoint Way (refer to Figure A-1). 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 working 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 working alignment south of Noel Road were not considered, as the property south of Noel Road is currently used by the Joliet Army Training Area which is earmarked for transfer to the Midewin National Tallgrass Prairie, and as such is considered a protected land.

From I-55 to IL Route 53, impacts to the built environment are unavoidable. The location of any alternative would be a tradeoff for one impact to another, as there is no clearly lesser-impacting working alignment to connect to I-55. In addition to built environmental impacts, the crossing location at Des Plaines River requires an approximately 5,200’ long bridge to accommodate the terrain in the area. The bridge would require substructure elements within the Des Plaines State Fish and Wildlife property. 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 Route 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” alternatives include an unavoidable crossing of the Historic Route 66 (i.e.; IL Route 53) and will require continued Section 106 consultation to minimize impacts to Historic Route 66.

The working alignment for A1, A2, A3, and A4 intersects I-57 at a location that is constrained with respect to interchange spacing, due to other existing and future interchanges along I-57 (refer to Figure A-4). As a result, east of I-57, the working alignment must turn sharply south to cross Governors Highway and the University Park Metra station at the intersection of Governors Highway and University Parkway. This working alignment location is placed to utilize the undeveloped properties north of the University Park industrial estate. The working alignment is then routed through the Governors State University campus property. A refinement was evaluated in this area to move the working alignment to the north to avoid the Thorn Creek Headwaters Preserve. However, during stakeholder meetings, the study team discovered that the alternative would encroach on a proposed student housing plan at Governors State University. Working alignment refinements are limited in this area, since further refinements to the working alignment 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.

The working alignment for Alternative A2 was reviewed for opportunities to reduce or minimize impacts. However, the working alignment for 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 the alternative would result in additional impacts to one of those categories or adding building impacts. Alternative A2 has disproportionately high impacts to forested areas and wetlands.

The initial working alignment for Alternative A3 was routed south of the Goodenow Grove Nature Preserve. However, it was determined that the working alignment impacted the Beecher Landfill. To avoid or minimize this impact, the working alignment was moved to the north, introducing building impacts and severing the southern portion of a proposed intermodal site. Options to locate the working alignment south of the landfill were considered, but the resulting geometry included impacts to the South Suburban Airport footprint, and the interchange on IL Route 394 would require substantial relocation of Goodenow Road.

Alternative A4 extends the A3 alignment south of the B3 intersection point, then routes south of Lowell and connects to I-65 at the IN Route 2 interchange. Alternative A4 was refined to avoid impacts to the recent improvements on IN Route 2, to avoid the Buckley Homestead park expansion, and finally to avoid the numerous water well sites south of Lowell (refer to Figure A-15). The resulting location encroaches on the Kankakee River

floodplain. This section includes a much higher density of intersecting waterways and complicates the drainage design.

3.3.2.2 *The “1” Alternatives*

At the “1” connection point with I-65, there were also numerous environmental and socioeconomic impacts encountered (refer to Figures A-5, A-6, A-7, and A-8). Alternatives A1 and B1 include several common impacts to residential areas and federally protected Section 4(f) properties as discussed in more detail in Section 3.3.3.1. The shared working alignment for Alternatives A1 and B1 is 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 working 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 Route 41 for the A1 and B1 alternatives would impact the Shrine of Christ’s Passion Sculpture facility.

The “1” connection point alternatives were refined to minimize building impacts by using a narrowed working alignment and 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 transportation facility. This substantially reduced the number of building impacts. However, the refined working alignment would require the complete removal of Homestead Acres Park #2, introducing additional Section 4(f) impacts⁸.

It was concluded from the initial and second round alternatives evaluations that any connection to the “1” end point on I-65 creates unavoidable and severe impacts to the community of St. John. A proposed corridor would divide a residential area and have unavoidable Section 4(f) impacts, regardless of location. In addition to the residential and recreational impacts, the alternatives include a substantial built impact cost when considering the relocation of the transmission and gas lines or the purchase of over 100 residential properties. Similar findings occur in Schererville, where the resulting refinement provided marginal reductions in housing impacts but still included community severance.

3.3.2.3 *The “B” Alternatives*

Alternatives B1 and B3 connect to I-55 at the IL Route 129 interchange location, and continue east on the same alignment until approximately Cedar Road. The initial alignment near IL Route 129 would have required the relocation of Widows Road. A refinement to this connection point was made by moving it south and the system interchange was developed to a conceptual level to confirm that a combined local and interstate access interchange is feasible (refer to Figure A-9). The resulting alternative then

⁸ Section 4(f) refers to the section within the U.S. DOT Act of 1966 which established the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and any publicly or privately owned historic site listed or eligible for listing in the National Register of Historic Places (NRHP) as part of transportation planning. Before approving a project that uses Section 4(f) property, FHWA must establish that the impacts are either *de minimis*, or that there is no feasible and prudent alternative that avoids all Section 4(f) properties.

crosses the Kankakee River requiring a 2500' long bridge (less than half the length of the Des Plaines River crossing). The alternative then runs along an electric transmission line north of Wilmington. Impacts were noted to the IDNR property east of the Kankakee River (i.e.; Des Plaines Fish and Wildlife Area, and the Des Plaines Game Propagation Center), which is a potential Section 4(f) impact. The B1 and B3 alternatives are placed to minimize forested areas and reduce community severances that would be caused by avoiding the IDNR property (refer to Figures A-17, A-18, and A-19). The "B" alternatives also include an unavoidable crossing of the Historic Route 66 (i.e.; IL Route 53) and, similar to the discussion of "A" corridors above, will require continued Section 106 consultation to minimize impacts to Historic Route 66 (refer to Figure A-20).

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

Alternative B3 continues east from Cedar Road to run south of Peotone, and Beecher in Illinois. The alternative then runs parallel to an east-west electric transmission line, crossing West Creek in Lake County. Between Cedar Lake and Lowell, the B3 corridor 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.

As noted, the potential alternative refinements are discussed and presented graphically in Appendix A, Figures A-1 through A-22.

Based on the above evaluation, a number of alternative refinements were carried forward for further evaluation. Figure 3-1 is a composite of the alternative refinements that were carried forward for further evaluation with respect to comparative socioeconomic and environmental impacts.

Figure 3-1. Alternative Refinements Carried Forward

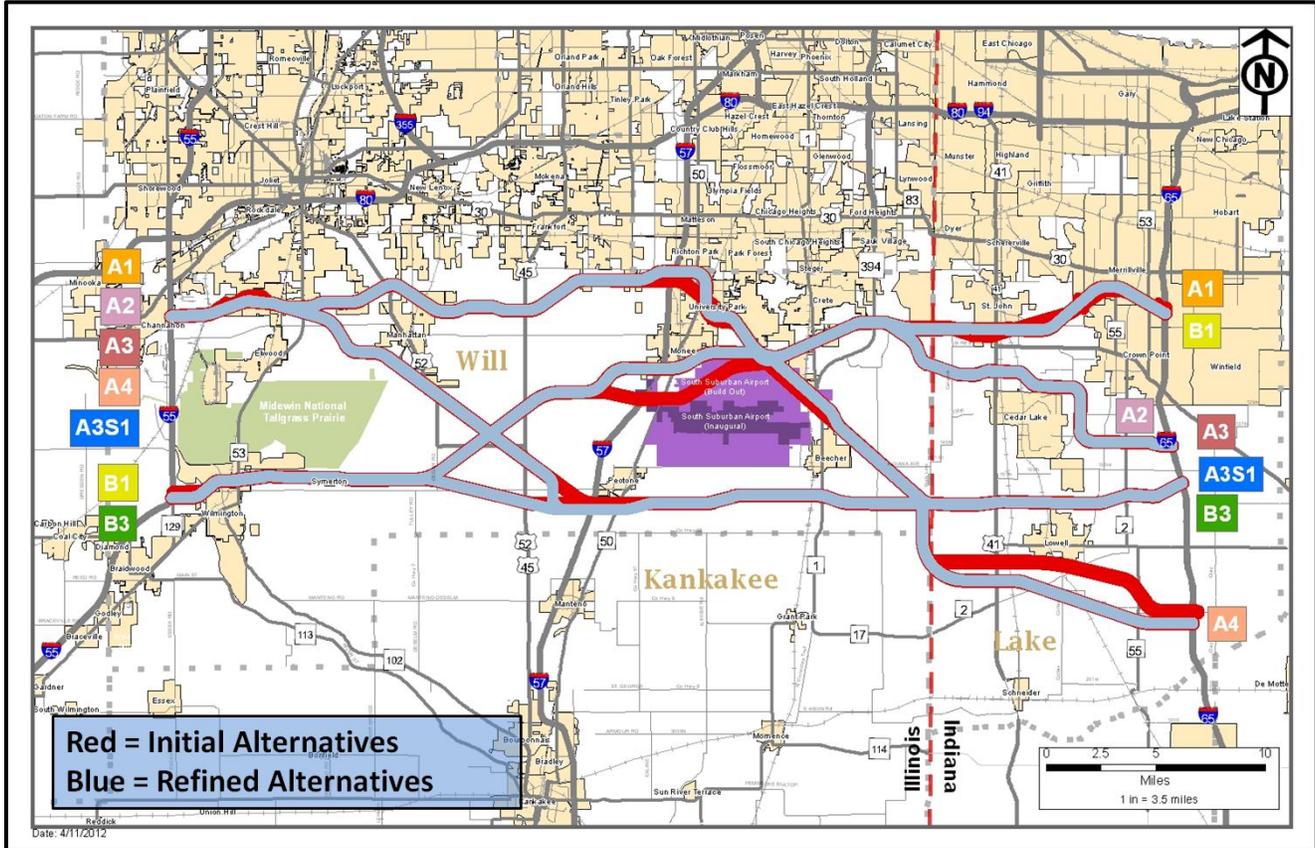


Table 3-4. Second Round Socioeconomic and Environmental Impacts

EVALUATON CRITERIA	ALTERNATIVE						
	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)	50.2	54.5	31.3	30.9	31.4	45.5	10.1
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	128.7	148.9	211.3	368.3	235.5	253.0
Total Stream Impacts (miles)	2.3	2.5	3.0	3.2	4.9	3.4	3.2
Total Impared Streams Impacts (miles)	2.5	2.1	1.9	2.4	2.1	3.5	1.9
Water Bodies (Rivers, Lakes, Ponds) (acres)	16.7	17.7	22.1	20.4	15.6	12.4	9.7
Parks/Nature Preserves/Natural Areas (acres)							
Total Park & Nature Areas Impacts	53.9	11.8	11.8	11.8	11.8	58.1	16.0
Total Forested Areas Impacts (acres)	69.6	146.5	77.8	68.6	37.0	43.2	43.3
Total Trail Impacts (miles)	4.7	3.7	3.7	0.3	3.7	1.0	0.1
Special Use (acres)							
Farmland (acres)	2449.0	2574.0	2551.9	2443.5	2712.9	2348.4	2273.3
Landfills (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)	31.1	15.5	13.7	4.5	14.0	11.6	5.2
Affected Buildings (each)							
Residential (each)	96.0	77.0	54.0	41.0	46.0	234.0	41.0
Commerical (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: 

3.3.3.1 Potential Community, Ecological and Special Lands Impacts

The most substantial potential impacts remaining for the refined alternatives were identified and reviewed to assess whether these impacts can be mitigated. A summary of potential community based impacts is presented in Table 3-5 below and a summary of potential ecological and special lands (Section 4(f)) impacts is presented in Table 3-6.

Table 3-5. Potential Community Based Impacts

Community	Feature	Location	Impact	Potential to Avoid, Minimize, Mitigate	Impacting Alternatives
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	Governors State University	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 Route 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 1 residence and 2 Commercial /Business buildings.	Unavoidable. Refined working alignment would have greater impacts.	B1, B3

Table 3-6. Potential Impacts on Parks, Recreation Areas, Refuges, and Historic Properties¹ (Section 4(f) Impacts)

Community	Feature	Location	Impact	Potential to Avoid, Minimize, Mitigate	Impacting Alternatives
Joliet	IL Route 53/Historic Route 66	Proposed interchange with Historic Route 66 (i.e.; IL Route 53)	Potential Section 4(f) – historic section and Scenic Byway (NPS)	Unavoidable crossing of IL Route 53. Interchange refinement options will be considered per coordination with IL SHPO.	A1, A2, A3, A4, A3S1
Crete	Will County Forest Preserve – Plum Valley Preserve	Proposed interchange at IL Route 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
	Des Plaines State Fish and Wildlife Area	North of Kankakee River	Crossed as proposed – Potential Section 4(f) impact	Avoidable – coordination ongoing with IDNR to minimize impacts. Possible <i>de minimis</i> finding.	B1, B3
	Midwin National Tallgrass Prairie	River Road	Incidental encroachment onto Midwin with interchange	Avoidable – IL Route 53/Route 66 interchange refinement options will avoid encroaching onto Midwin.	B1, B3
	IL Route 53/Historic Route 66	Proposed interchange with Historic Route 66 (i.e.; IL Route 53)	Potential Section 4(f) – historic section and Scenic Byway (NPS)	Unavoidable crossing of IL Route 53. Interchange refinement options will be considered per coordination with IL SHPO.	B1, B3
Cedar Lake	West Creek	Proximity to protected species habitat	T&E habitat issues (barn owl)	Outside 2000-foot corridor; Tier 2 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 2.	B3

¹ Historic Properties in the Study Area have not been fully identified, as discussed in Section 2.3.

A review of Table 3-5 indicates that the northern refined alternatives (A1, A2, A3, A3S1, A4, and B1) would result in a number of substantial and unavoidable community based impacts. These alternatives would also have several potential unavoidable ecological and special lands (Section 4(f)) impacts as indicated in Table 3-6. Some of the potential ecological and special lands (Section 4(f)) impacts associated with Alternatives B1 and B3 in Wilmington and Cedar Lake appear to be unavoidable. Feasible and prudent alignment refinements within these corridors will continue to be evaluated to avoid or minimize these impacts to the extent practical.

3.3.3.2 *Diagonal Property Severances*

As shown in Figure 2-5, substantial portions of the Study Area are covered by rural land classified as agricultural. As discussed in Section 3.3.1, 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 more difficult access for farm machinery and have diminished utility.

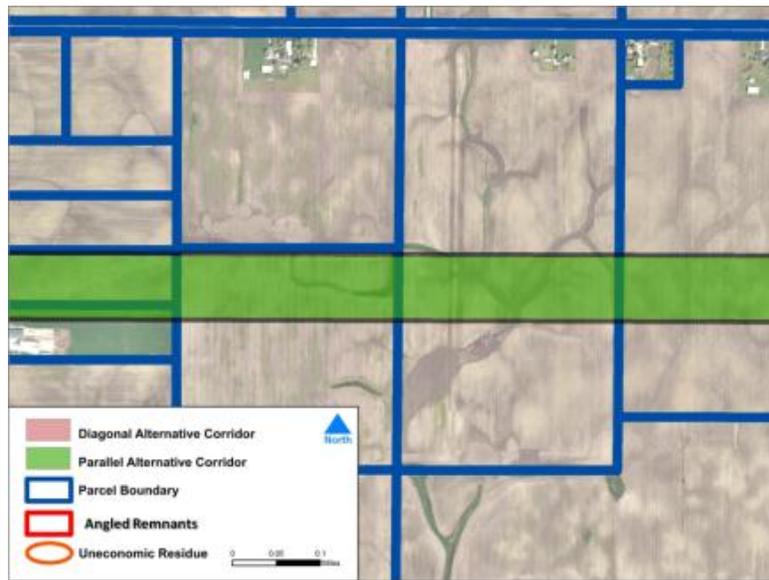
As shown in the example in Figure 3-2, alternatives with alignments that are diagonal to established property lines creates angular and irregular shapes that are considered to have substantially less utility as agricultural land. In addition, the irregularly shaped remnant parcels often have access issues that create additional cost to the property owner associated with additional field entrances, field tiles, drainage culverts, fences etc.

As shown in the example in Figure 3-3, alternatives whose alignments are perpendicular or parallel to property lines generally produce fewer remaining angled parcels, and less potential for uneconomic remnant parcels.

Figure 3-2. Land Use Impacts for Diagonal Alternatives



Figure 3-3. Land Use Impacts for Non-Diagonal Alternatives



On this basis, each of the alternatives with a predominant diagonal alignment component, which includes Alternatives 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 3-7.

Table 3-7. Agricultural Land Diagonal Parcel Severances

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

3.3.3.3 Potential Cultural Resource Impacts

Potential cultural resource impacts associated with the refined alternatives were reviewed. Cultural resources include above ground historic buildings and sites as shown on Figure 2-8, and identified below ground archeological and historic resources. Since potential Cultural Resource impacts can be both direct or indirect based on proximity, potential impacts were reviewed for the 400-foot working alignment, and for the 2,000-foot wide corridor, plus an additional two-mile wide area of potential effects.

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. 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 Route 66 was 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 alternatives is shown in Table 3-8.

In addition to the resources shown on Figure 2-8, there are many other structures 50 years of age or older throughout the study area in both Indiana and Illinois. Some of these structures may be eligible for the NRHP. Therefore, any of the build alternatives under consideration in this report could adversely affect one or more historic properties (in addition to any impacts identified as part of this report). 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 as part of the Tier 1 DEIS. Field surveys will be conducted during Tier 2 to identify any resources more than 50 years of age that were not previously identified or evaluated for NRHP eligibility.

Table 3-8. 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 (Study Area Constraints) for sources of Cultural Resource information.

3.3.4 Second Round Evaluation Summary

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

Although the northern alternatives (“A” and “1” alternatives) that are close to population centers have the best overall travel performance (including generating the most traffic), they would result in greater impacts. The results of the overall second round alternatives evaluation, which included refinements to these alternatives where practical and feasible to minimize impacts, shows that the northern alternatives 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 alternatives:

- Alternatives A1 and A2 have 5 times the wetland impacts of Alternative B3.
- Alternatives A1 and A2 have 1.6 to 3 times to forested area impacts of Alternative B3.
- The “A” Alternatives include a one mile long bridge at the Des Plaines River, approximately twice the length and construction cost of a similar Kankakee River crossing at the “B” start point along I-55.
- Alternative A1 impacts 2 to 6 times the major utility facilities of any other alternative.
- The northern alternatives in general have limited opportunity for future expansion due to density of the existing built environment. The working alignments for Alternatives A1 and B1 are narrow in several places to avoid numerous building

impacts, and are severely restricted for consideration of future expansion or accommodation of multimodal opportunities.

- Alternatives A1 and B1 have up to three times the building impacts of any other alternative. Alternative B3 has the lowest number of building impacts of any alternative.
- Alternatives A1 and B1 have the highest impacts to nature areas including a 5000' impact to Homestead Acres Park Section 4(f) resource in St. John, IN.
- The northern alternatives are less compatible with local community development plans.
- Although Alternative A1 shows the best overall travel performance, the overall impacts and associated costs with achieving a viable route results in Alternative A1 as being relatively undesirable.

Although the central Alternative B3 that is located through less densely developed areas has moderate travel performance when compared to the northern alternatives, Alternative B3 would have notably lower impacts than all other alternatives. Alternative B3 has the best balance of minimizing impact and travel performance and has the highest overall support from project stakeholders. Below is a summary of the findings for the second round evaluation with respect to Alternative B3.

- Alternative B3 has lowest forest impacts compared to the northern alternatives.
- Alternative B3 impacts to recreational facilities are limited to a crossing of three trails.
- Alternative B3 would require a bridge over the Kankakee River that is 2500 feet long and approximately half the construction cost of the one mile long Des Plaines River crossing associated with the "A" alternatives.
- Although there are property impacts with Alternative B3, they are notably less than the property impacts associated with the northern alternatives.
- Alternative B3 will serve as a more regional route, which will increase truck volumes as compared to the northern alternatives.
- Alternative B3 has less than 3 miles of total utility relocations.

Each of the alternatives that include a diagonal component (A3, A4, A3S1, and B1) would also 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 potential cultural resources, the areas of high sensitivity are predominately located in more urban areas which are more associated with the northern alternatives. Based on the available data, the higher concentrations of 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, the NRHP-listed Historic Route 66 (IL Route 53) is a significant historic resource which is potentially affected by each of the second round alternatives where they would cross IL Route 53. This resource traverses the Study Area from Wilmington north to Joliet and will require continuing Section 106 consultation to minimize impacts.

Alternatives B1 and B3 are noted to 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 ear-leaf fox glove 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 (assumed to be approximately 100 plants).

The build alternatives would not impact known federal threatened or endangered species; 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 studies.

On the above basis, Alternative B3 has the highest overall support from project stakeholders and the lowest overall socioeconomic and environmental impacts. Alternative B3 represents the best combination of acceptable travel performance and minimization of socioeconomic and environmental impacts. Therefore, Alternative B3 was recommended to be carried forward with the No-Build alternative for detailed evaluation in the Tier 1 DEIS.

3.3.4.1 Additional Factors

Flexibility with respect to accommodating potential future multi-purpose corridor uses was assessed at 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 assessed for informational purposes in response to comments from resource agencies, as supporting information for the recommended alternative 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 alternatives for the reasons described below.

Flexibility for 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. Alternatives 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 guideway 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.

Alternative 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 for the “A” and “1” alternatives. Alternative 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 Alternative A1 include Channahon, University Park, Crete, St. John, Schererville, and Merrillville. For instance, the majority of the A1 corridor 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, the A1 alternative 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, Alternative B3 has 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 alternatives to carry forward for detailed study in the Tier 1 DEIS. The Tier 1 DEIS will include a preliminary assessment of financial viability for the alternatives carried forward for detailed study. That preliminary assessment will be based on assumptions regarding potential traffic volumes, tolling scenarios, project costs, and potential financing structures. More detailed analysis of financial viability will be developed during the Tier 2 process as the alternative corridors and subsequent working alignments are further developed.

4.0 Additional Alternatives to be Carried Forward

The preliminary recommendation to carry forward Alternative B3 in the Tier 1 DEIS 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 alternatives development and evaluation process, and the Alternative B3 recommendation.

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 Information Meeting #3. A more detailed summary of Public Information Meeting #3 and the stakeholder comments received will be included in the Tier 1 DEIS.

The Chicago Metropolitan Agency for Planning (CMAP) suggested that a northern alternative, 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 be carried forward in the Tier 1 DEIS.

Representatives of the Midewin National Tallgrass Prairie (a unit of the US Forest Service/USDA), the Environmental Law and Policy Center, and the Openlands Project expressed concern with potential impacts to the prairie from Alternative 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 Alternative 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 similar to A3S1 with a less diagonal orientation.

Concerns regarding potential impacts associated with Alternative B3 were expressed by the Towns of Cedar Lake and Lowell. Both towns requested that Alternative 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 South Suburban Mayors and Managers Association (SSMMA) and the Village of Crete expressed concerns that Alternative B3 might not adequately serve the Study Area and requested further evaluation of a potential northern alternative that would avoid the impacts at Governors State University and the Town of St. John.

4.2 Identification of Additional Alternatives

In order to further evaluate concerns expressed by Cedar Lake and Lowell, a new alternative was identified which essentially combines B3 west of the Illinois/Indiana state line, with C4 east of the state line. Following the alternatives naming convention, this new

alternative is named B4 and is shown in Figure 4-1. The eastern portion of this new alternative is also shown as an alternative refinement carried forward in Appendix A, Figure A-22.

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 based predominantly on travel benefits. In order to further evaluate a northern alternative that avoids or minimizes the previously discussed major impact areas, a new alternative was identified that attempts to avoid these impact areas near Manhattan, University Park, Crown Point, Schererville, and St. John as discussed in Sections 3.3.1 and 3.3.2. This alternative is a combination of previously considered Alternatives A3S1, B1, and A3 that incorporates an “A” connection point with I-55, a “3” connection point at I-65, a recommended A3S1/B1 connection refinement (refer to Figure A-10) and stays north of the SSA. This alternative is shown as an alternative refinement carried forward in Appendix A, Figure A-25. Following the naming convention, this new alternative is named A3S2 and is shown in Figure 4-2.

4.3 Evaluation of Additional Alternatives

On the above basis, and as discussed in Section 3.2.5, the identified new Alternatives B4 and A3S2 were evaluated to determine how they compare to the alternatives previously considered with respect to travel performance and/or socioeconomic and environmental impacts. Tables 4-2 and 4-3 present a comparison of travel performance for Alternatives B4 and A3S2 with the 10 initial alternatives.

Table 4-4 presents a comparison of socioeconomic and environmental impacts for Alternatives B4 and A3S2, with the 10 initial alternatives. It is noted that Table 4-4 reflects the initial round impact results for Alternatives C4, A-1 and B-2, and the second round impact results for Alternatives A1, A2, A3, A3S1, A4, B1, and B3 based on the refinements made to these alternatives as part of the second round evaluation.

Figure 4-2. Alternative A3S2



Date: 4/11/2012 Path: T:\16978\Tier 1\Exhibits\9. ACFT\Map\Alternatives Map 20120410.mxd

4.3.1 Travel Performance

As in Section 3.2.2, travel performance for the new Alternatives B4 and A3S2 was evaluated using both non-tolled and tolled scenarios. As shown in Tables 4-2 and 4-3, Alternatives B4 and A3S2 would improve travel performance as compared to the 2040 No-Build Alternative for all travel performance measures. Comparing B4 and A3S2 to the 10 initial alternatives, neither alternative performs as well as the northern-most alternatives, but they perform similar to Alternative B3.

In comparing Alternatives B4, A3S2 and B3, they generally demonstrate similar travel performance improvement over the 2040 No-Build Alternative with the main exception being that Alternative B4 is projected to carry approximately 20 percent and 25 percent less average daily total traffic and truck traffic than Alternatives A3S2 and B3 respectively.

4.3.2 Socioeconomic and Environmental Impacts

In reviewing Table 4-4, Alternative B4 is similar to Alternative B3 and would be among the least impacting alternatives overall as compared to the 10 initial alternatives, although it has notably the highest floodplain impacts. Alternative A3S2 is a mix of comparatively high impacts for some criteria and low impacts for others. A3S2 has comparatively high impacts to existing business parks, intermodal facilities, wetlands, and water bodies. A3S2 has comparatively low impacts with respect to T&E species and overall building impacts.

Table 4-1 compares the agricultural land diagonal parcel severances for Alternatives A3S2, B3 and B4. Alternatives A3S2 and B4 would have a notably higher instance of angled parcel acquisitions and higher potential for uneconomical remnant parcels in agricultural areas.

Table 4-1. Agricultural Land Diagonal Parcel Severances

A3S2	B3	B4
81	0	83

Table 4-5 compares the potential impacts for Alternatives A3S2, B3 and B4 on known cultural resources. The potential impacts within the 400-foot working alignment are nearly the same for all three alternatives. 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 each alternative's overall impacts on historic properties at this stage of the NEPA process. Field surveys will be conducted during Tier 2 to identify any resources more than 50 years of age that were not previously identified or evaluated for NRHP eligibility.

Table 4-2. Travel Performance Matrix with B4 and A3S2 (No Tolls)

Travel Performance Measure	2040 No Build	ALTERNATIVE											
		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
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
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
Address Local System Deficiencies													
Address Projected Growth in Local Traffic													
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
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 Limited Access Highway	-	196	212	210	201	224	194	187	195	204	231	0	0
New Lane Miles of Other Principal Arterials	-	0	0	0	0	0	0	0	0	0	0	102	106
Reduce Local Travel Delay / Improve Local Travel Time													
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
Provide for Efficient Movement of Freight													
Improve Accessibility For Freight Facilities													
Study Area Truck Miles of Travel on Arterials	1,459,000	-152,000	-162,000	-142,000	-112,000	-164,000	-142,000	-85,000	-90,000	-90,000	-60,000	1,700	700
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

Highest Travel Benefit: 

Lowest Travel Benefit: 

Table 4-3. Travel Performance Matrix with B4 and A3S2 (Tolling) ^{1, 2}

Travel Performance Measure	2040 No Build	Toll Traffic	ALTERNATIVE											
			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		
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		
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
Address Local System Deficiencies														
Address Projected Growth in Local Traffic														
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		
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	6,000	5,000	20,000	8,000
		75% retained	36,000	30,800	30,800	27,000	29,300	30,000	26,300	21,000	18,000	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 Limited Access Highway	-		196	212	210	201	224	194	187	195	204	231	0	0
New Lane Miles of Other Principal Arterials	-		0	0	0	0	0	0	0	0	0	0	102	106
Reduce Local Travel Delay / Improve Local Travel Time														
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		
Provide for Efficient Movement of Freight														
Improve Accessibility For Freight Facilities														
Study Area Truck Miles of Travel on Arterials	1,459,000	25% retained	-95,000	-101,000	-89,000	-70,000	-103,000	-89,000	-53,000	-56,000	-56,000	-38,000	1,700	700
		75% retained	-132,000	-141,000	-123,000	-97,000	-143,000	-123,000	-74,000	-78,000	-78,000	-52,000		
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		

¹ The length of New Lane Miles of Interstate 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:

Table 4-4. Socioeconomic and Environmental Impact Matrix with B4 and A3S2

EVALUATON CRITERIA	ALTERNATIVE											
	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
Total Wetland Impacts (acres)	50.2	54.5	31.3	30.9	31.4	45.5	10.1	9.2	57.6	11.9	52.3	34.1
Total T&E 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	128.7	148.9	211.3	368.3	235.5	253.0	469.2	223.7	181.3	195.5	186.5
Total Stream Impacts (miles)	2.3	2.5	3.0	3.2	4.9	3.4	3.2	2.9	3.8	9.7	3.1	2.8
Total Impared Streams Impacts (miles)	2.5	2.1	1.9	2.4	2.1	3.5	1.9	2.2	2.2	9.5	2.3	2.4
Water Bodies (Rivers, Lakes, Ponds) (acres)	16.7	17.7	22.1	20.4	15.6	12.4	9.7	3.0	22.7	24.3	7.7	10.9
Parks/Nature Preserves/Natural Areas (acres)												
Total Park & Nature Areas Impacts	53.9	11.8	11.8	11.8	11.8	53.6	11.4	8.6	13.7	47.1	27.2	4.7
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)	4.7	3.7	3.7	0.3	3.7	1.0	0.1	0.2	0.9	0.0	4.6	0.2
Special Use (acres)												
Farmland (acres)	2449.0	2574.0	2551.9	2443.5	2712.9	2348.4	2273.3	2366.9	2478.2	2544.7	2240.6	2251.7
Landfills (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 (miles)	31.1	15.5	13.7	4.5	14.0	11.6	5.2	8.2	6.1	2.0	29.2	2.9
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
Commerical (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: 

Table 4-5. Potential Cultural Resource Impacts

CULTURAL RESOURCES ¹	ALTERNATIVE		
	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 (Study Area Constraints) for sources of Cultural Resource information.

4.4 Summary of Additional Alternatives Evaluation

Based on the above analysis for Alternatives B3, B4, and A3S2, Alternative B3 is the least impacting alternative, followed by B4 and then A3S2. All three alternatives show very similar travel performance improvement over the 2040 No-Build Alternative, with the exception that Alternative B4 is projected to carry less average daily total traffic and truck traffic than the B3 and A3S2 Alternatives. On this basis, it is recommended that Alternatives B3, B4 and A3S2 be carried forward along with the No-Build Alternative for detailed analysis in the Tier 1 DEIS.

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

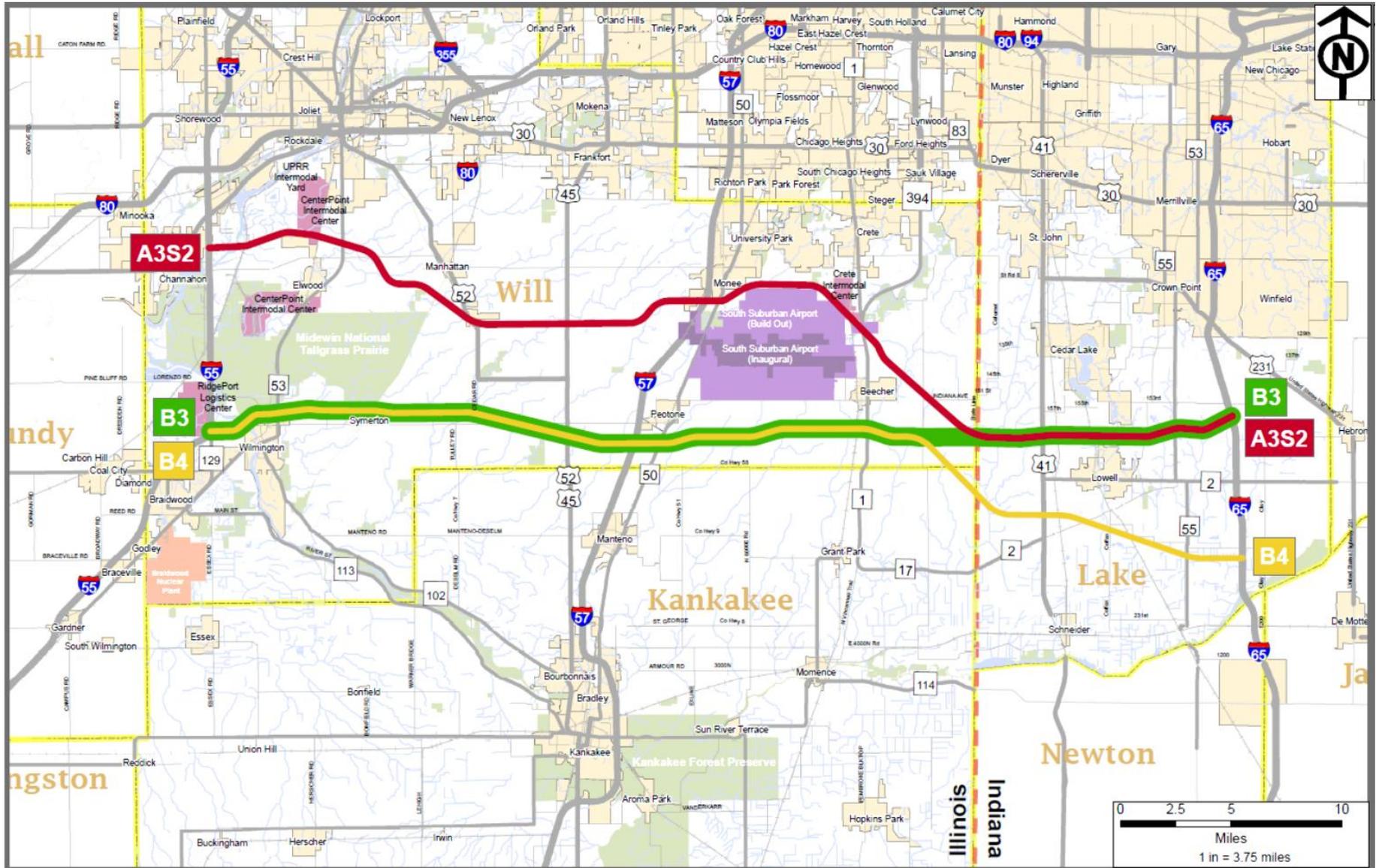
5.0 Conclusion

Each step of the alternatives evaluation process was used to collectively form the basis for a determination of the alternatives to be carried forward for detailed evaluation in the Tier 1 DEIS for the Illiana Corridor Study.

The evaluation of travel performance, and socioeconomic and environmental impacts were key considerations in the overall alternatives development and evaluation process. In addition, extensive input from project stakeholders with respect to alternative corridor acceptability as well as suggested corridor refinements was considered as part of the second round alternatives 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 analysis, and in consideration of the entire alternatives evaluation process, the results support the conclusion that Alternatives B3, B4, and A3S2 (refer to Figure 5-1) should be carried forward along with the No-Build alternative for detailed evaluation in the Tier 1 DEIS.

Figure 5-1. Recommended Alternatives to be Carried Forward in Tier 1 DEIS



Appendix A

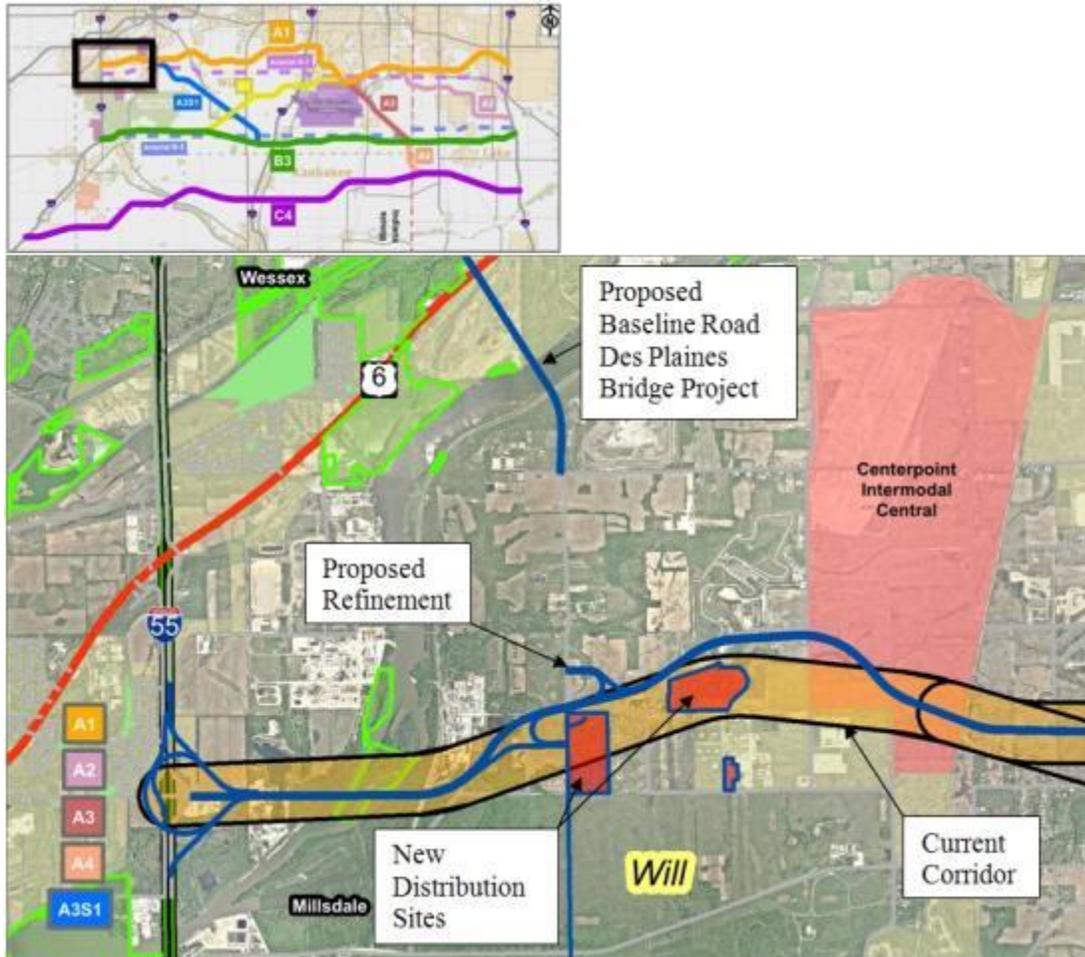
Potential Alternative Refinement Worksheets

Figure A-1. Potential Alternative Refinement 1

Potential Alternative Refinement Description: A refinement to Alternatives A1, A2, A3, A3S1 and A4 at the location indicated on the map key below was evaluated. The potential refinement includes a revised corridor location to avoid impacts to CenterPoint facilities (Home Depot Distribution Center / APL distribution Center), and an added interchange at S. Vetter Rd to connect to the proposed Baseline Road-Des Plaines River bridge project.

Reason for Alternative Refinement: Requested by CenterPoint Properties to avoid impacts to existing and planned development through their Joliet intermodal facility.

Map Key:



Impacts Avoided: CenterPoint tenant facilities constructed north of Noel Road and East of Vetter Road, Home Depot Distribution center, APL distribution Center.

New Impacts: Approximately 50 acres of property impacts to the south portion of Autobahn Country Club, including 17 buildings on the site and 0.47 miles of the existing race track. The Stepan Chemical Company property on the east bank of the Des Plaines River is impacted by this refinement due to impacts to a railroad siding serving the location, impacts to the southern portion of the property, and access impacts.

Transportation Performance Impacts: No measureable transportation performance impacts.

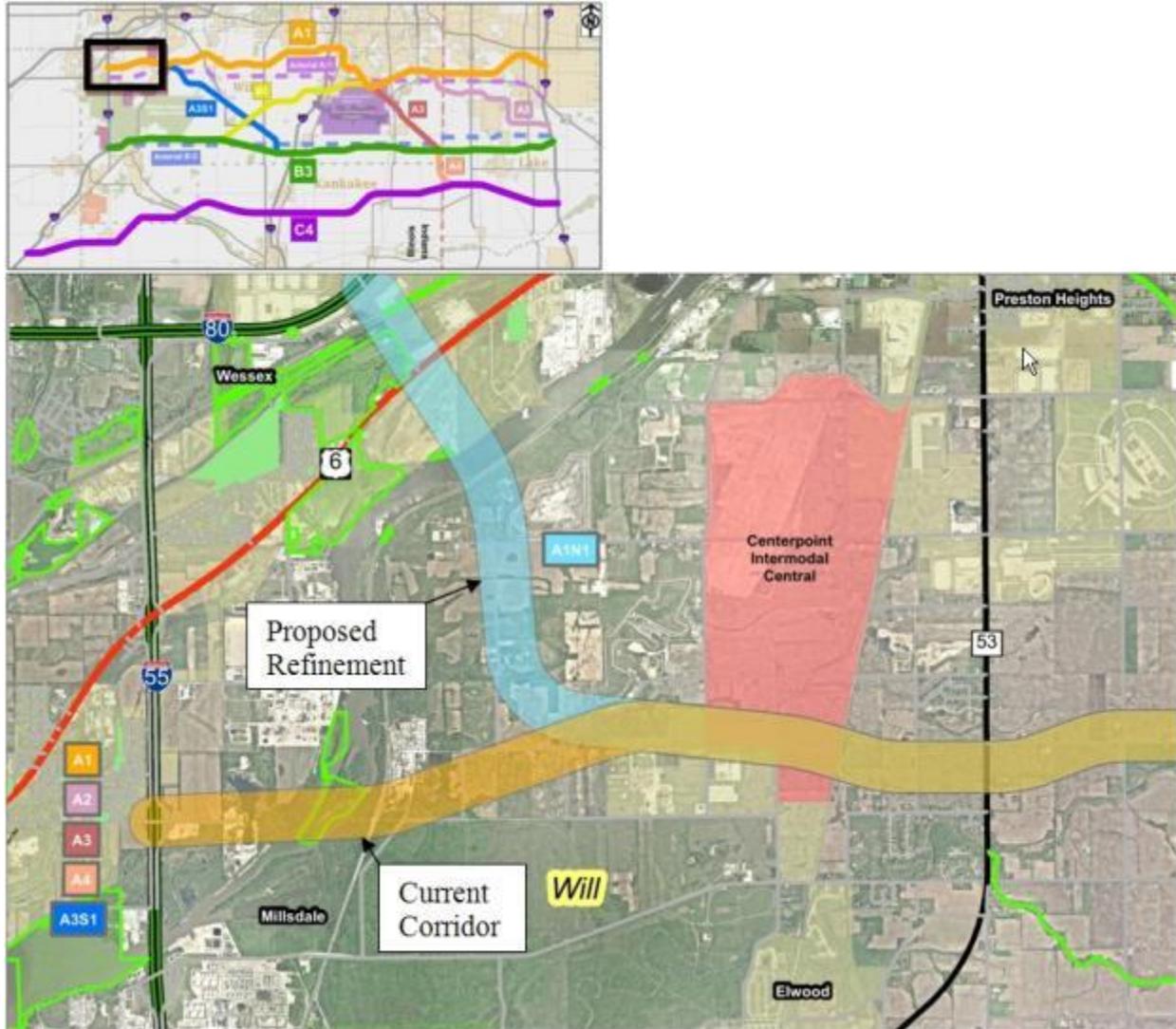
Conclusion: Alternative presents additional impacts that outweigh the benefits of the modification. This refinement was not carried forward.

Figure A-2. Potential Alternative Refinement 2

Potential Alternative Refinement Description: A refinement to Alternatives A1, A2, A3, A3S1 and A4, at the location indicated on the map key below was evaluated. This refinement adds an arterial connection to I-80 along Houbolt Road.

Reason for Alternative Refinement: Requested by IDOT.

Map Key:



Impacts Avoided: No impacts avoided.

New Impacts: Potential encroachment on Lower Rock Run Preserve and intersects 7 pipe transmission lines.

Transportation Performance Impacts: Provides additional connection to I-80, but results in a longer route for Illiana traffic destined for northbound I-55. Otherwise, no measureable transportation performance impacts.

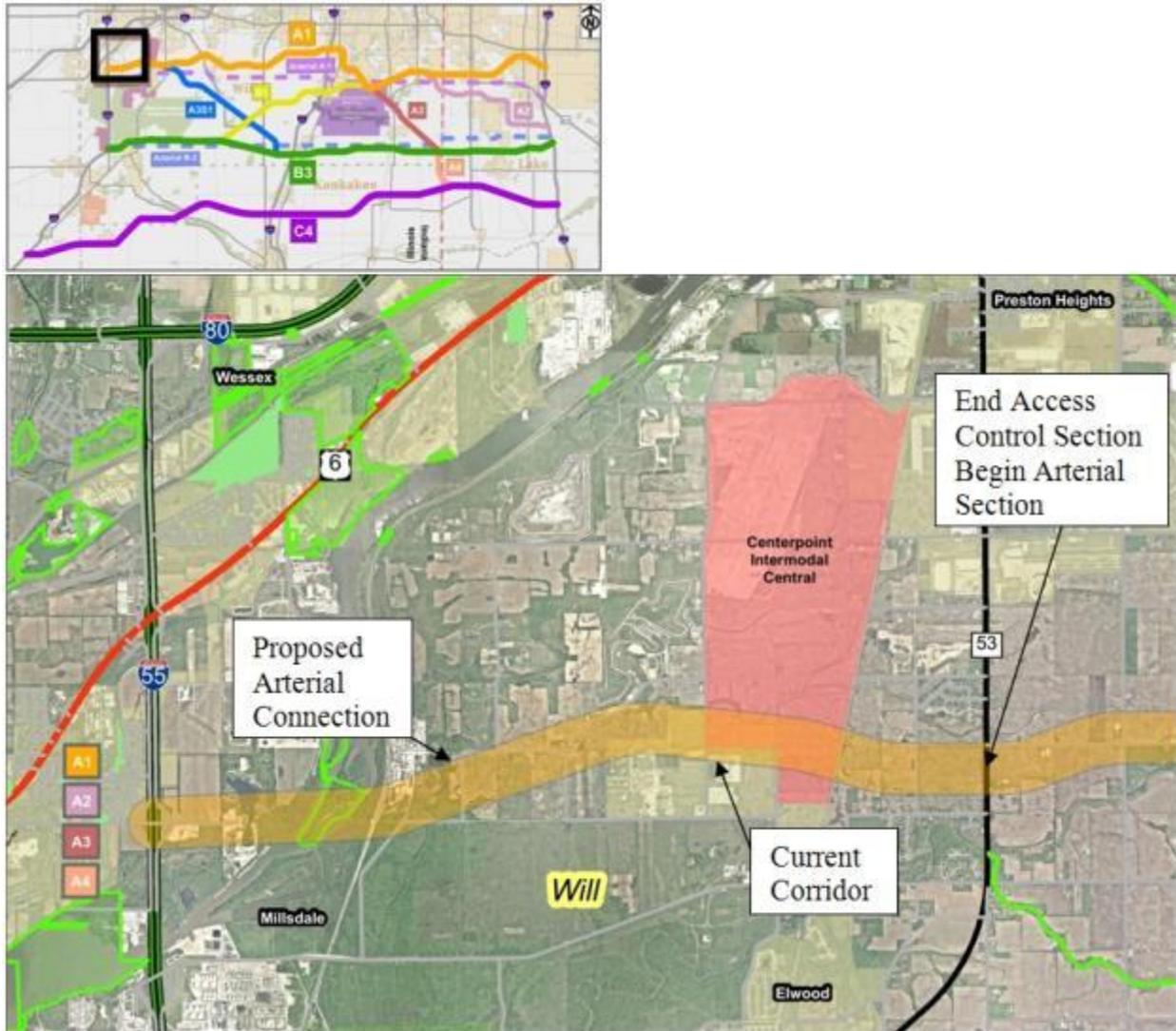
Conclusion: Alternative presents additional impacts that outweigh the benefits of the modification. This refinement was not carried forward.

Figure A-3. Potential Alternative Refinement 3

Potential Alternative Refinement Description: A refinement to Alternatives A1 to A4 at the location indicated on the map key below was evaluated. This refinement does not include a location change, but includes Alternatives A1 and A4 as arterial roadway improvements from I-55 to IL Rte 53.

Reason for Alternative Refinement: To reduce impacts to CenterPoint Properties and investigate a less costly and less impacting facility.

Map Key:



Impacts Avoided: Smaller interchange at Bluff Road, smaller overall footprint.

New Impacts: Multiple at-grade crossings.

Transportation Performance Impacts: Traffic performance reductions.

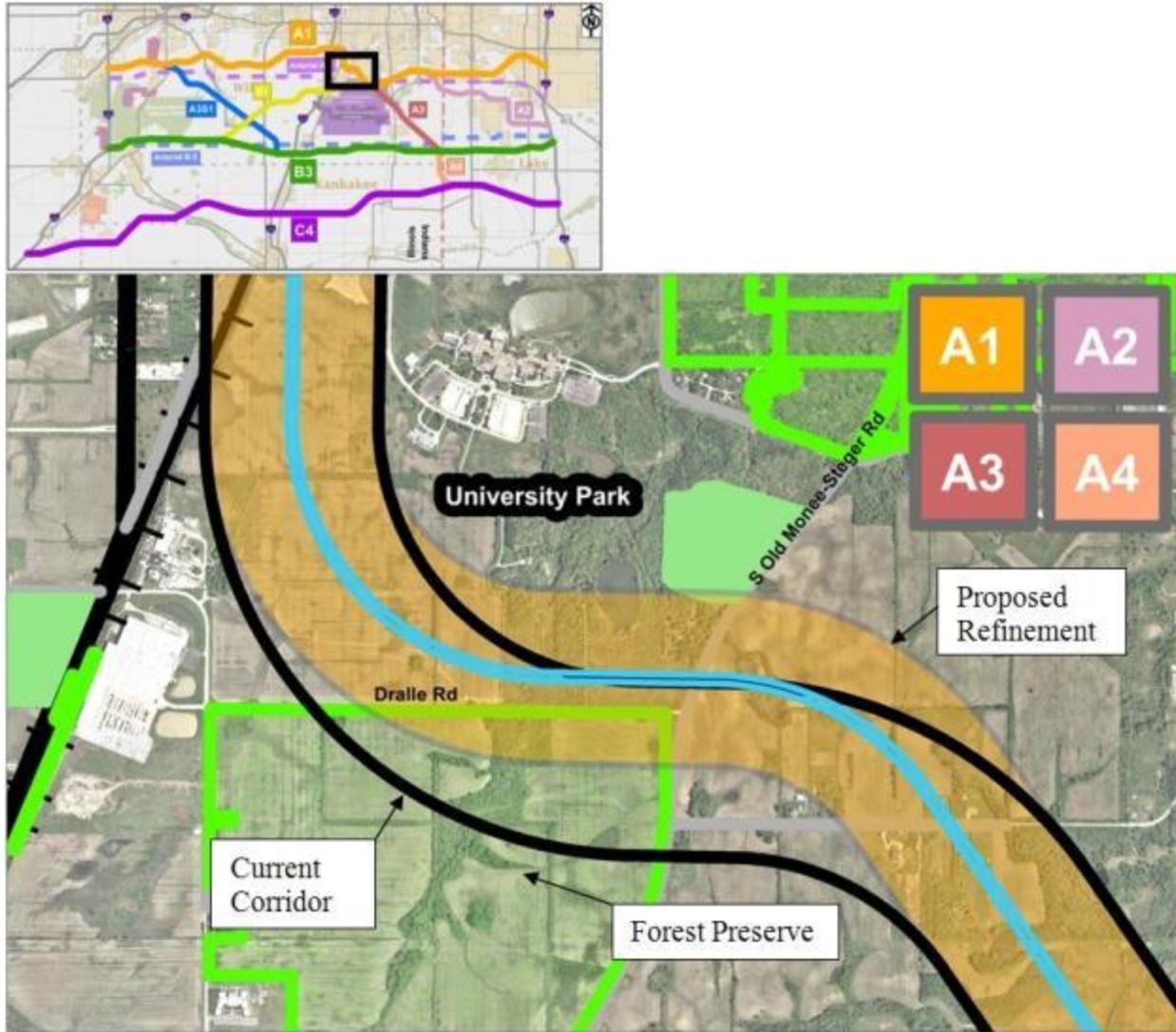
Conclusion: Downgraded facility still introduces substantial costs and impacts without providing full functionality of a controlled access facility. This refinement was not carried forward.

Figure A-4. Potential Alternative Refinement 4

Potential Alternative Refinement Description: A refinement to Alternatives A1, A2, A3 and A4 at the location indicated in the map key below was evaluated. This refinement includes shifting the corridor to the north.

Reason for Alternative Refinement: Avoid existing Thorn Creek Headwaters Preserve.

Map Key:



Impacts Avoided: Will County Forest Preserve (Thorn Creek Headwaters Preserve).

New Impacts: Encroachment on Governor's State University Property.

Transportation Performance Impacts: No measurable travel performance impacts.

Conclusion: While avoiding impacts to a Forest Preserve, future land use for Governor's State University is impacted. However, this is the most practical alignment due to 4(f) issues with the forest preserve. This refinement was carried forward.

Figure A-5. Potential Alternative Refinement 5

Potential Alternative Refinement Description: A refinement to Alternatives A1 and B1 at the location indicated in the map key below was evaluated. This refinement shifted the corridor to the north and straightened out the alignment to minimize residential impacts. This refinement would require a narrowed typical section.

Reason for Alternative Refinement: Reduce the residential impacts and avoid an existing park.

Map Key:



Impacts Avoided: Approximately 100 residences and Section 4(f) property.

New Impacts: Separation of existing residential development with no clear way to connect – adding a bridge would impact high tension line, approximately 6 miles of high-tension tower relocations, elimination of existing trail/park

Transportation Performance Impacts: No measurable travel performance impacts.

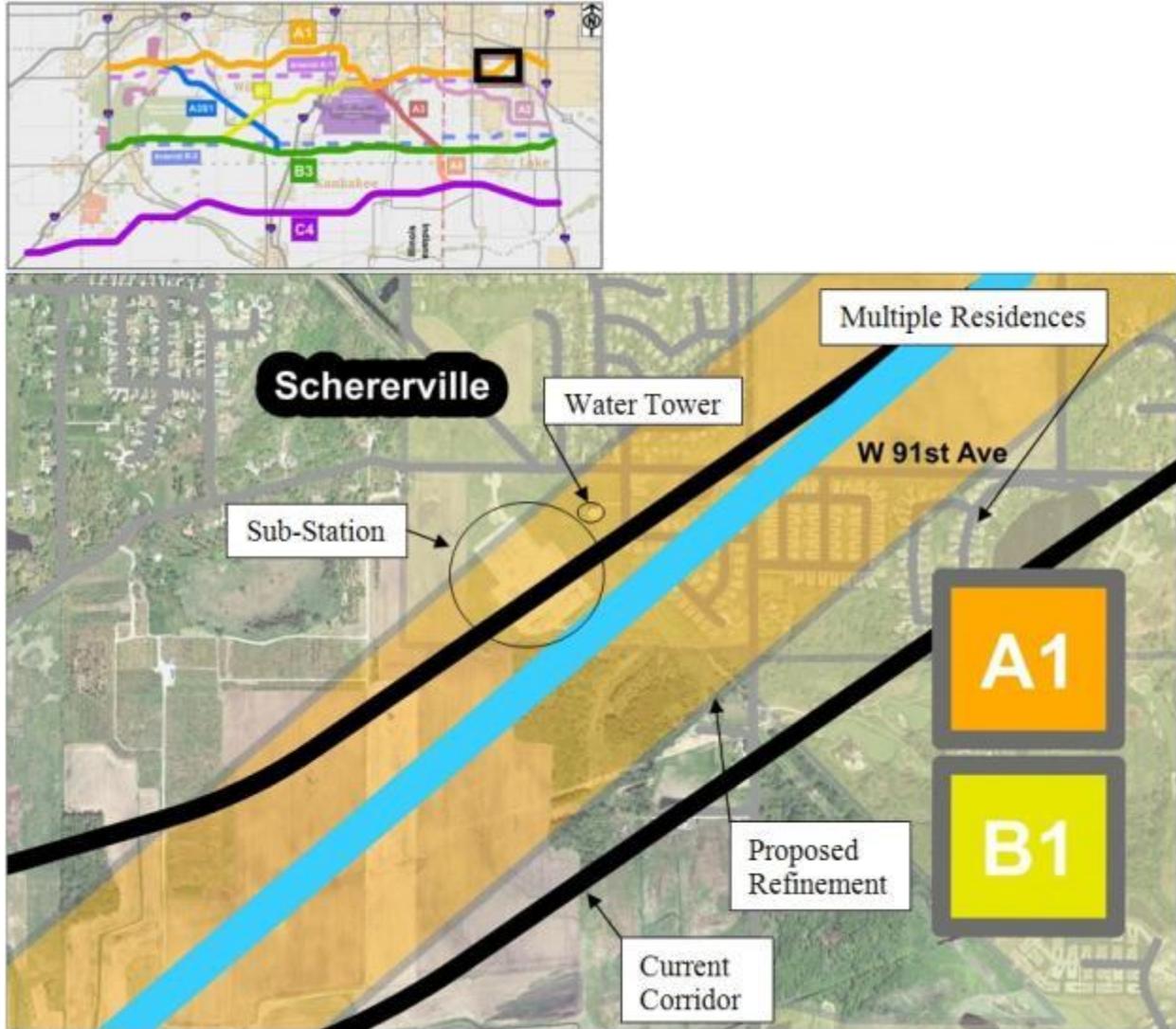
Conclusion: While reducing the number of residential impacts, there are still substantial impacts to the existing residential development, as well as substantial utility costs and park impacts. The town of St. John opposes both alignments and suggested moving the corridors south of US 231. This refinement moving the corridor to the north was carried forward.

Figure A-6. Potential Alternative Refinement 6

Potential Alternative Refinement Description: A refinement to Alternatives A1 and B1 at the location indicated on the map key below was evaluated. This refinement includes a shift to the north and straightening the alignment.

Reason for Alternative Refinement: Reduce residential impacts while avoiding existing water tower and high tension power line substation in Schererville. Also eliminates underground pipe relocations.

Map Key:



Impacts Avoided: Multiple residences and existing underground utilities.

New Impacts: Realignment of approximately ½ mile of Clark Road.

Transportation Performance Impacts: No measurable travel performance impacts.

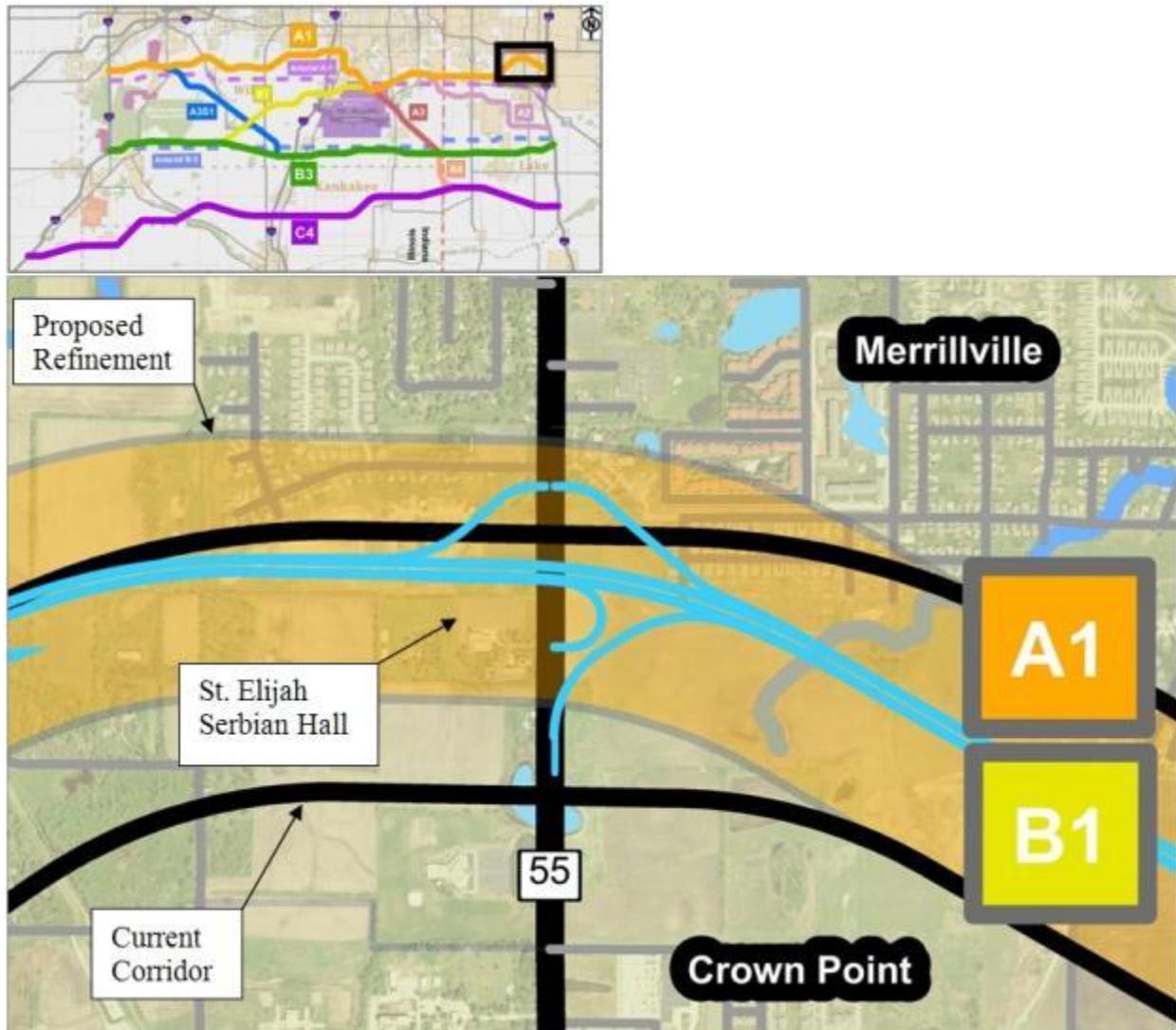
Conclusion: While impacts to residences cannot be avoided here due to other physical constraints, the number of impacts has been reduced. A subdivision will be divided and an existing side road will require realignment. This refinement was carried forward.

Figure A-7. Potential Alternative Refinement 7

Potential Alternative Refinement Description: A refinement to Alternatives A1 and B1 at the location indicated on the map key below was evaluated. This refinement includes a shift of the corridor to the north at IN Route 55 and a revised interchange at that location.

Reason for Alternative Refinement: Eliminated impact to St. Elijah Serbian Hall, a notable community resource as an existing place of worship.

Map Key:



Impacts Avoided: Community Resource - St. Elijah Serbian Hall.

New Impacts: Additional residential and commercial impacts to the north.

Transportation Performance Impacts: No measurable travel performance impacts.

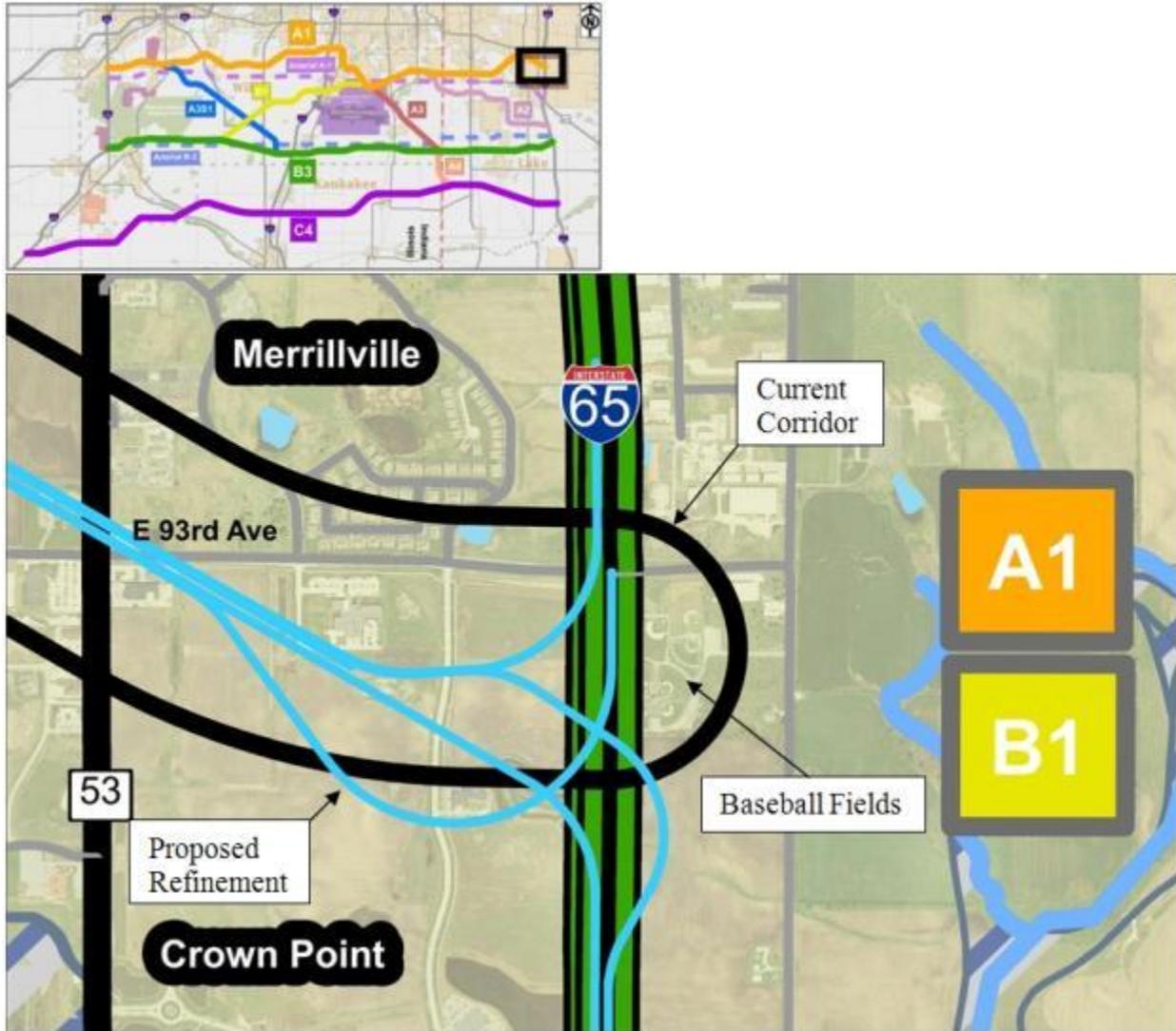
Conclusion: Although the Community Resource – St. Elijah Serbian Hall was avoided, multiple additional residential and commercial impacts are added, and a non-standard interchange is introduced. This refinement was carried forward.

Figure A-8. Potential Alternative Refinement 8

Potential Alternative Refinement Description: A refinement to Alternatives A1 and B1 at the location indicated on the map key below as evaluated. This refinement includes a modified connection to I-65.

Reason for Alternative Refinement: Impacts to an existing baseball field complex have been eliminated

Map Key:



Impacts Avoided: Existing baseball fields

New Impacts: None

Transportation Performance Impacts: No measurable transportation performance impacts.

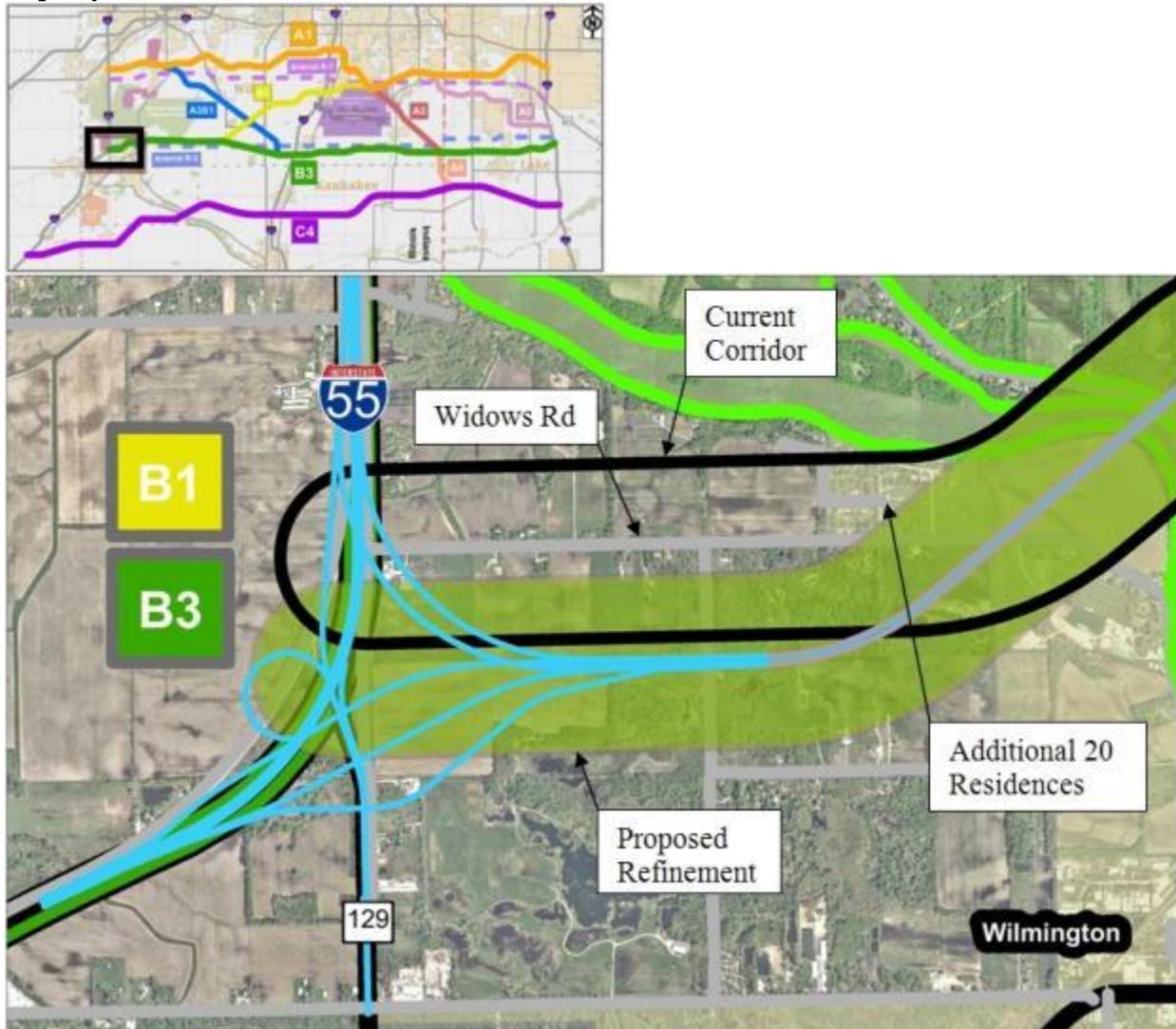
Conclusion: Impacts to an existing baseball park have been eliminated and no additional impacts were created. This refinement was carried forward.

Figure A-9. Potential Alternative Refinement 9

Potential Alternative Refinement Description: A refinement to Alternatives B1 and B3 at the location indicated on the map key below was evaluated. This refinement includes a realigned corridor tie-in with I-55 to the south and modified interchange to provide local access to IL Rte 129.

Reason for Alternative Refinement: A separate Phase I Study is ongoing for Lorenzo Road at IL Rte 129. Based on recommendations of that separate study, it is desirable to maintain local access to IL Rte 129.

Map Key:



Impacts Avoided: Reconstruction/Relocation of existing Widows Road, approximately 20 building impacts

New Impacts: Wooded area impacts, crossing of a high tension line at a sharper angle.

Transportation Performance Impacts: Provides local access to IL Rte 129. Otherwise provides no measurable travel performance impacts.

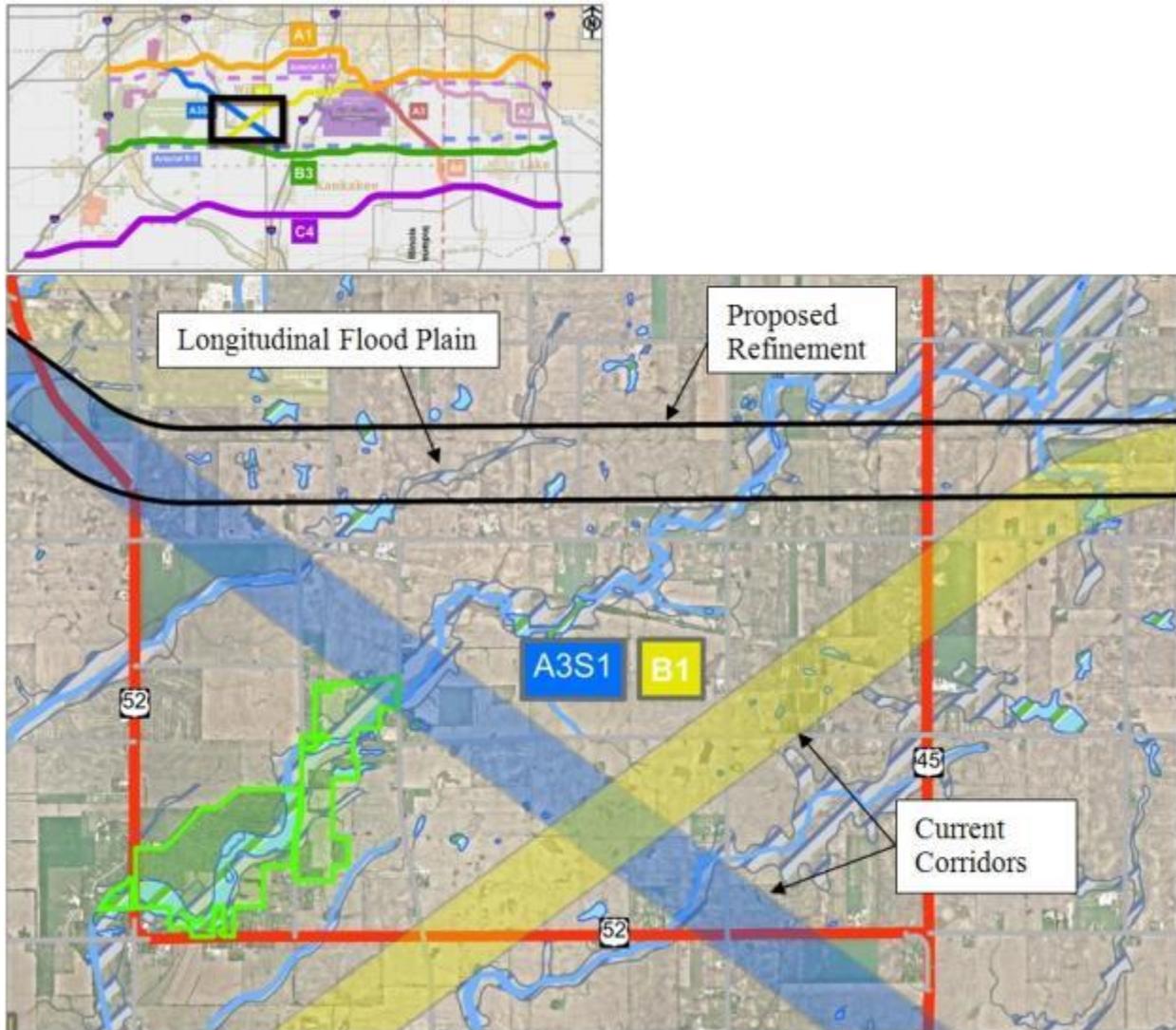
Conclusion: Alternative presented allows for local access while also minimizing impacts. This refinement was carried forward.

Figure A-10. Potential Alternative Refinement 10

Potential Alternative Refinement Description: A refinement to Alternatives A3S1 and B1 at the location indicated on the map key below was evaluated. This refinement includes a realigned corridor south of Manhattan by utilizing parts of A3S1 and B1 with a new east-west alignment connection of the two corridors.

Reason for Alternative Refinement: Requested by the Village of Manhattan at a stakeholder meeting.

Map Key:



Impacts Avoided: Proposed commercial/industrial development in Manhattan.

New Impacts: Potential longitudinal flood plain encroachment on Fork Creek waterway and tributaries.

Transportation Performance Impacts: No measurable travel performance impacts.

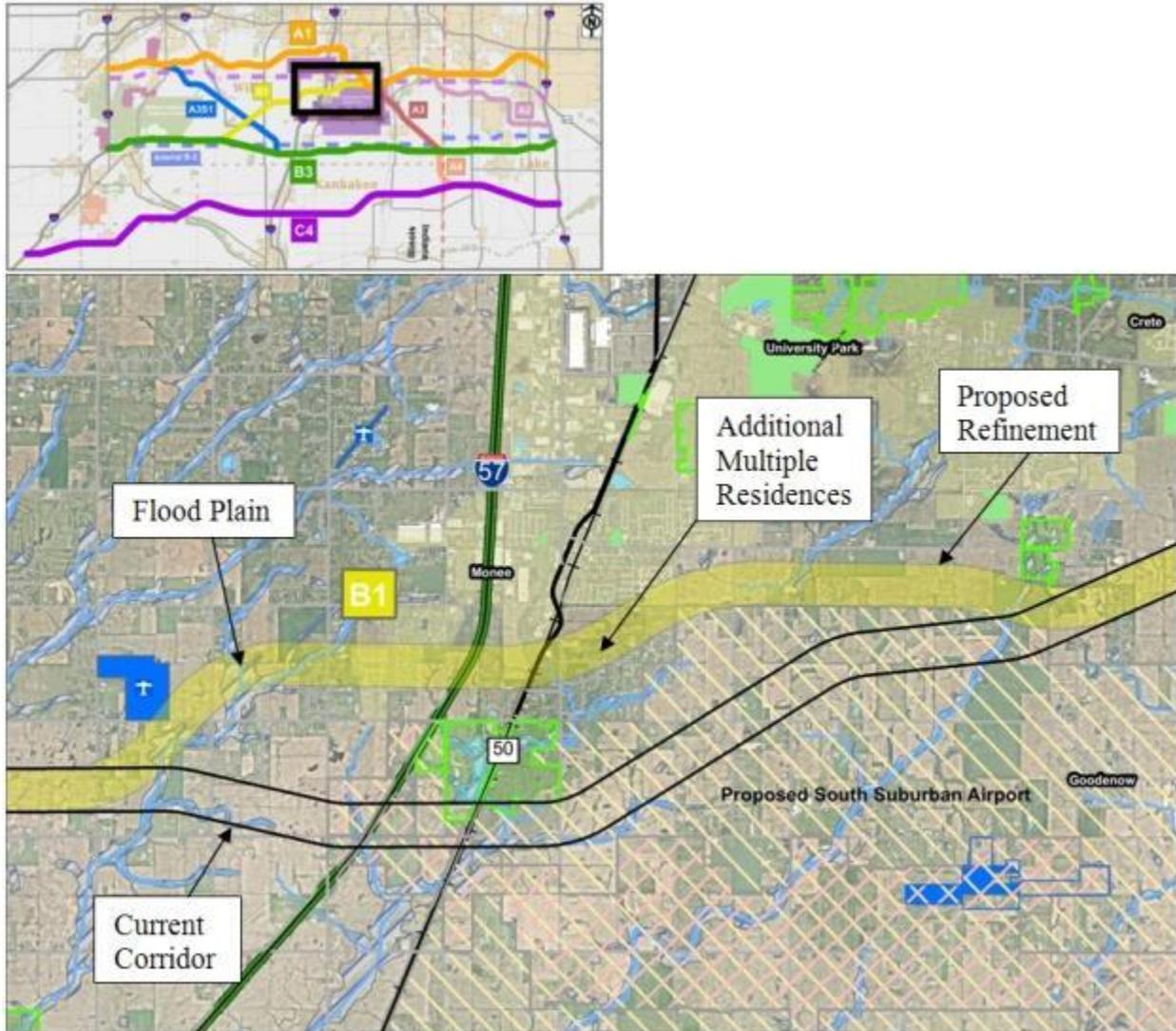
Conclusion: This refinement was carried forward as part of Alternative A3S2.

Figure A-11. Potential Alternative Refinement 11

Potential Alternative Refinement Description: A refinement to Alternative B1 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor location at the South Suburban Airport (SSA) to be outside of the proposed airport limits.

Reason for Alternative Refinement: Requested by representative of the SSA to avoid any impacts within the airport boundary.

Map Key:



Impacts Avoided: Proposed South Suburban Airport

New Impacts: Multiple residential impacts north of the proposed airport, additional floodplain crossings west of I-57

Transportation Performance Impacts: No measurable travel performance impacts.

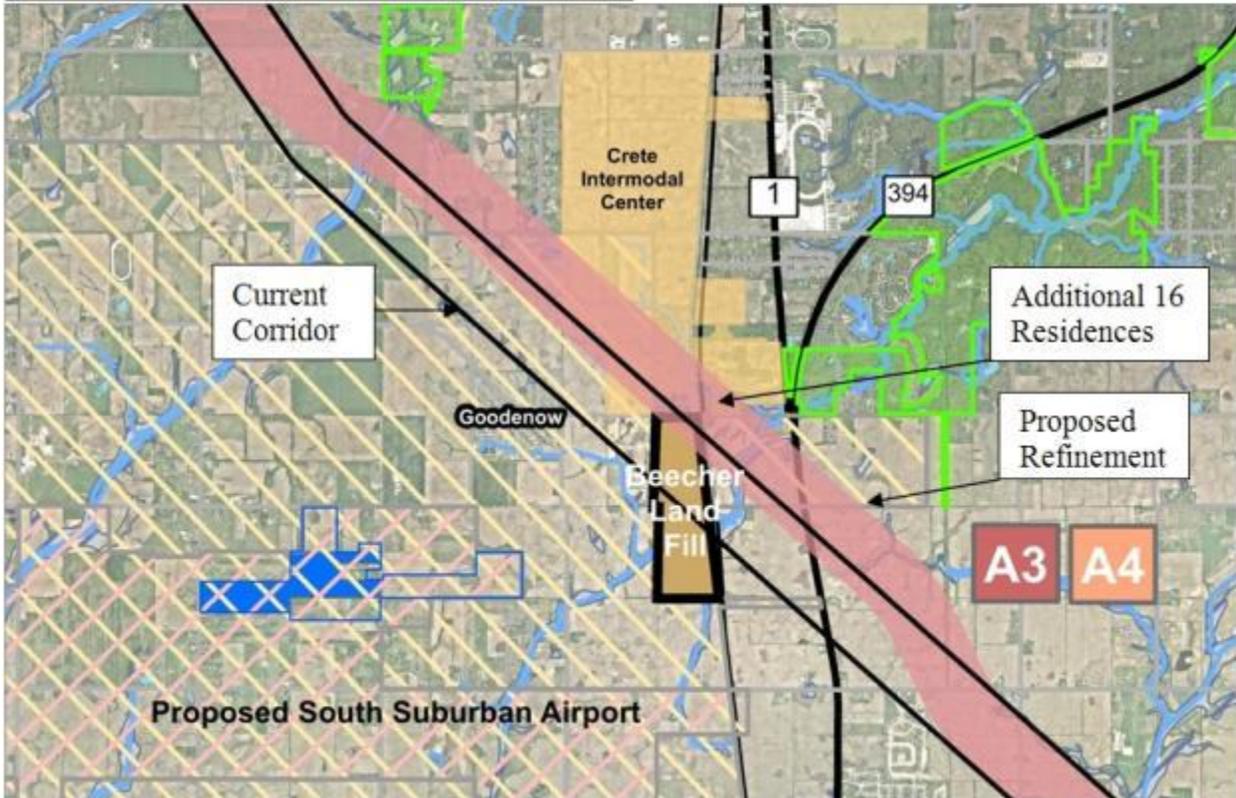
Conclusion: While additional impacts have been introduced, this refinement was carried forward to avoid any impacts to the proposed SSA.

Figure A-12. Potential Alternative Refinement 12

Potential Alternative Refinement Description: A refinement to Alternative A3 and A4 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor location to avoid an existing land fill.

Reason for Alternative Refinement: Requested by the Village of Crete at a stakeholder meeting.

Map Key:



Impacts Avoided: Existing landfill.

New Impacts: Approximately 16 residences.

Transportation Performance Impacts: No measurable travel performance impacts.

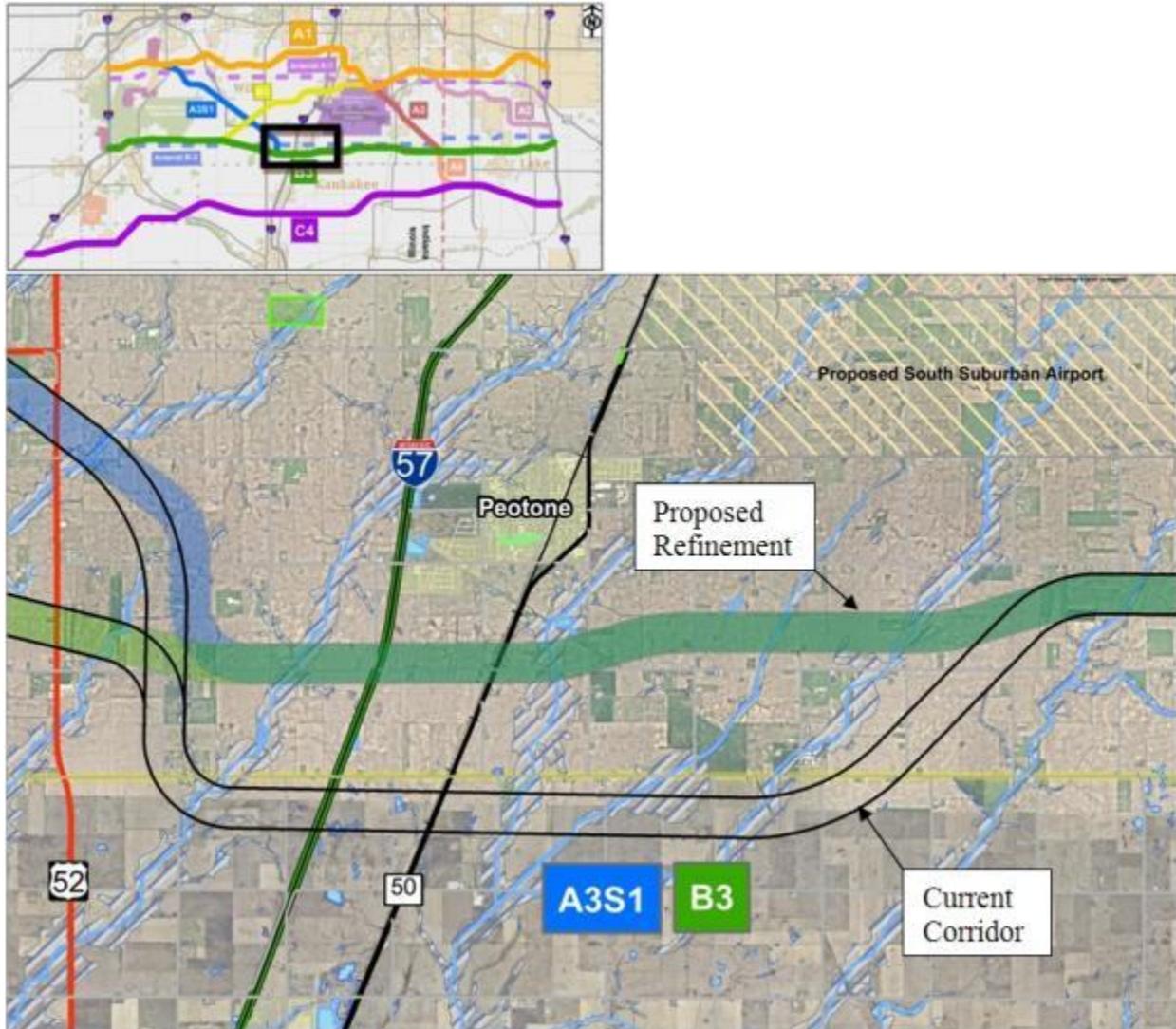
Conclusion: While 16 additional residential impacts were introduced with this refinement, avoidance of an existing landfill is necessary. This refinement was carried forward.

Figure A-13. Potential Alternative Refinement 13

Potential Alternative Refinement Description: A refinement to Alternatives A3S1 and B3 at the location indicated on the map key below was evaluated. This refinement includes a Revised corridor location north at I-57 to reduce corridor length.

Reason for Alternative Refinement: Requested by INDOT.

Map Key:



Impacts Avoided: Reduced corridor length by approximately 1.5 miles.

New Impacts: No notable new impacts.

Transportation Performance Impacts: This refinement results in a reduction of interchange spacing along I-57 to less than desirable.

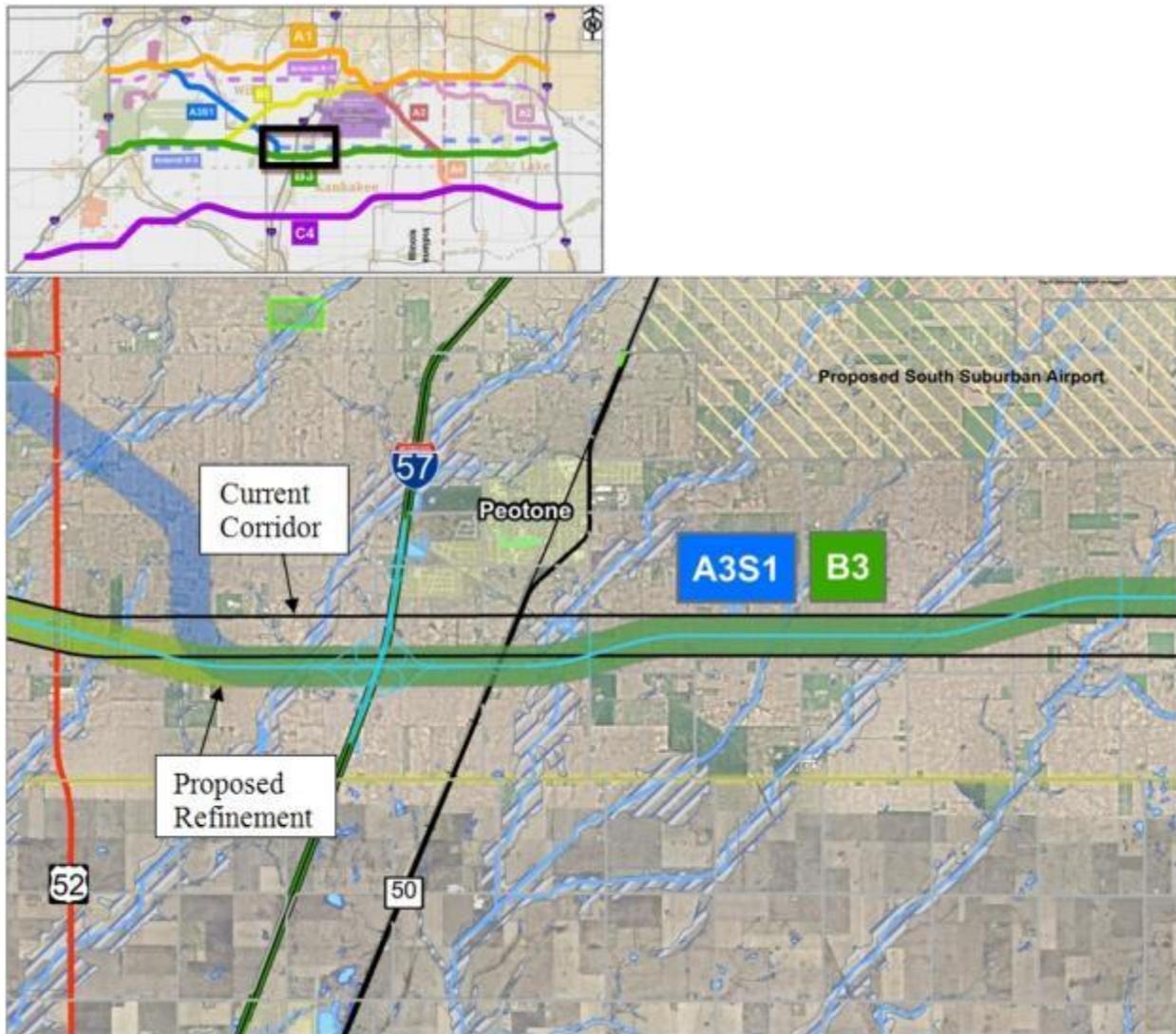
Conclusion: Refinement would reduce overall corridor length, which offsets the cost and engineering challenges with reduced I-57 interchange spacing. This refinement was carried forward and was subsequent further modified with refinement indicated below.

Figure A-14. Potential Alternative Refinement 14

Potential Alternative Refinement Description: A further refinement to Alternatives A3S1 and B3 at the location indicated on the map key below was evaluated. This is an additional refinement to above refinement 13 (Figure 3-14) and includes a revised corridor location 1500' south at I-57 and added C-D road between Wilmington-Peotone interchange on I-57 and proposed Illiana system interchange.

Reason for Alternative Refinement: Shift required to accommodate a full cloverleaf interchange south of the Wilmington-Peotone interchange on I-57.

Map Key:



Impacts Avoided: No measurable impact avoidance.

New Impacts: Collector-Distributor roadway required between existing and proposed interchanges.

Transportation Performance Impacts: This refinement slightly increases interchange spacing along I-57, partially mitigating the reduction that was performed in the first iteration of the B3 alignment change.

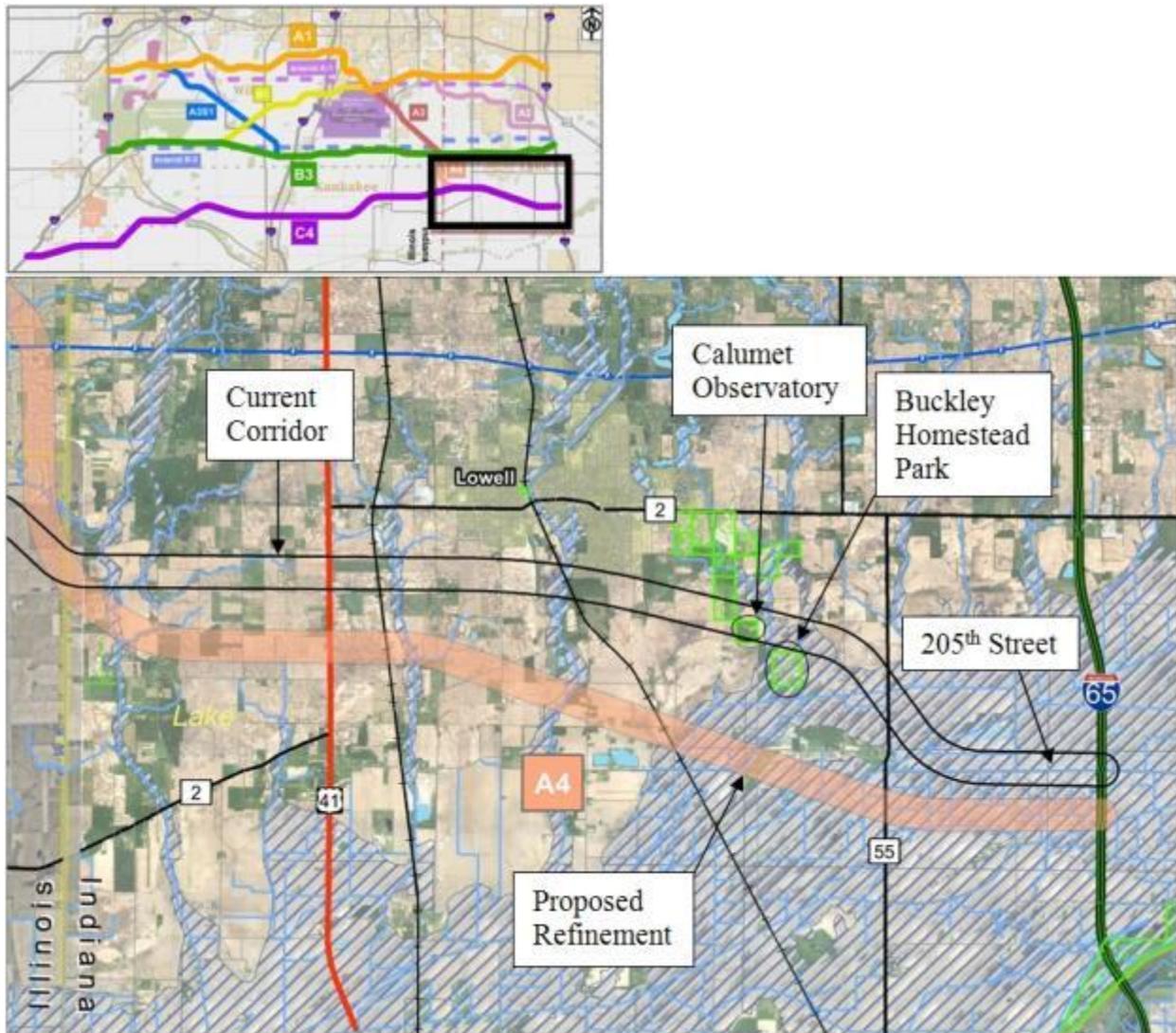
Conclusion: This refinement was necessary to accommodate a system to system interchange between Illiana and I-57. This refinement was carried forward.

Figure A-15. Potential Alternative Refinement 15

Potential Alternative Refinement Description: A refinement to Alternative A4 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor tie-in with I-65 south from the State Line east to I-65.

Reason for Alternative Refinement: To avoid 205th St impacts and associate buildings, avoid impacts to Buckley Homestead Park and The Calumet Observatory, avoid water well locations south of Lowell, and improve interchange spacing along I-65.

Map Key:



Impacts Avoided: Existing 205th Street, Buckley Homestead Park, Calumet Observatory, Lowell wells.

New Impacts: Additional waterway crossings and floodplain crossing impacts.

Transportation Performance Impacts: No measurable travel performance impacts.

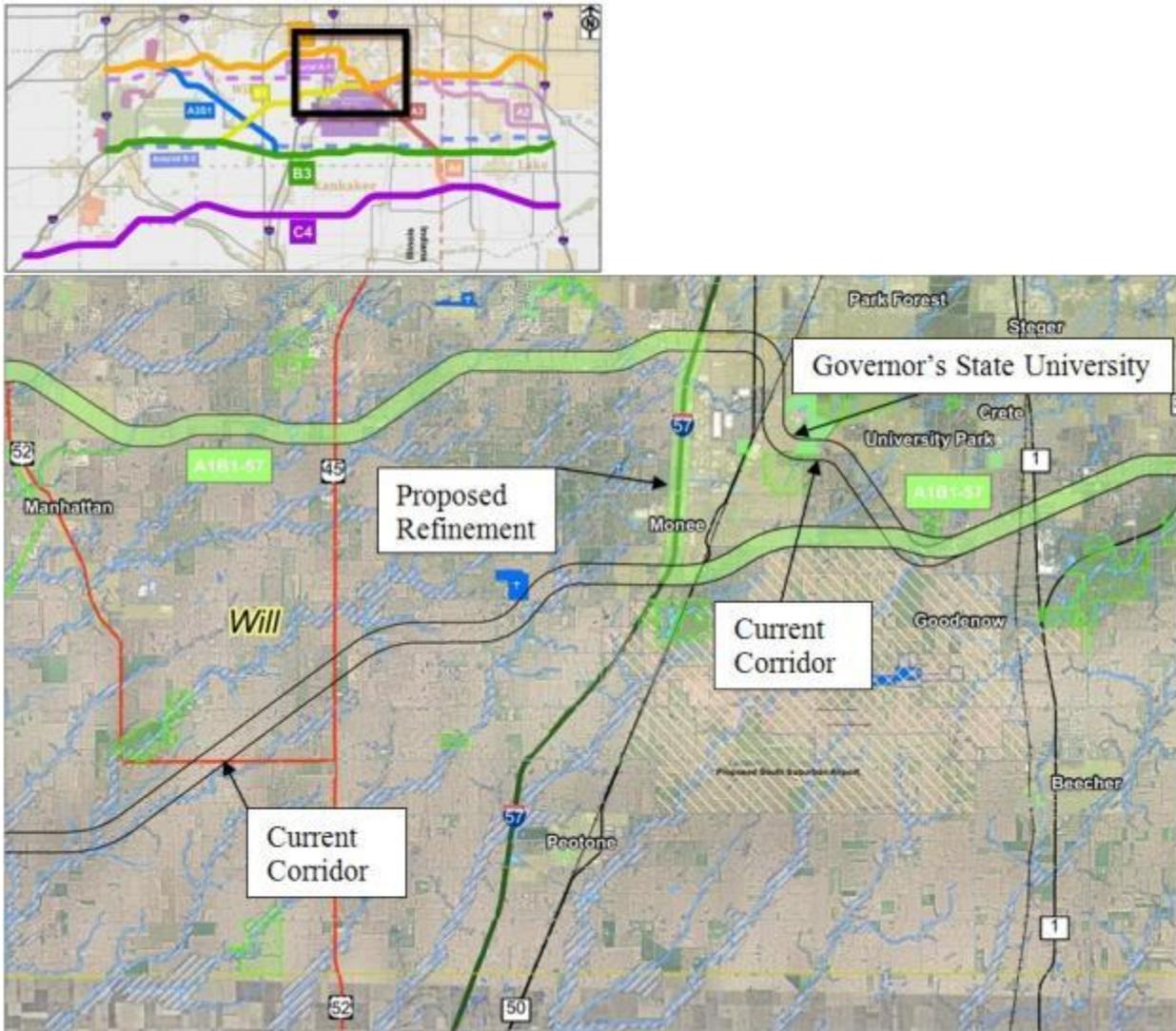
Conclusion: While the above impacts are avoided, new potential impacts are added. Since there is a net reduction in impacts and improved interchange spacing on I-65, this refinement was carried forward.

Figure A-16. Potential Alternative Refinement 16

Potential Alternative Refinement Description: A refinement to Alternatives A1, A2, A3 and A4, coupled with B1 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor location to follow the above “A” alignments from I-55 to I-57, then widen and run along I-57 south to the B1 alternative, then follow the B1 alternative from I-57 to I-65.

Reason for Alternative Refinement: Minimize impacts to University Park.

Map Key:



Impacts Avoided: Governor's State University impacts.

New Impacts: Adds 3 miles of adverse travel, requires existing infrastructure upgrades to I-57.

Transportation Performance Impacts: Adverse travel distance for “A” alignments. No measureable transportation impacts to B1.

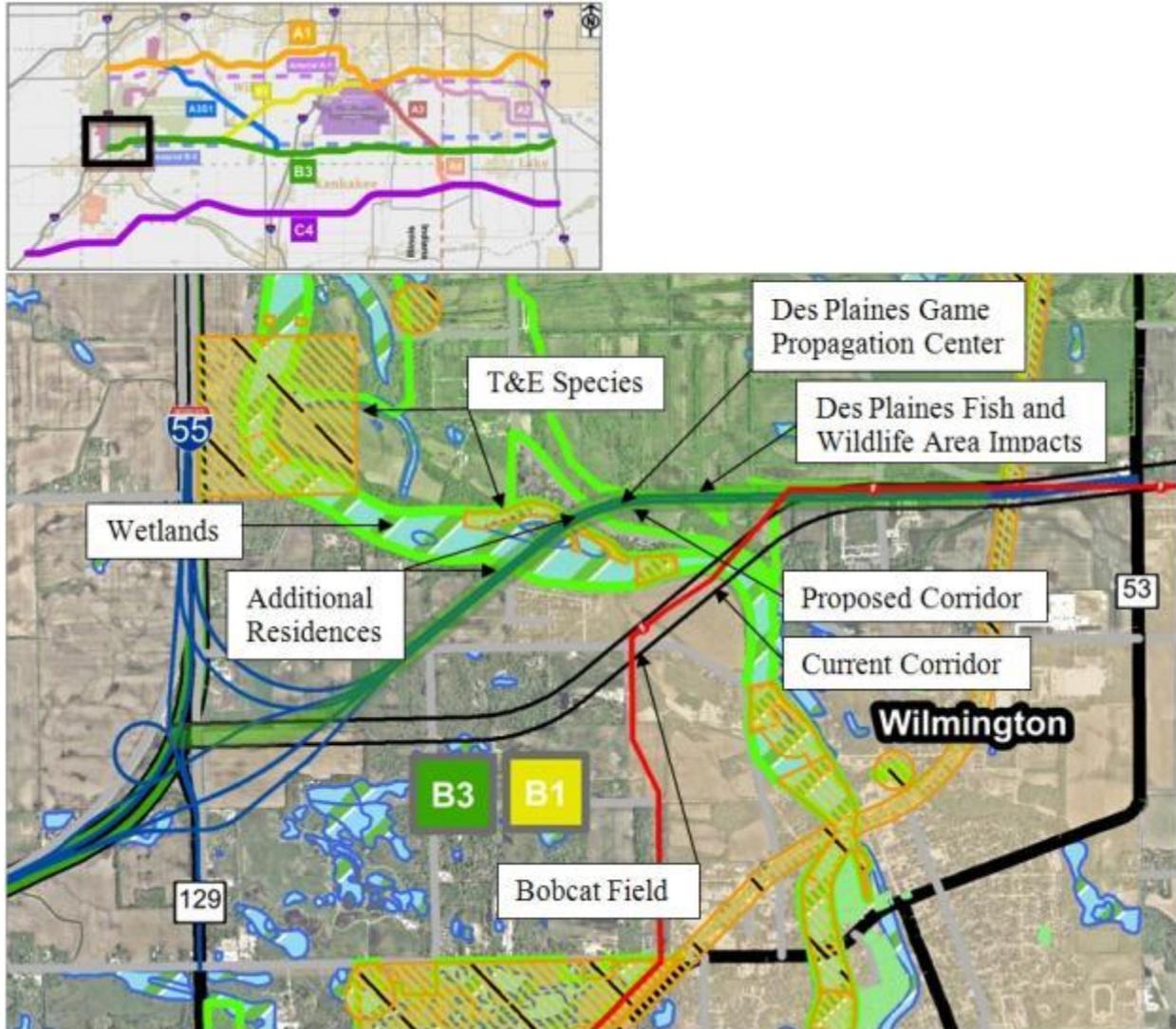
Conclusion: While reducing impacts at Governor's State University, it requires costly upgrades to three additional miles of I-57 to accommodate the additional traffic. This refinement was not carried forward.

Figure A-18. Potential Alternative Refinement 18

Potential Alternative Refinement Description: A refinement to Alternatives B1 and B3 at the location indicated on the map key below was evaluated. This refinement includes shifting the working alignment to the north.

Reason for Alternative Refinement: Requested by the City of Wilmington to reduce impacts.

Map Key:



Impacts Avoided: Bobcat Field, visual impacts to downtown Wilmington.

New Impacts: 10 additional residences, 3 times the additional wetland impacts, 37 additional acres of DNR impacts, 2 acres of T&E impacts, and a longer river crossing by 1,000 feet.

Transportation Performance Impacts: Requires substandard short tangent distance and sharper interchange angle with I-55.

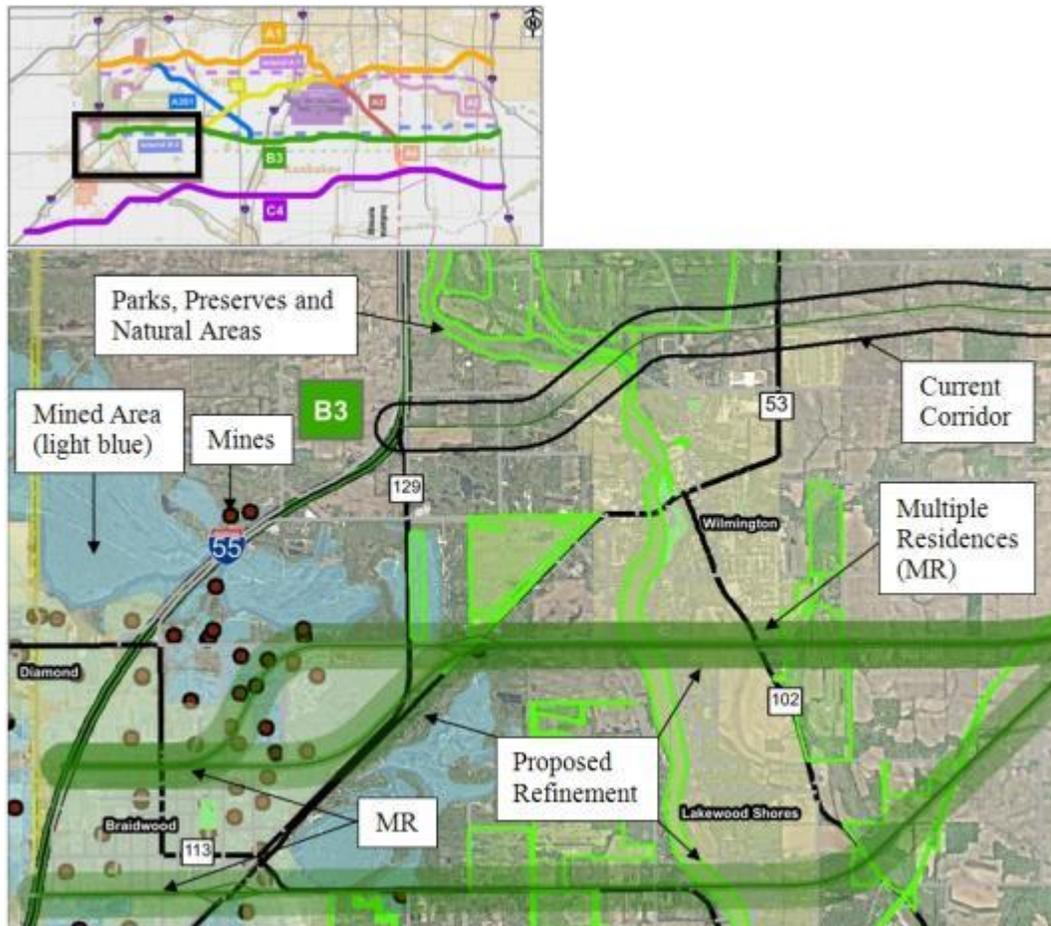
Conclusion: This refinement avoids visual impacts to downtown Wilmington and Bobcat Field, but introduces substantial additional environmental impacts as well as the cost of an additional 1,000 ft of bridge crossing. This refinement was not carried forward.

Figure A-19. Potential Alternative Refinement 19

Potential Alternative Refinement Description: A refinement to B1 and B3 at the location indicated on the map key below was evaluated. This refinement includes a revised I-55 connection near Braidwood.

Reason for Alternative Refinement: Requested by the Village of Braidwood at a stakeholder meeting.

Map Key:



Impacts Avoided: No measurable impacts avoided.

New Impacts: Colchester surface mines, multiple residences, Hitts Siding Prairie, Forked Creek Preserve, Kankakee River Preserve, Wilmington Shrub Prairie, Kankakee Sands Preserve, Munch Area, Braidwood Dunes and Savanna, Threatened & Endangered Species in the Braidwood Dunes and along the RR running parallel to Rte. 53.

Transportation Performance Impacts: Recommended interchange spacing is not provided along I-55. Additional travel distance along I-55.

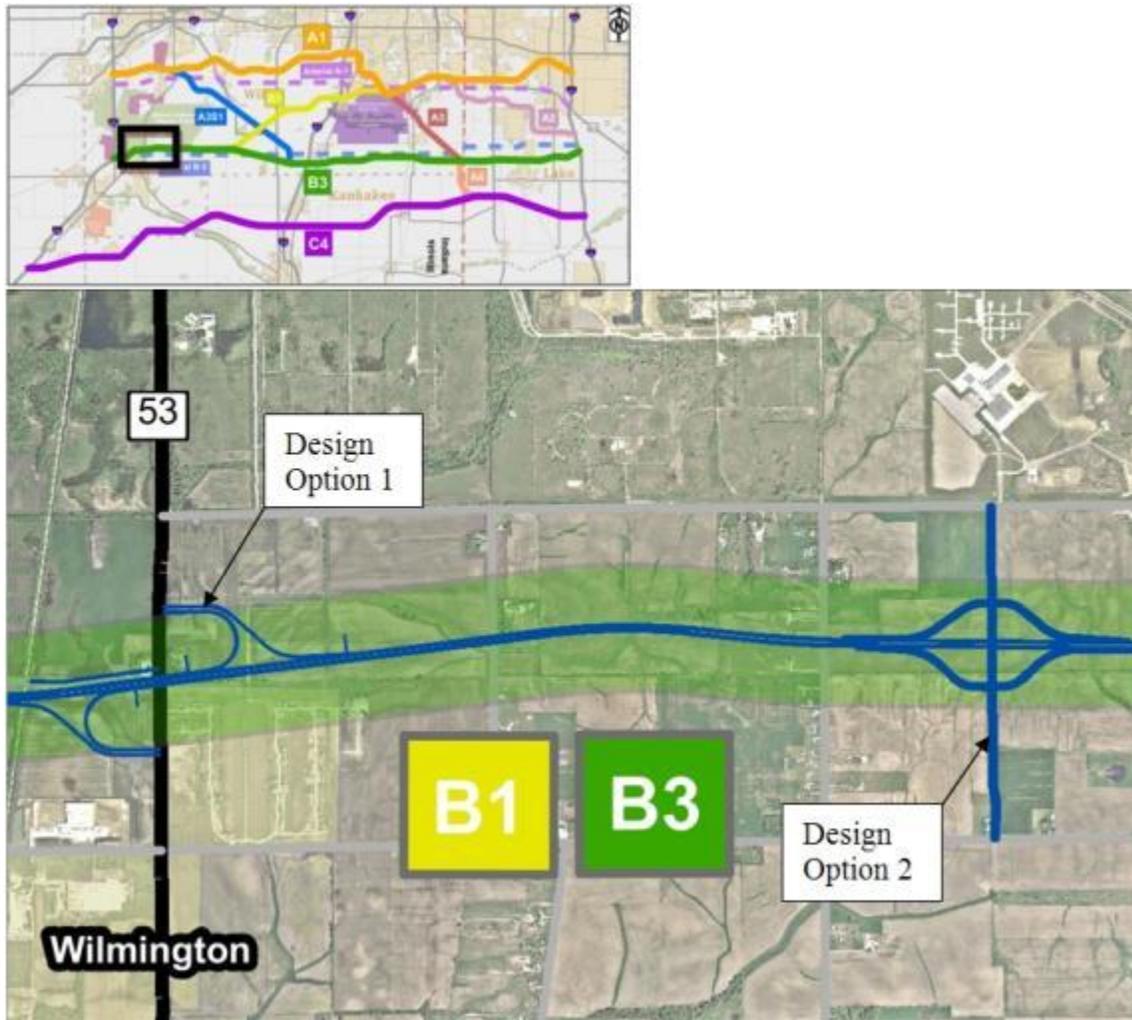
Conclusion: Construction within surface mine areas will require a comprehensive geotechnical and ground water mitigation program that will substantially increase potential construction costs. In some locations fill may not be a viable option due to the size and nature of the open water locations, thus requiring lengthy bridge options. In addition, construction in the open mine zone will have a higher probability of requiring costly consolidation methods such as dynamic compaction, dewatering and waterway rerouting to become feasible. South of Strip Mine Road, there are multiple nature areas that essentially create a 5 mile north/south and 3 mile east/west barricade. Several of those nature areas include threatened & endangered species. On this basis, this refinement was not carried forward.

Figure A-20. Potential Alternative Refinement 20

Potential Alternative Refinement Description: A refinement to Alternatives B1 and B3 at the location indicated on the map key below was evaluated. This refinement includes three design options for an IL Route 53 interchange.

Reason for Alternative Refinement: Because of IL Route 53's designation as Historic Route 66, evaluating different levels of impacts has been requested by the State Historical Preservation Office. Design Option 1 includes an interchange at IL Route 53. Design Option 2 includes an interchange 2.5 miles east of IL Route 53 with a new connection to South Arsenal Road and Peotone Road. Option 3 would include not providing an interchange at IL Route 53.

Map Key:



Impacts Avoided: IL Route 53.

New Impacts: 1 mile of new roadway to connect South Arsenal Road with Peotone Road.

Transportation Performance Impacts: Excluding an interchange at IL Route 53 creates 16.5 miles of inaccessible freeway along the B1 and B3 corridors.

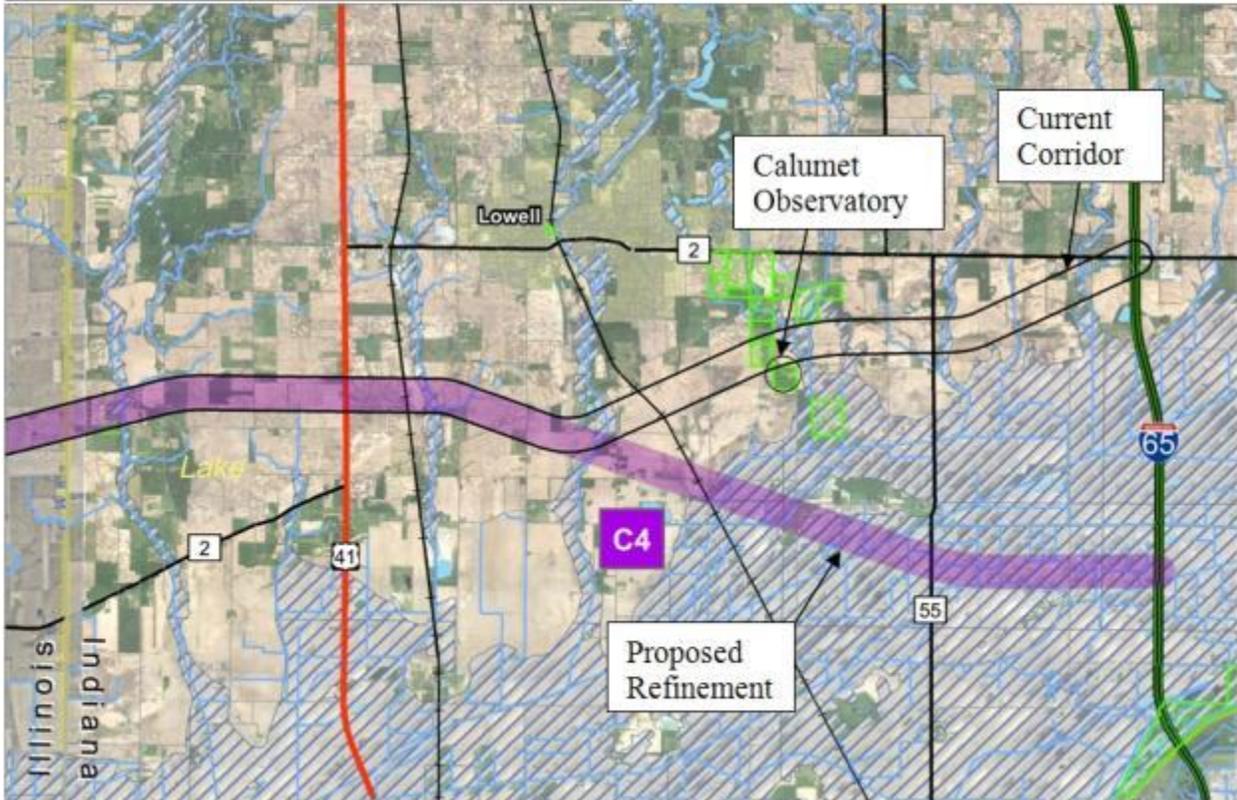
Conclusion: This refinement was carried forward. Interchange options will be investigated in greater detail in Tier 2 with the goal of minimizing impacts to IL Route 53.

Figure A-21. Potential Alternative Refinement 21

Potential Alternative Refinement Description: Variation on Alternative C4; Revised corridor tie-in with I-65 3 miles south from the State Line east to I-65 to provide recommended interchange spacing between existing 181st street interchange and Illiana proposed interchange.

Reason for Alternative Refinement: Requested by INDOT at a coordination meeting.

Map Key:



Impacts Avoided: Existing 181st Street interchange on I-65

New Impacts: No measurable new impacts

Transportation Performance Impacts: No measurable travel performance impacts.

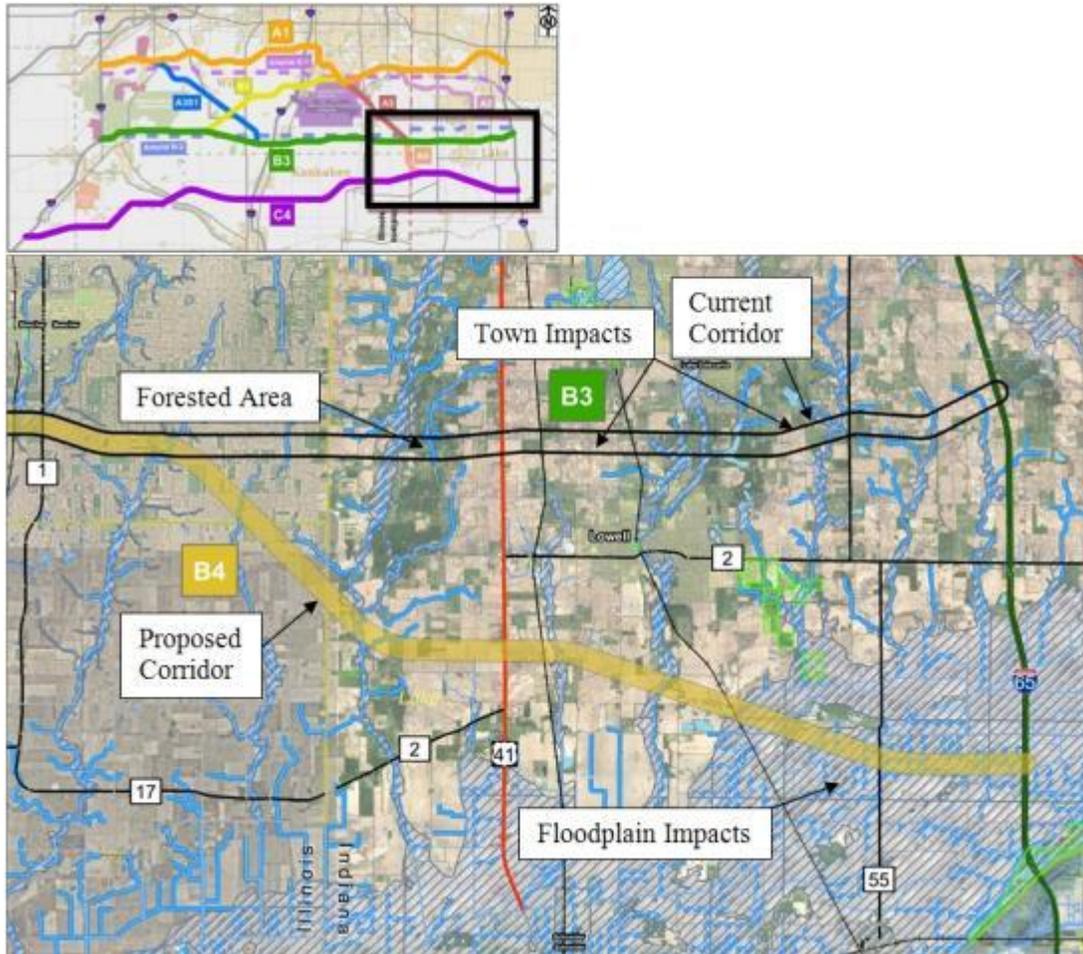
Conclusion: Maintaining the existing 181st Street interchange at I-65 and introducing a separate interchange for Illiana and I-65 using recommended interchange spacing was the preferred option. This refinement was carried forward.

Figure A-22. Potential Alternative Refinement 22

Potential Alternative Refinement Description: Variation on Alternative B3; Revised corridor connection to I-65 south to the “4” connection point.

Reason for Alternative Refinement: Requested by stakeholders to reduce impacts to unincorporated Lake Dalecarlia and the town of Lowell, IN.

Map Key:



Impacts Avoided: Impacts to the towns of Lake Dalecarlia and Lowell, 41 less acres of forested area, 6.7 less acres of water body impacts.

New Impacts: 1.93 miles of additional pavement as compared to Alternative B3, 21 additional agricultural and farm building impacts, 216 additional acres of floodplains impacts, 26 new stream crossings as compared to B3.

Transportation Performance Impacts: Forecasted 2040 average daily traffic and average daily truck traffic for Alternative B4 is approximately 15 percent and 20 percent lower than Alternative B3 respectively. Regional travel performance is also worse for Alternative B4.

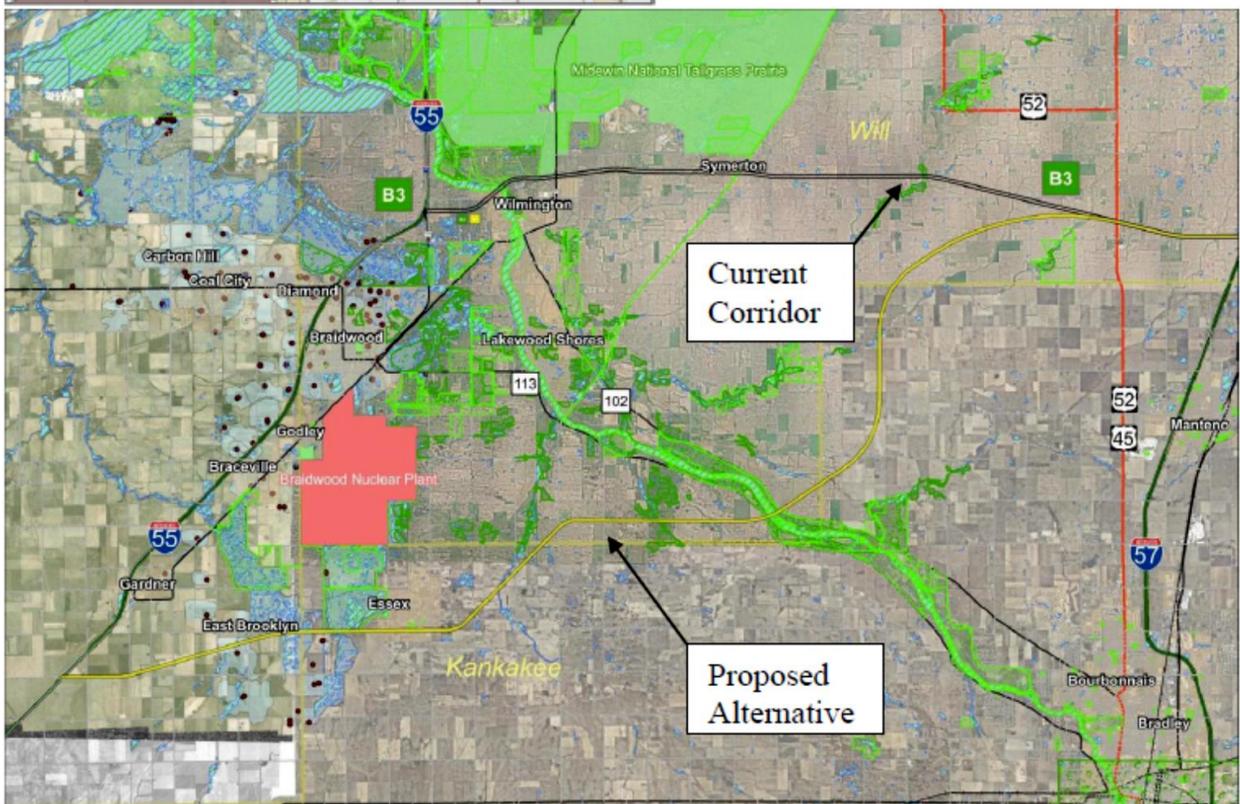
Conclusion: This refinement introduces additional environmental impacts, including floodplain impacts which are doubled, and potential geotechnical constructability issues due to poor soils. This refinement also causes additional design and construction costs as compared to B3 due to longer alignment. However, since this refinement would avoid impacts to Lake Dalecarlia and Lowell, IN, this refinement was carried forward as Alternative B4.

Figure A-23. Potential Alternative Refinement 23

Potential Alternative Refinement Description: A potential refinement to Alternative B3 was evaluated with respect to providing a southern “C” connection point to I-55 as indicated on the map key below.

Reason for Alternative Refinement: This potential refinement was requested by the Midwin National Tallgrass Prairie to avoid potential impacts associated with Alternative B3.

Map Key:



Impacts Avoided: Potential impacts to the Midwin National Tallgrass Prairie.

New Impacts: 13.44 additional miles of freeway, strip mine impacts, 4 times the additional wetland and T&E impacts, 3 times the water body impacts, 36 additional building impacts.

Transportation Performance Impacts: Substantial reduction in vehicles using the facility with the southern connection along I-55.

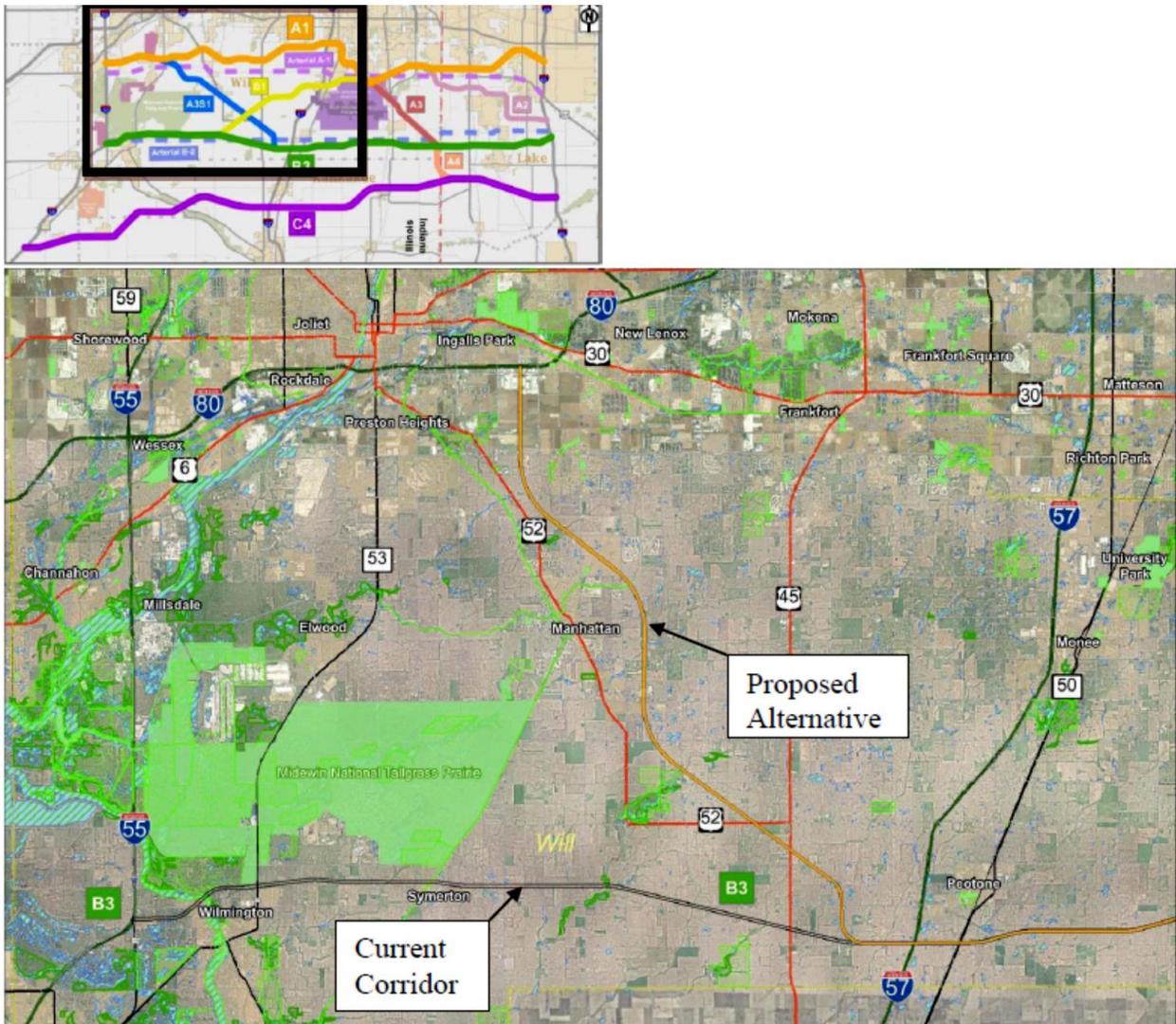
Conclusion: While potential impacts to the Midwin Prairie may be avoided (no impacts to Midwin have yet been identified), additional environmental impacts are introduced with this alternative. Also substantial additional costs are included by adding 13.44 miles of freeway construction. This refinement was not carried forward.

Figure A-24. Potential Alternative Refinement 24

Potential Alternative Refinement Description: A potential refinement to Alternative B3 at the location indicated on the map key below was evaluated. This refinement includes replacing the connection to I-55 near Wilmington with a connection to I-80 east of Manhattan.

Reason for Alternative Refinement: This potential refinement was requested by the Midewin National Tallgrass Prairie to avoid potential prairie impacts associated with Alternative B3.

Map Key:



Impacts Avoided: Potential impacts to the Midewin National Tallgrass Prairie.

New Impacts: Based on a review of the GIS database, this potential refinement would have approximately three times as many wetland impacts as the current Alternative B3.

Transportation Performance Impacts: No measurable impacts.

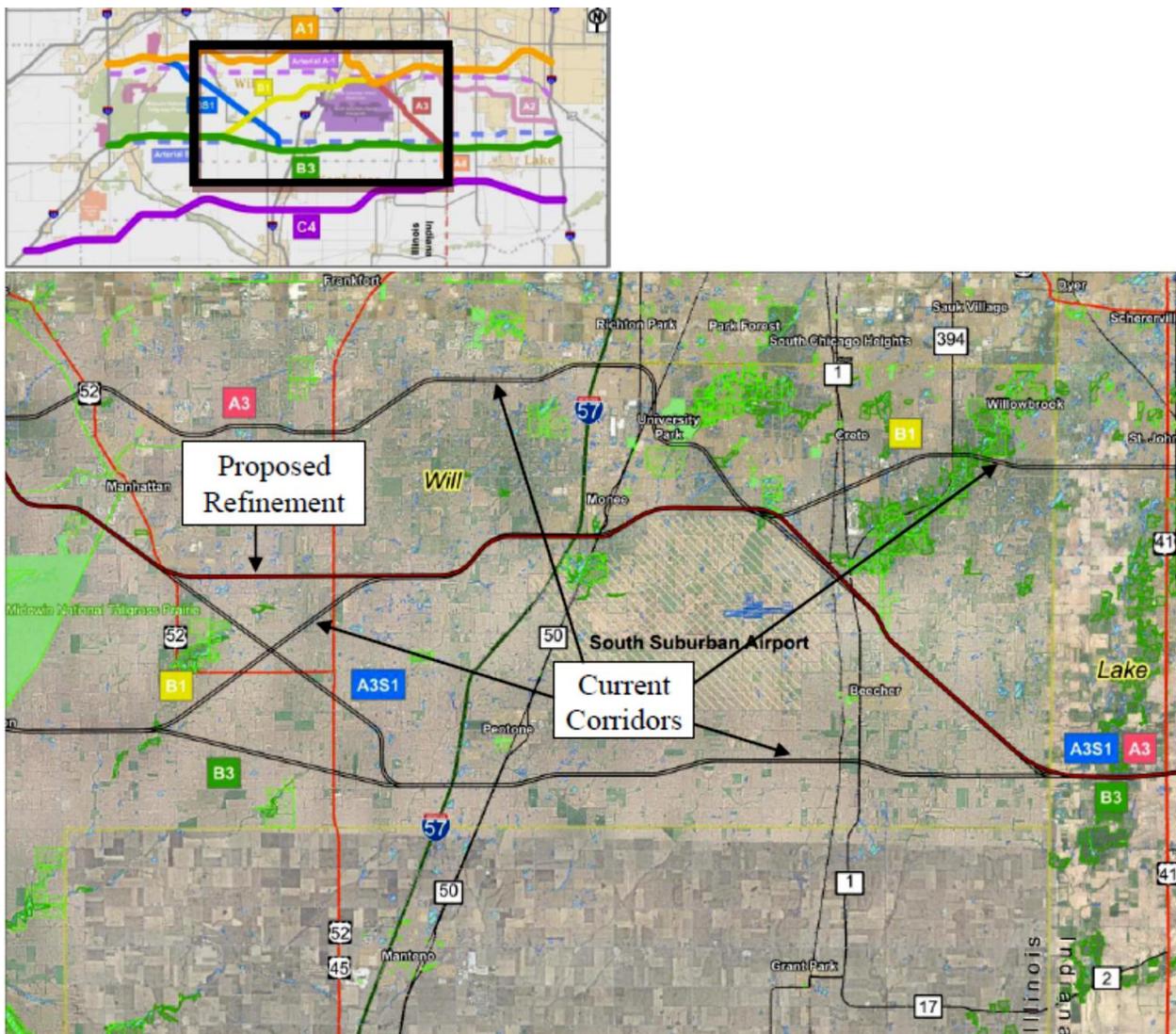
Conclusion: While potential impacts to the Midewin National Tallgrass Prairie may be avoided (no impacts to Midewin have yet been identified), additional environmental impacts are introduced with this alternative. Also, the project Purpose and Need is not being met by connection to I-80 instead of I-55. On this basis, this refinement was not carried forward.

Figure A-25. Potential Alternative Refinement 25

Potential Alternative Refinement Description: A potential refinement to Alternatives A3S1, A3, B1 and B3 at the location indicated on the map key below was evaluated. The potential refinement includes a revised alternative corridor location connecting with I-55 and I-65 that follows, from west to east, A3S1 until it intersects B1, and then follows B1 to A3, and then A3 to B3.

Reason for Alternative Refinement: This potential refinement was evaluated based on stakeholder comments requesting a new alternative be developed to avoid Wilmington and run north of the South Suburban Airport.

Map Key:



Impacts Avoided: Potential Impacts to the Wilmington Area would be avoided with this alternative.

New Impacts: New impacts associated with this alternative are quantified and discussed in Section 4.3.

Transportation Performance Impacts: As a northern alternative through much of the Study Area, there are potential transportation performance benefits as discussed in Section 4.3.

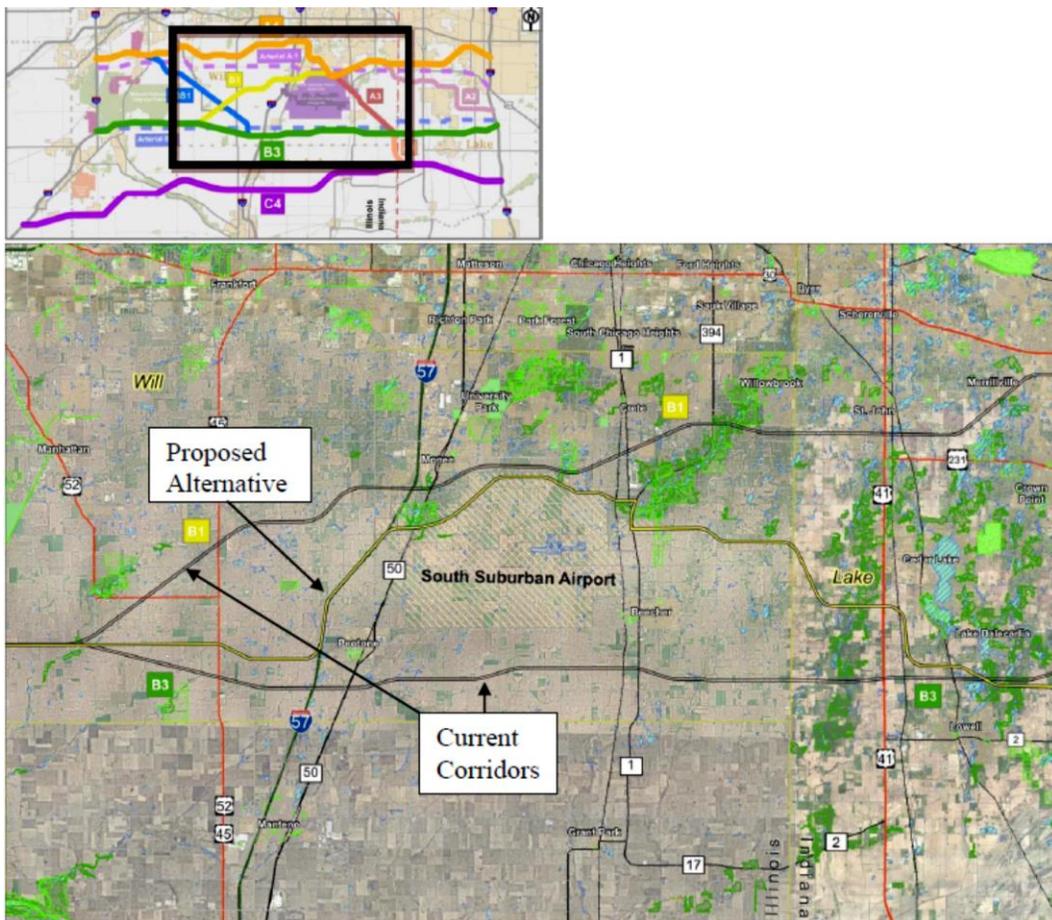
Conclusion: This refinement was carried forward as Alternative A3S2 following the naming convention.

Figure A-26. Potential Alternative Refinement 26

Potential Alternative Refinement Description: A potential refinement to Alternatives B1 and B3 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor location that follows B3 west of I-57, then connects with B1 north of the airport via a double link on I-57, and then connects back to B3 east of the proposed airport.

Reason for Alternative Refinement: This potential refinement was suggested by the Village of Crete.

Map Key:



Impacts Avoided: None noted.

New Impacts: 7 miles of additional freeway, impacts and additional costs to I-57 by either running parallel or widening I-57, double the wetland impacts and stream impact, 4 times the forested area impacts, 16 additional building impacts.

Transportation Performance Impacts: Introduces negotiation by travelers of up to 4 additional interchanges requiring a turning (rather than through) movement for regional travel (2 interchanges along I-57, 2 interchanges along IL-394). This refinement also adds 7 miles of adverse travel for regional traffic compared to Alternative B3.

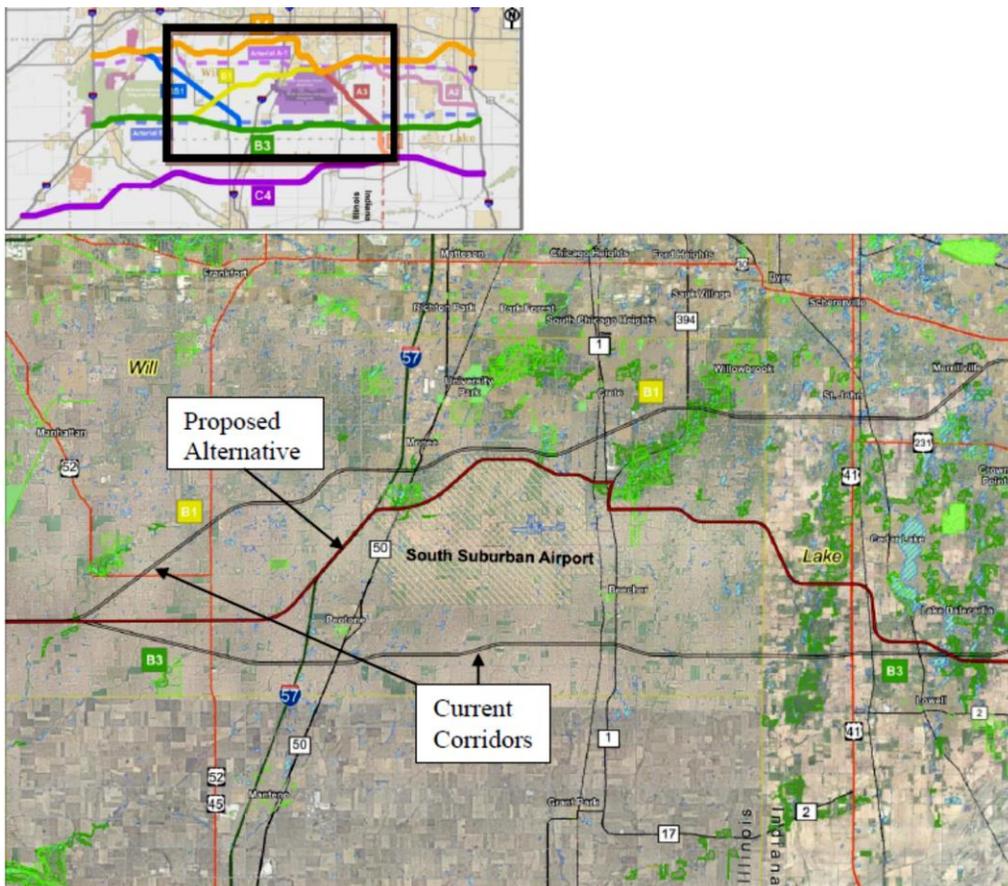
Conclusion: This alternative incurs more impacts than Alternative B3. It provides negative travel benefits compared to Alternative B3, including requiring more complex travel patterns for regional travel and adding length to regional trips. There is a potential benefit of providing a crossing of IL 1 north of Beecher, which was requested to minimize traffic being drawn through Beecher's downtown area. Traffic modeling does not show a substantial change in IL 1 traffic if the Illiana corridor is located north or south of Beecher. This refinement was not carried forward.

Figure A-27. Potential Alternative Refinement 27

Potential Alternative Refinement Description: A potential refinement to Alternatives B1 and B3 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor location to follow B3 west of I-57, then follows B1 north of the airport via double link on I-57, and then connects back to B3 east of the proposed airport.

Reason for Alternative Refinement: This potential refinement was suggested by the Village of Crete.

Map Key:



Impacts Avoided: None Noted.

New Impacts: 6 miles of additional freeway, impacts and additional costs to I-57 by either running parallel or widening I-57, triple the wetland impacts, double the stream impacts, 4 times the forested area impacts.

Transportation Performance Impacts: Introduces negotiation by travelers of up to 4 additional interchanges requiring a turning (rather than through) movement for regional travel (2 interchanges along I-57, 2 interchanges along IL-394). This refinement also adds 6 miles of adverse travel for regional traffic compared to Alternative B3.

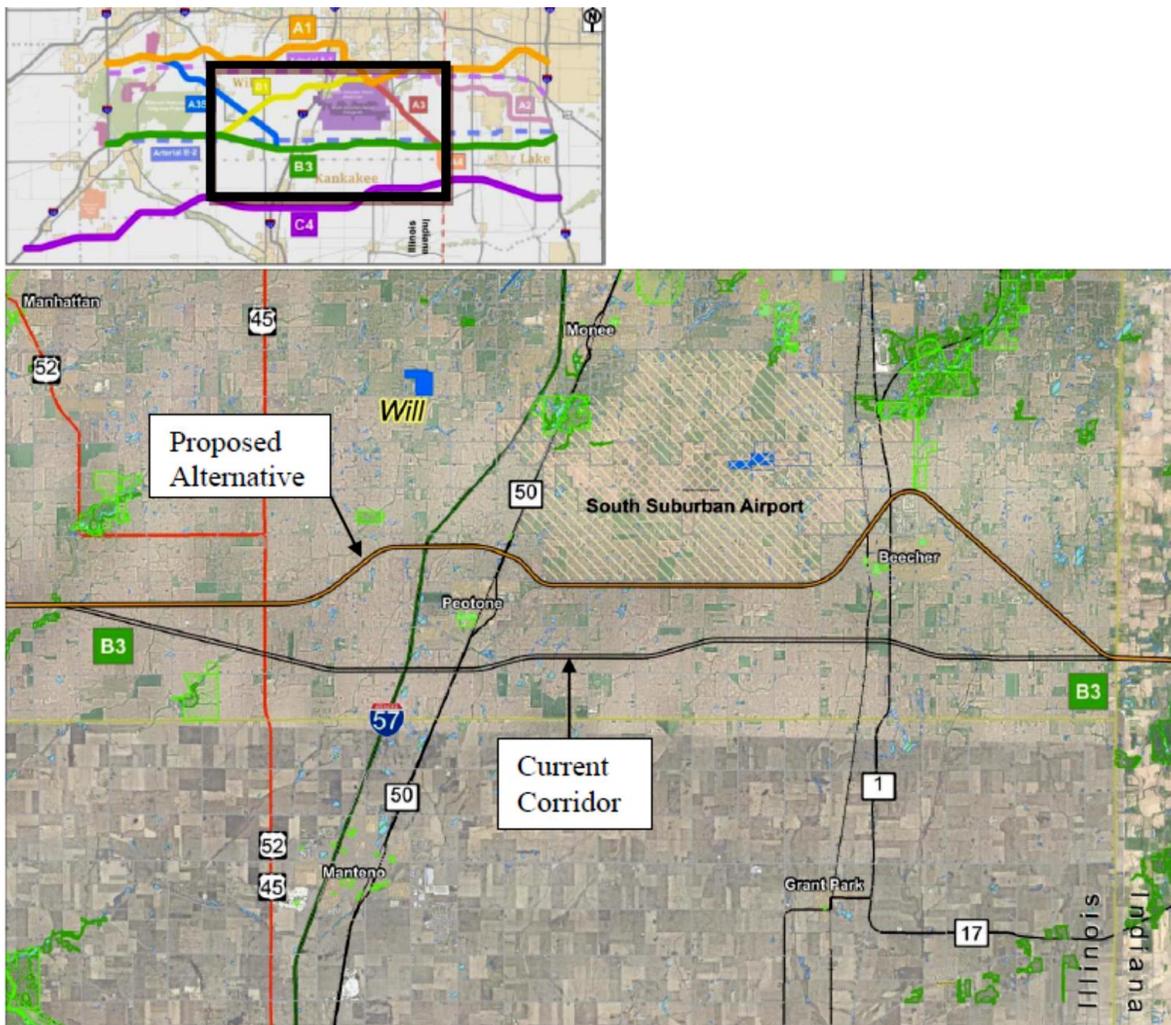
Conclusion: This alternative incurs more impacts than Alternative B3. It provides negative travel benefits compared to Alternative B3, including requiring more complex travel patterns for regional travel and adding length to regional trips. There is a potential benefit of providing a crossing of IL 1 north of Beecher, which was requested to minimize traffic being drawn through Beecher's downtown area. Traffic modeling does not show a substantial change in IL 1 traffic if the Illiana corridor is located north or south of Beecher. This refinement was not carried forward.

Figure A-28. Potential Alternative Refinement 28

Potential Alternative Refinement Description: A potential refinement to Alternative B3 at the location indicated on the map key below was evaluated. This refinement includes a revised corridor location to follow B3 west of Peotone, then go north of Peotone, south of the proposed South Suburban Airport and north of Beecher, before tying back into B3.

Reason for Alternative Refinement: This potential refinement was suggested by the Village of Crete.

Map Key:



Impacts Avoided: None Noted.

New Impacts: 2.5 miles of additional freeway, double the wetland impacts and forested area impacts, 37 additional building impacts, 8 additional miles of diagonal property severances.

Transportation Performance Impacts: Adds 2.5 miles of adverse travel for regional trips. Provides crossings of IL 1 and I-57 north of Beecher and Peotone, respectively.

Conclusion: This alternative incurs more impacts and does not provide any travel benefits compared to the B3 alternative, with the exception of providing a crossing of IL 1 north of Beecher, which was requested to minimize traffic being drawn through Beecher's downtown area. Traffic modeling does not show a substantial change in IL 1 traffic if the Illiana corridor is located north or south of Beecher. This refinement was not carried forward.