S.0 Summary

Since publication of the Tier Two DEIS, substantive changes in this section include:

- Corrected reference to the appropriate Metropolitan Planning Organization, Chicago MPO Policy Committee (Chicago MPO), for the Illinois portion of the project.
- Updated S.2 to include FHWA's approval of the INDOT Statewide Transportation Improvement Program (STIP) amendment, which included the NIRPC Transportation Improvement Program (TIP) amendment adding the Illiana Corridor as a fiscally constrained project on January 31, 2014
- Added a discussion of modifications to the alternative and design option footprints in S.3.4;
- Added information regarding the particulate matter analysis performed for the project;
- Added additional information regarding the Forman *et al*. (2002) study for analysis of potential indirect impacts to grassland birds;
- Updated Federal Highway Administration's (FHWA's) final effects findings based on consulting parties and Illinois and Indiana SHPOs' review of the *Effects Assessment Report;*
- Included references to the Tier Two Section 106 Programmatic Agreement (PA), which was developed and executed since the Tier Two DEIS;
- Updated S.5 to include that the Forest Preserve District of Will County (FPDWC) concurred that the project would not adversely affect the activities, features, and attributes that qualify the Wauponsee Glacial Trail for Section 4(f) protection. FHWA made a *de minimis* determination for the Wauponsee Glacial Trail following the FPDWC concurrence;
- Updated impact numbers presented in text and Table S-2 based on modifications to the build alternatives and IL-53 design option footprints;
- Updated the minimization and mitigation summary based on continuing coordination with resource agencies; and
- Added content in S.9 for activities in progress at the time this Tier Two FEIS

The purpose of the Illiana Corridor is to provide a sustainable transportation solution that would improve east-west connectivity in the general vicinity of I-55 to the west and I-65 to the east in the Study Area in a manner consistent with the commitments in the Tier One Record of Decision (ROD), and that may be adapted to sustainable future local and regional transportation and economic development goals so as to:

- Improve regional mobility, travel times, and access to jobs by addressing growing east-west regional and national traffic demand that is required to traverse the region and South Sub-Region regardless of the trip origin or destination.
- Alleviate local system congestion and improve local system mobility, and address lack of connectivity for Will, Kankakee, and Lake counties to meet and support projected traffic growth from increased population, employment, transportation, and economic development. Also, the Illiana Corridor would address the lack of continuous, higher functional classification east-west travel routes in the Study Area, and improving travel times.
- Accommodate market demands for the increasing freight logistic transportation and more efficient freight movement including better accommodation of regional and national truck trips.

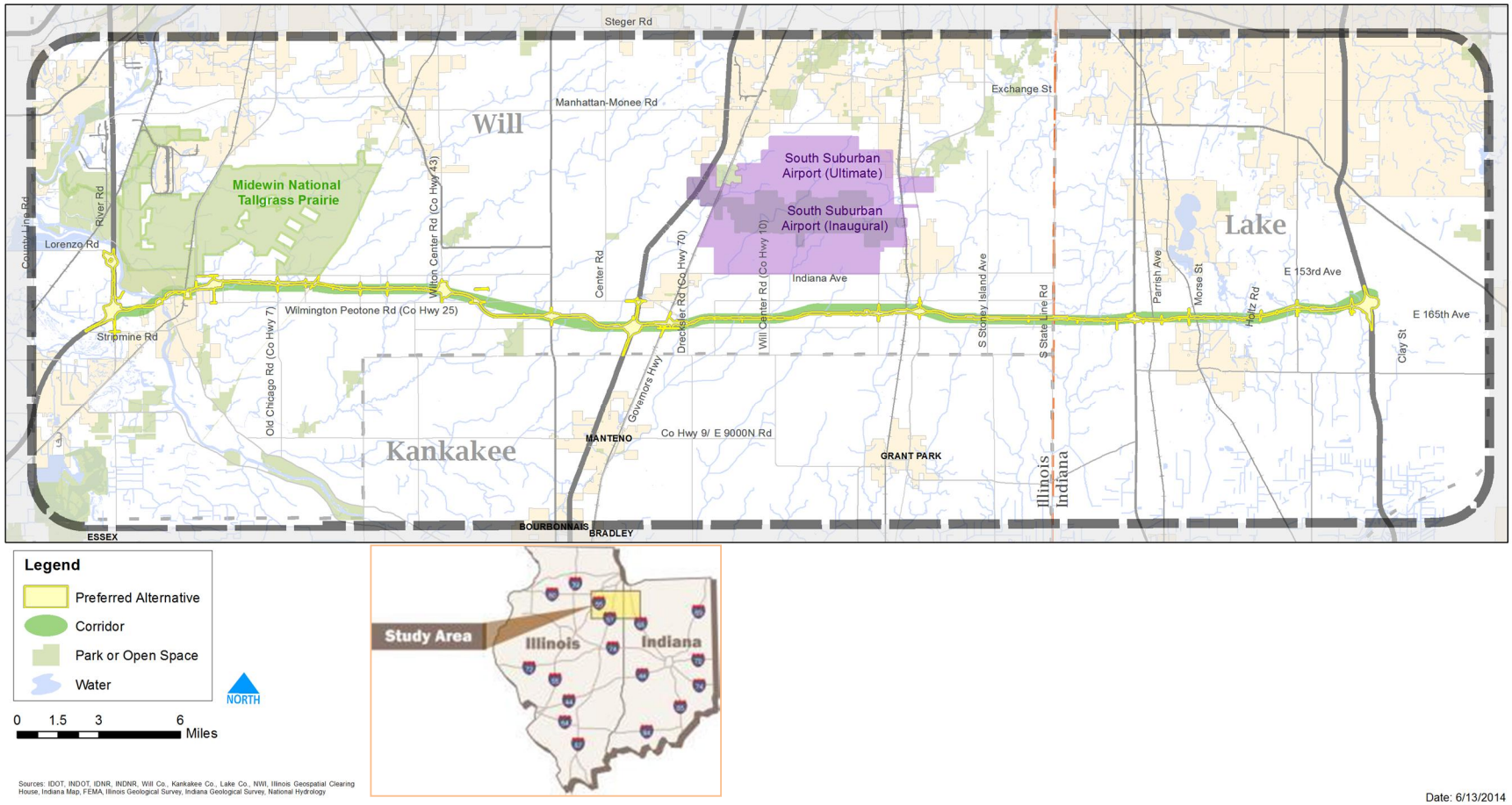
Building upon the selection of Corridor B3 as the preferred corridor in the combined Tier One Final Environmental Impact Statement (FEIS)/ROD, the Tier Two Draft EIS (DEIS) analyzed three build alternatives in addition to a No-Action Alternative. Based on a comparative evaluation of socioeconomic and environmental impacts, travel performance, and other factors including stakeholder and agency input, mainline Alternative 1 with IL-53 interchange Design Option 4 is the Preferred Alternative.

S.1 Project Description

The Illiana Corridor has been a component of long-range plans for the bi-state area since the early 1900s, and was first envisioned as a link in an outer ring of highways encircling the Chicago vicinity. Conceptual highway corridors linking Illinois and Indiana south of I-80 were also studied by metropolitan planning organizations (MPOs) in the 1960s and 1970s. More recently, a feasibility study for a potential Illiana expressway was completed in 2009 by the Indiana Department of Transportation (INDOT) and a supplemental study was completed by the Illinois Department of Transportation (IDOT) in 2010. On June 9, 2010, Governors Pat Quinn of Illinois and Mitch Daniels of Indiana moved the Illiana Corridor forward by signing a Memorandum of Agreement (MOA). This MOA outlined a mutual commitment by both states to further development of the project. Both states also passed legislation in 2010 enabling the use of public-private partnerships (P3s) for the Illiana Corridor, including operation as a toll or non-toll facility.

The Study Area for the Illiana Corridor (shown in Figure S-1) is approximately 950 square miles and is located in Will and Kankakee counties in Illinois and 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, US 30 to the north, and the southernmost tip of Will County to the south, including the northern portion of Kankakee County in Illinois. Transportation improvements were considered only for areas within the Study Area. However, to understand the local and regional impacts of the transportation alternatives analysis considered their effects both inside and outside the Study Area.

Figure S-1. Study Area and the Corridor with the Preferred Alternative Footprint



The National Environmental Policy Act (NEPA) process for the Illiana Corridor is being conducted in two steps or "tiers" that build upon one another.

The Tier One EIS was prepared to resolve issues regarding the transportation mode, facility type, and general location. The Tier One EIS analysis provided an evaluation of the transportation problems in the Study Area based on stakeholder input and engineering analysis, and was completed at a sufficient level of engineering and environmental detail to resolve the mode, facility type (e.g., type of roadway), and corridor location. The Tier One EIS resulted in the identification of a selected corridor: Corridor B3, which served as the starting point for the Tier Two alternatives analysis. As part of the Tier Two process, adjustments have been made to the Tier One corridor in order to further avoid or minimize environmental impacts, resulting in the current area referred to as "the Corridor."

The Tier Two EIS has been completed as a single study from I-55 on the west to I-65 on the east. Whereas the Tier One EIS assumed a working alignment generally located within the center of each corridor analyzed, along with generalized interchange locations, for comparative analysis, the Tier Two EIS includes a detailed analysis of alignment alternatives within the Corridor, as well as interchange locations and types, grade separations and road closures, and context sensitive design and sustainability features.

S.2 Summary of Purpose of and Need for Action

Existing and future travel demand in the Region is driven by growth in population, employment, and commuter traffic; growth of the intermodal and freight logistics industry; and the growth in the Region's role as a vital national link for transportation and commerce. The ability of the existing transportation network to accommodate these demands becomes strained as these travel demands increase. The Study Area does not have the required roadway network to accommodate this growth in local Study Area traffic and regional and national east-west traffic in the South Sub-Region, including freight (includes the nine county area south of Lake Michigan, see Figure 1-2 in Section 1.0).

The purpose of the Illiana Corridor is to provide a sustainable transportation solution that would improve east-west connectivity in the general vicinity of I-55 to the west and I-65 to the east in the Study Area in a manner consistent with the commitments in the Tier One ROD, and that may be adapted to sustainable future local and regional transportation and economic development goals. See Section 1.0, Purpose and Need for a full discussion of the purpose and need for the project

The jurisdictions of three MPOs extend over most of the Study Area: the Chicago MPO Policy Committee (Chicago MPO), the Northwestern Indiana Regional Planning Commission (NIRPC), and the Kankakee Area Transportation Study (KATS). All three agencies have recently updated their metropolitan transportation plans to a 2040 planning horizon; accordingly, the Tier Two EIS will use a 2040 planning horizon for consistency with these adopted regional plans.

The Illiana Corridor is described in the current 2040 metropolitan transportation plans of Chicago MPO, NIRPC, and KATS. Within the Chicago MPO planning area, the responsibilities of the MPO are carried out by the MPO Policy Committee with staff support from the Chicago Metropolitan Agency for Planning (CMAP). Within the NIRPC planning area, the responsibilities of the MPO are carried out by the NIRPC Full Commission. For simplicity, the terms "Chicago MPO" and "NIRPC" are used in the Tier Two EIS when referring to the MPO's.

The MPO Policy Committee considered and approved amendments to the Chicago MPO's fiscally constrained long range transportation plan, as well as the associated conformity determination and Transportation Improvement Program (TIP) at its October 17, 2013 meeting to include the Illiana Corridor. The Illiana Corridor was also included in Chicago MPO's congestion management process with the Plan amendment. The FHWA approved Chicago MPO's TIP and the IDOT Statewide Transportation Improvement Program (STIP) amendments on October 24, 2013.

The NIRPC Full Commission considered and approved amendments to NIRPC's fiscally constrained long range transportation plan, as well as the associated conformity determination and the TIP at its December 12, 2013 meeting to include the Illiana Corridor. The Illiana Corridor was also included in NIRPC's congestion management process with the Plan amendment. The FHWA approved the INDOT STIP amendment that included the NIRPC TIP amendment on January 31, 2014.

Although the Illiana Corridor is not located in Kankakee County or within the KATS planning boundary, the 2040 metropolitan transportation plan adopted by KATS (Kankakee County Regional Planning Commission (KCRPC), 2010) includes the Illiana Corridor as a solution to the problem of through trucks using Kankakee County as a connection between Illinois and Indiana.

The Study Area does not have a fully functional east-west road network, and the existing grid network of lower functional class roadways was historically developed primarily to serve its predominantly agricultural land use. Study Area land uses are now transitioning in character from rural to suburban, especially in the northern portions. For the Study Area to meet the regional, local, and freight demands, a more balanced functional transportation network is needed.

Transportation system improvements are needed in the Study Area to address the following needs:

- Improve Regional Mobility - addresses the need to develop a transportation system improvement that serves the projected growth in east-west traffic in the Region, South Sub-Region, and Study Area, reduces regional travel times, and improves access to jobs.
- Alleviate Local System Congestion and Improve Local System Mobility - focuses on the need to develop a transportation system improvement that serves the projected growth in local traffic, addresses the lack of continuous higher functional

classification east-west routes through the Study Area, and improves travel times/reduces delay.

- Provide for Efficient Movement of Freight - focuses on the need to improve the accessibility of freight movement to and from its distribution points throughout the Region, including providing more efficient freight movement on the roadway network.

Concurrence on the project's Tier One Purpose and Need statement from all NEPA 404 Merger Team participating agencies was received by June 2012. The Tier Two Purpose and Need statement reaffirms the Purpose and Need statement presented in Tier One with updates to the descriptions of the Study Area and the Regional Planning Context. On March 22, 2013, concurrence was obtained on the Tier Two Purpose and Need from the federal and state regulatory agencies participating in the NEPA 404 Merger Team process including: USACE, USEPA, USFWS, the Illinois Department of Natural Resources (DNR), the Illinois Department of Agriculture (DOA), the Illinois Historic Preservation Agency (IHPA), the Indiana Department of Environmental Management (IDEM), and the Indiana DNR.

S.3 Alternatives Considered

With the selection of both the corridor and mode in the Tier One combined FEIS/ROD, the range of alternatives considered in Tier Two includes the No-Action Alternative as a baseline condition, potential congestion management strategies, and build alternatives within each corridor section. The build alternatives are comprised of the mainline roadway alignment, interchange locations and types, grade separations, road closures, and footprint flexibility for context sensitive solutions (CSS) and sustainability features. The following presents a summary of each alternative considered.

S.3.1 No-Action Alternative

The No-Action Alternative consists of improvements to existing transportation facilities in the Study Area that are expected to be constructed by the year 2040 (see Table S-4 in Section S.6 for a list of the proposed transportation improvements). It does not include the proposed action that is being considered in this study (i.e., the Illiana Corridor). Committed projects were included in the No-Action Alternative. Committed projects include those programmed projects that are included in the 2040 "fiscally-constrained" capital projects of Chicago MPO, NIRPC, and KATS, and other reasonably anticipated projects within and adjacent to the Study Area based on coordination with the Study Area counties, IDOT, and INDOT, but excluding the Illiana Corridor project.

The No-Action Alternative represents a baseline for comparison against the build alternatives. The transportation conditions that would exist under the No-Action Alternative are described in Section 2.2.1. The environmental conditions that would exist under the No-Action Alternative are generally consistent with the "existing conditions" as described in Section 3.0, except to the extent that those existing conditions would be affected by other actions (e.g., other transportation or development projects)

identified in the current fiscally constrained metropolitan transportation plans (2040) of Chicago MPO, NIRPC, and KATS.

S.3.2 Congestion Management Process (CMP) Alternatives

Federal transportation planning regulations require that for projects within designated Transportation Management Areas (TMAs), a regional planning CMP must be established to evaluate the performance of the existing transportation system and to support the evaluation of the effectiveness of transportation improvements being considered in reducing congestion within the TMA. For TMAs designated as nonattainment for carbon monoxide and/or ozone, congestion management strategies must be fully considered as an alternative to increasing capacity for single occupancy vehicles (SOV). 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 development process for the Transportation Improvement Program (TIP) and the metropolitan transportation plan constitutes the regional planning CMP for the northeastern Illinois and northwestern Indiana TMAs. These CMPs are documented via various materials that are available through CMAP and NIRPC. The analysis contained in the Illiana Corridor Transportation System Performance Report (TSPR)[1] prepared as part of the Tier One combined FEIS/ROD demonstrated that rail freight, passenger rail, commuter rail, intercity bus, and commuter bus do not have the ability to meet the project Purpose and Need as stand-alone modal alternatives, and are therefore not considered further. The use of non-motorized transportation (i.e., pedestrian and bicycle) can be categorized as recreational, local errands/short trips and work trips, and would also not have the ability to meet the project Purpose and Need as a stand-alone modal alternative or in combination with the rail and bus modal alternatives. However, the flexibility incorporated into the project footprint to include CSS features will allow for accommodations of existing trails crossing the Corridor, such as the Wauponsee Glacial Trail, and for future development of multi-use bicycle/pedestrian trails along and across the Corridor.

On this basis, stand-alone CMP alternatives will not satisfy the project purpose and need and, therefore, the Illiana Corridor is a warranted project for adding SOV capacity. The included footprint flexibility along and across the Illiana Corridor provides the opportunity for congestion management strategies that will help sustain the project's effectiveness.

S.3.3 Build Alternatives

For the purposes of this study, the "Corridor" is defined as the area encompassed by the nominal 2,000 feet-wide Tier One Corridor B3, as well as the areas encompassed by the minor excursions outside the B3 boundary identified during the Tier Two alternatives development process. The Corridor within which the alternatives were evaluated is

[1] http://www.illianacorridor.org/information_center/library.aspx

approximately 50-miles long having an east-west orientation with a western terminus at I-55 just north of the City of Wilmington in Illinois and an eastern terminus at I-65 approximately three miles north of State Route (SR) 2 in Indiana, as shown in Figure S-1. Twelve (12) sections within the Corridor were identified for the Tier Two alternatives development and evaluation process based on logical geographic boundaries or unique settings. The 12 sections are listed in Table S-1 and shown on Figure S-2.

Table S-1. Tier Two Analysis Sections

Section No.	State	Section Limits
1	IL	I-55 at Lorenzo Road Interchange
2	IL	I-55 Interchange
3	IL	East of I-55 Interchange to Union Pacific Railway (UPRR)
4	IL	UPRR to East of Old Chicago Road
5	IL	East of Old Chicago Road to Walsh Road
6	IL	Walsh Road to Center Road
7	IL	Center Road to Will Center Road
8	IL	Will Center Road to Illinois/Indiana State Line
9	IN	Illinois/Indiana State Line to West of Mount Street
10	IN	West of Mount Street to East of Holtz Road
11	IN	East of Holtz Road to East of Broadway Street
12	IN	East of Broadway Street to I-65

The Tier Two alternatives development and evaluation process built upon the selection of Corridor B3 in Tier One and focused on roadway alignment, interchange locations and types, grade separations, road closures, and preliminary facility design including CSS and sustainability features.

The representative Tier One working alignment for the Corridor was a reference starting point for the Tier Two build alternatives which were developed based on the following preliminary engineering requirements:

- Initial preliminary facility design requirements including access requirements, road closures, cross route improvements, and frontage road connections;
- Further evaluation of roadway alignment based on impact avoidance and minimization;
- Interchange locations and types;
- CSS features including water quality best management practices (BMPs) and sustainability; and

- Economic analysis of grade separations and road closures.

The Tier Two build alternatives were further developed through technical performance analysis, extensive stakeholder involvement, and localized comparative analysis of environmental impacts.

For purposes of comparison within Section 3.0 of the Tier Two FEIS, the alternatives carried forward within the sections have been combined into three representative alternatives that span the entire length of the Corridor from I-55 to I-65 as follows:

- Alternative 1 is comprised of the mainline alternative or interchange design option within each section representing the alternative with least overall socioeconomic and environmental impact based on the data available in the alternatives development and evaluation process.
- Alternative 2, correspondingly, consists of those sections of successively greater impacts (where an option is available). In some sections, only one alignment option was available. In those sections, absent a second mainline alternative, the single mainline section from Alternative 1 was retained to form a continuous linear alternative. The common sections are consistent for each alternative, allowing the narrative and tables to focus on the incremental differences between Alternatives 1 and 2.
- Alternative 3 incorporates the two locations where three options were identified (Sections 3 and 12) and is comprised of those mainline alternative sections determined to have the greatest impact of the three alternatives considered.

In the vicinity of IL-53, six interchange options were identified for analysis in the Tier Two DEIS. This includes five build options (at IL-53 (1 option), Riley Road (3 options), and Old Chicago Road (1 option)); and a no interchange option. As discussed in Section 2.0, Design Option 1, the partial cloverleaf interchange directly at IL-53, was dismissed from further consideration in this FEIS because it would cause adverse effects to the NRHP-listed Alternate Route 66, Wilmington to Joliet and result in a direct use of the road as a Section 4(f) historic property. Design Options 2-6 are feasible and prudent alternatives that avoid adverse effects to Alternate Route 66 and do not result in a direct use of the road as a Section 4(f) historic property. In a letter dated March 11, 2014, the Illinois SHPO concurred with the preliminary effect determination of "no adverse effect" to Alternate Route 66 for the mainline alternatives and Design Options 2-6 and the overall preliminary "no adverse effect" determination for all other NRHP-listed or eligible aboveground historic properties in Illinois. After reviewing FHWA's revised final effects finding of "no adverse effect" to aboveground historic properties, the Illinois SHPO had no further comments on the final effects finding.

Therefore, the interchange design options carried forward for analysis include the following (with equivalent IL-53 interchange type described in Section 2.0 in parentheses):

- **Design Option 2** = conventional diamond interchange directly at Riley Road, approximately one mile east of IL-53 (Type 2A)
- **Design Option 3** = modified partial cloverleaf interchange directly at Riley Road (Type 2B)
- **Design Option 4** = conventional diamond interchange offset west of Riley Road (Type 2C)
- **Design Option 5** = split interchange at Old Chicago Road (Type 2D)
- **Design Option 6** = no interchange at IL-53 or in the immediate vicinity (Type 3)

All design options include the footprint of the mainline and intersecting cross roads near IL-53; Design Options 2-5 include the additional footprint of the interchange elements. The impact analysis presented in Section 3.0 states the impacts of each mainline alternative including the impacts associated with the Design Option 6 footprint. The separate analysis of each design option is presented in Section 3.19. The interchange options at IL-53 do not alter the mainline roadway alternatives, and vary only by location and size of the interchange footprint. Each of the IL-53 interchange design options can be utilized with any of the mainline alternatives.

S.3.3.1 Funding and Tolling

The Tier Two Alternatives to be Carried Forward Technical Memorandum (ACFTM) explains that both states have determined that traditional funding alone would be inadequate for project implementation. As discussed in Section 2.2.4, both states have determined that traditional funding alone is inadequate for project implementation, and that a combination of traditional and innovative funding and financing strategies, including tolling, will be required. As such, the use of tolling to finance a portion of the project cost is seen as the only viable method of project delivery, and delivery under an entirely non-tolled scenario has been eliminated from further consideration in this Tier Two FEIS.

A toll sensitivity analysis was performed to evaluate the effect on traffic projections based on a variation of this traffic retention amount resulting from a range of tolling assumptions (see Appendix C). The toll sensitivity analysis explored a range of tolls that retain approximately 30 percent to 60 percent of the traffic on the Illiana Corridor versus a non-tolled facility. The results of this analysis show that the assumed 43 percent traffic retention on the Illiana Corridor is representative of the traffic volumes that would result under a range of other higher and lower toll scenarios.

S.3.4 Alternatives Carried Forward Footprint Modifications

Based on additional technical analysis subsequent to issuance of the Tier Two DEIS and in response to comments received on the Tier Two DEIS, modifications to the footprints of the alternatives carried forward were considered on a corridor-wide basis and at specific locations. The modifications to the mainline alternatives and IL-53 interchange design options are summarized below.

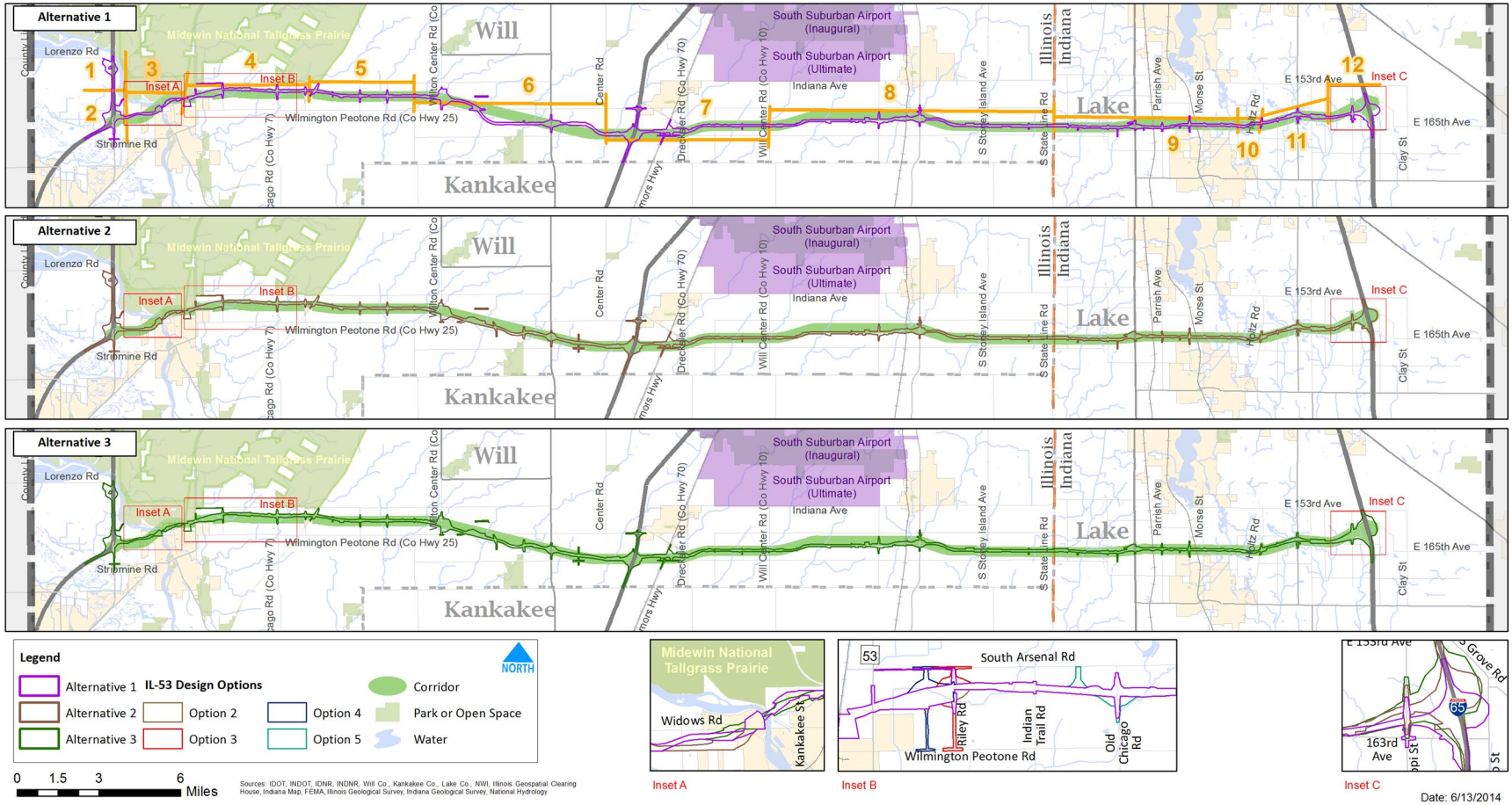
The footprint modifications to the mainline alternatives include:

- The existing frontage road along the west side of the I-55 interchange would be maintained through the IL-129 interchange to maintain access for the properties west of I-55.
- Proposed stormwater compensatory storage sites were refined.
- Space for a multi-use trail connection was added along Arsenal Road from IL-53 to Riley Road.
- The footprint at the southeast quadrant of the crossing of the Wauponsee Glacial Trail was expanded to incorporate 6:1 embankment side slopes.
- The frontage road in the northeast quadrant of the Wilton Center Road interchange was revised to minimize stream and floodplain impacts.
- The Agricultural Conservation and Protection Area in Peotone Township between US 45 and Center Road will be avoided.
- Based on a more detailed traffic analysis of the local road network within or near the Illiana Corridor, at-grade intersection and/or interchange improvements were determined to be required resulting in an expanded footprint in several locations:
    - IL-53 at New River Road was shifted to the north and a left turn lane was added to IL-53.
    - Geometric improvements were added to the eastbound approach for Kennedy Road at IL-50.
    - Geometric improvements to all approaches for Wilmington-Peotone Road at the I-57 southbound ramps and the I-57 northbound ramps.
    - Geometric improvements were added to the northbound and southbound approach for IL-1 at Corning Road.
    - The US 41 interchange was shifted to the north to avoid impacts to the electric transmission lines running south of the interchange.

In addition to the revisions to mainline alternatives, the IL-53 interchange design options were also modified. The most significant modification was to Design Option 4. In order to alleviate drainage issues on the west side of Riley Road, and to improve sight distance at the Riley Road/Wilmington-Peotone Road intersection that will have additional interchange traffic, Design Option 4 realigns the south leg of the interchange to run straight north-south, rather than curving to the east and connecting to existing Riley Road. All design option footprints were modified to remove a potential compensatory storage area at the southeast quadrant of the UPRR and IL-53.

The representative mainline alternatives and IL-53 design options being carried for further analysis are shown in Figure S-2.

Figure S-2. Corridor Alternatives Carried Forward for Detailed Study in the Tier Two FEIS



In the case of Alternatives 1, 2, and 3 utilizing a different design option other than Design Option 6, the impacts of Design Option 6 are replaced by the impacts of that particular design option (see Section 3.19 for the analysis of all design options).

S.4 Alternatives and Design Options Impacts and Mitigation

A summary of key impacts to social and environmental resources for Alternatives 1, 2, and 3, is provided in Table S-2 and the following text. The impacts presented here and in Section 3.0 may vary from results presented in Section 2.0 based on the definition of impact criteria used within Section 3.0 and the associated analysis methodology. The impact screening in Section 2.0 used geographic information systems as a tool to identify the sectional alternatives carried forward and then a preliminary comparison of the representative corridor alternatives carried forward. The analysis and results in Section 3.0 are based on more detailed analysis, including field surveys. The impacts associated with the IL-53 interchange design options are summarized in the text. Also included is a summary of the proposed minimization and mitigation measures. Refer to Section 3.0 for more detail regarding impacts and mitigation.

Table S-2. Summary of Key Environmental Impacts for Alternatives[1]

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Design Characteristics						
Project Length (miles)	50.3 (38.5 Illinois / 11.7 Indiana)		50.6 (38.8 Illinois / 11.8 Indiana)		50.6 (38.7 Illinois / 11.9 Indiana)	
Footprint Area (acres)	4,337 (3,311 Illinois / 1,025 Indiana)		4,453 (3,396 Illinois / 1,057 Indiana)		4,636 (3,377 Illinois / 1,259 Indiana)	
New Lane Miles of Limited-Access Highway	201.0 (154.1 Illinois / 46.9 Indiana)		202.4 (155.2 Illinois / 47.2 Indiana)		202.5 (154.9 Illinois / 47.6 Indiana)	
Interchanges	11* (8 Illinois / 3 Indiana)					
Road Closures	14 (11 Illinois / 3 Indiana)					
Social and Economic						
Community Cohesion	One residential neighborhood separated from core of Wilmington		Same as Alternative 1		Same as Alternative 1	
Public Facilities	Access impact to City of Wilmington water treatment plant and Bobcat Field		Same as Alternative 1		No impact	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Non-agriculture Residential Relocations (number)	29	12	26	14	61	16
Total	41		40		77	
Non-agricultural Commercial Relocations (number)	5	1	4	1	5	1
Total	6		5		6	
Non-agricultural Commercial Partial Impacts (number)	5	0	5	0	5	0
Total	5		5		5	
Intermodal Facilities (acres)	121.6	0	121.6	0	121.6	0
Total	121.6		121.6		121.6	
Agriculture						
Farm Parcels (number)	279	144	294	141	295	149
Total	423		435		444	
Farmland (acres)	2,450	682	2,492	669	2,487	830
Total	3,132		3,161		3,317	
Farmstead Relocations (number)	23	7	25	6	25	6
Total	30		31		31	
Agri-business Relocations (number)	0	1	0	1	0	1
Total	1		1		1	
Agricultural Land Parcel Severances (number)	71	43	67	35	78	34
Total	114		102		112	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Landlocked Parcels (number)	76	49	75	38	89	37
Total	125		113		126	
Landlocked Parcels (acres)	1,049	229	1,074	185	1,153	176
Total	1,278		1,259		1,329	
Uneconomical Remnants (number)	16	11	17	10	14	11
Total	27		27		25	
Uneconomical Remnants (acres)	43	22	40	18	29	15
Total	65		58		44	
Adverse Travel (miles)	77	13	71	14	71	12
Total	90		85		83	
Prime Farmland (acres)	1,534	426	1,544	456	1,538	557
Total	1,960		2,000		2,095	
Statewide Important Farmland (acres)	197	14	194	13	192	13
Total	211		207		205	
Cultural Resources						
Potential Adverse Effects to Archaeological Resources (number)[2]	34	3	31	3	32	3
Total	37		34		35	
Adverse Effects to Historic Above-Ground Resources (number)	0	0	0	0	0	0
Total	0		0		0	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Air Quality						
Carbon Monoxide (CO)	Not predicted to cause or exacerbate a violation of the NAAQS for CO		Same as Alternative 1		Same as Alternative 1	
Particulate Matter (PM)	Values are less than the relevant PM NAAQS at appropriate receptors		Same as Alternative 1		Same as Alternative 1	
Regional Emissions	Predicted to decrease regional pollutant burdens of PM_{10} and $PM_{2.5}$ by 0.3% to 1.9% and increase regional pollutant burdens of HC, NOx, and CO by 0.4% to 3.3%, as compared to the No-Action Alternative		Same as Alternative 1		Same as Alternative 1	
Mobile Source Air Toxics (MSAT) Emissions	Predicted to be higher than those predicted under the No-Action Alternative. However there is a significant decrease in all MSAT emissions as compared to existing conditions		Same as Alternative 1		Same as Alternative 1	
Noise[3]						
Sites with Noise Impacts (number)	22	19	22	18	23	21
Total	41		40		44	
Energy						
Annual Energy Use (2040)	3.7% increase over No-Action		Same as Alternative 1		Same as Alternative 1	
Natural Resources						
Noteworthy Prairies (acres)	9.34	0.33	9.34	0.33	9.34	0.33
Total	9.67		9.67		9.67	
Forest Areas Greater than 20 Acres (acres)	8.9	42.0	8.3	76.9	8.9	98.3
Total	50.9		85.2		107.2	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Total Potential Indirect Impact to Existing Grassland Bird Habitat (acres)[4]	73.15		Same as Alternative 1		Same as Alternative 1	
Federally Threatened and Endangered Species[5]	Likely adverse effect to: sheepnose mussel, Eryngium stem borer moth, and northern long-eared bat		Same as Alternative 1		Same as Alternative 1	
State Threatened and Endangered Species	Black sandshell mussel, purple wartyback mussel, slippershell mussel, Blanding's turtle, ornate box turtle, black-crowned night heron, Virginia rail, American badger, eastern red bat, blue-spotted salamander, northern leopard frog, and great egret		Same as Alternative 1		Same as Alternative 1	
Water Resources						
Rivers, Creeks & Tributaries (linear feet)	21,334	4,382	22,061	7,059	20,847	7,465
Total	25,716		29,120		28,312	
Rivers, Creeks & Tributaries (acres)	5.12	0.69	4.84	1.03	4.96	1.06
Total	5.81		5.87		6.02	
Lakes and Ponds (number)	1	9	1	5	1	9
Total	10		6		10	
Lakes and Ponds (acres)	0.03	2.93	0.03	1.31	0.03	3.02
Total	2.96		1.34		3.05	
Groundwater Resources						
Wells Within Footprint (number)	21	14	23	15	23	16
Total	35		38		39	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Floodplains and Floodways						
Floodplain Fill Volume (acre-feet)	205.9	41.6	211.7	41.6	209.2	41.6
Total	247.5		253.3		250.8	
Floodway Fill Volume (acre-feet)	0.2	0.0	0.2	0.0	0.2	0.0
Total	0.2		0.2		0.2	
Floodplain Encroachments[6] (number)	36	8	37	8	37	8
Total	44		45		45	
Floodway Encroachments (number)	1	6	1	6	1	6
Total	7		7		7	
Wetlands						
Total Wetlands (number)	57	58	56	70	57	77
Total	115		126		134	
Wetland Area (acres)	31.21	32.99	38.82	37.98	29.83	42.68
Total	64.20		76.80		72.41	
High Quality Aquatic Resources (HQAR) Wetlands (acres)	5.58	20.68	14.53	23.64	4.01	24.56
Total	26.26		38.17		28.57	
Special/Hazardous Waste						
High Risk Recognized Environmental Condition (REC) Sites (number)	17	2	17	2	17	2
Total	19		19		19	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Mineral Resources						
Limestone (linear miles crossed)	33.6	9.9	33.5	9.9	32.5	9.9
Total	43.5		43.1		42.4	
Sand and Gravel (linear miles crossed)	5.9	0	6.0	0	6.5	0
Total	5.9		6.0		6.5	
Geologic Hazard	Moderate risk for weak and compressible soils, expansive soils, and seismicity		Same as Alternative 1		Same as Alternative 1	
Visual Resources						
Visual Impacts	Greatest impacts in Grand Prairie regional landscape because of the more open terrain, and the more visually prominent changes in elevation at the cross roads with the new overpass structures		Same as Alternative 1		Same as Alternative 1	
Indirect and Cumulative						
2040 Population Change	22,680 (1%) increase over 2040 No-Action		Same as Alternative 1		Same as Alternative 1	
2040 Employment Change	14,210 (1.3%) increase over 2040 No-Action		Same as Alternative 1		Same as Alternative 1	
Land Area Needed in Study Area to Accommodate Indirect Growth (acres)	2,885 for residential development 2,368 for commercial/ industrial development		Same as Alternative 1		Same as Alternative 1	
Section 4(f)						
Des Plaines State Fish and Wildlife Area	No direct, temporary or constructive use		Same as Alternative 1		Same as Alternative 1	
Alternate Route 66, Wilmington to Joliet[7]	No adverse effect; No direct, temporary or constructive use		Same as Alternative 1		Same as Alternative 1	

Table S-2. Summary of Key Environmental Impacts for Alternatives (continued)

Resource/ Attribute/ Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Midewin National Tallgrass Prairie	No direct, temporary or constructive use		Same as Alternative 1		Same as Alternative 1	
Wauponsee Glacial Trail	*De minimis* impact; Elevate and relocate portion of trail to the east approximately 375 feet		Same as Alternative 1		Same as Alternative 1	

* Interchange count of 11 assumes an interchange in the vicinity of IL-53 (Design Options 2 -5)

1. Analysis of impacts for the alternatives includes Design Option 6 as the base condition.
2. At least 65 sites in Illinois have been identified that warrant further investigation to evaluate NRHP eligibility prior to assessing effects. Phase II testing is recommended for the four sites in Indiana to clarify NRHP eligibility prior to assessing effects.
3. For Illinois, a noise impact occurs when noise levels are predicted to approach, meet, or exceed the Noise Abatement Criteria (NAC) with a substantial increase being greater than 14 dB(A) over existing noise levels, and for Indiana a noise impact occurs when noise levels approach to within one dB(A) of the appropriate FHWA NAC with a substantial increase being an increase of 15 dB(A) or more over existing noise levels.
4. Includes passerine and grassland bird habitat and upland sandpiper habitat in Midewin National Tallgrass Prairie. In addition, each alternative would impact two loggerhead shrike nests. More detail regarding the analysis of potential impacts to avian species in Midewin National Tallgrass Prairie is presented in Section 3.8 and Appendix R.
5. The Eryngium stem borer moth is a candidate species for federal protection and the northern long-eared bat is proposed for federal listing as endangered.
6. Includes both transverse and longitudinal encroachments.
7. Alternate Route 66 only has no adverse effect and no Section 4(f) use with any alternative and IL-53 design option.

This table has been updated since the publication of the Tier Two DEIS due to subsequent modifications to the alternative footprints, which are described in Section 2.0.

Social/Economic Impacts

The Corridor traverses an area that is largely undeveloped, rural, and agricultural. As a result, housing related impacts from the proposed project are expected to be minimal; however, some neighborhood impacts and residential relocations are anticipated. The footprint of each alternative would potentially separate one residential area from the downtown area of Wilmington, by creating separation between the residential neighborhood to the north and the core of Wilmington on the south and having a potentially negative impact on community cohesion. Widows Road would remain open maintaining direct access to the Wilmington downtown area.

The proposed project is also likely to generate positive neighborhood and community impacts in the form of improved mobility. Improved mobility could be realized as a result of the diversion of vehicles from lower type facilities (i.e., local and collector roads) onto higher type facilities (i.e., arterials) or frontage roads, and by the addition or

improvement of access points to and from higher type facilities (e.g., removing truck traffic from through town routes and providing improved highway access).

There are 46 roadways that cross the Corridor. Currently, 32 of the 46 crossings are proposed to remain open. The remaining 14 crossings are proposed to be closed, impeding the connection between the north and south side of the Corridor in these locations. The roads proposed for closing are listed below:

Illinois

- I-55 East Frontage Road
- Indian Trail Road
- 17th Avenue/Martin Long Road
- Walsh Road
- 88th Avenue
- Ridgeland Avenue
- Egyptian Trail
- Crawford Avenue
- Western Avenue
- Stoney Island Avenue
- Klemme Avenue

Indiana

- Sheffield Avenue
- Marshall Street
- Harrison Street

The proposed project is also likely to generate positive neighborhood and community impacts in the form of improved mobility by reducing congestion, increasing travel speeds, and encouraging truck traffic to use higher classification roadway facilities.

Alternatives 1 and 2 have the potential to impact the City of Wilmington property on Widows Road just west of the Kankakee River. The affected property includes the City's water treatment plant and Bobcat Field; consisting of two youth league practice fields. (FHWA has determined that Bobcat Field is not a recreational resource subject to protection under Section 4(f)). Access from the west would be eliminated due to construction of a new roadway along the Alternative 1 and 2 footprints. The northern practice field would also be directly impacted by Alternatives 1 and 2, while Alternative 2 would also impact the southern field. Access from the southeast entrance would still be viable; however, it is currently a gated access.

Each alternative would result in residential and commercial relocations. Alternative 1 would require relocation of 41 residences, 30 farmsteads, and six non-agricultural commercial businesses. Alternative 2 would require relocation of 40 residences, 31 farmsteads, and five non-agricultural commercial businesses. Alternative 3 would require relocation of 77 residences, 31 farmsteads, and six non-agriculture commercial businesses. Residential impacts with the IL-53 design options vary, with Design Option 4 having no residential and four farmstead relocations. The remaining interchange options each have one residential relocation, and range from five to seven farmstead relocations depending on the design option. Design Option 4 has a lower number of relocations as it is the only design option that does not require improvements to Riley Road at the Arsenal Road intersection. At this location, with all design options except Design Option 4 (which does not require an overpass) one residence and one farmstead would require relocation. Just compensation would be provided for each property acquired for project right-of-way.

An analysis of the short and long-term economic impacts of the tolled scenario was completed as part of the overall analysis of social and economic impacts to the local communities. Economic output created during the construction phase would be heavily dependent upon spending levels and, as such, the largest output impact ($666 million, 2012 $) is seen in 2015, the year with the highest level of expenditures. As job years created are tied closely to spending levels, it is to be expected that the greatest number of jobs (4,364) would be seen in 2015, the year with the highest level of expenditures. Over the long-term, the project is expected to generate additional economic output of $3.67 billion cumulatively over the 30 year analysis period, or an average of $122.4 million each year. The proposed project, through its accessibility improvements, would sustain an average of 872 jobs per year throughout the analysis period.

An evaluation of environmental justice (EJ) included an assessment of minority and low-income populations within the Study Area consistent with Executive Order 12898. Based on the evaluation of the minority racial and ethnic demographics and income characteristics of the populations crossed by the Corridor in Illinois and Indiana, none of the three build alternatives would cause disproportionately high and adverse impacts on minority or low-income populations. Furthermore, the potential residential displacement is small in the three census block groups that have minority or low-income populations above the Community of Comparison (COC) levels for Illinois and Indiana. Analysis of the three census block groups identified that there is a neutral benefit/impact because there is no disproportionate impact between EJ populations of concern and non EJ populations related to access, community cohesion and other issues associated with EJ.

The Illiana Corridor project includes tolling as a method for project financing; therefore, this evaluation of the impacts to minority and low-income populations was also conducted to determine if there would be a disproportionately high or adverse impact to the EJ populations as a result of tolling. The Illiana Corridor project would be a new transportation alternative for transportation users in the Study Area and is intended to serve those traveling long distances. The addition of the project would not impact existing accessibility for residents of EJ populations of concern or other minority or low-income residents of the Study Area. No existing parallel facilities would be removed, altered, or tolled as part of this study. Because of this, it is found that the addition of the Illiana Corridor would have a neutral benefit/impact to all EJ populations in the Study Area.

Most communities have not specifically included the proposed transportation improvements in their local planning efforts, with the exception of Manhattan, Illinois and Cedar Lake, Indiana. Most communities intend to incorporate the proposed project in their plans as it becomes more defined, as indicated by their responses in the context audit completed as part of the stakeholder involvement process for the project. As part of the Tier Two process, the project team has engaged in the following activities: 1) identify local land use issues arising from the Illiana Corridor, and 2) recommend a strategy to direct future land use planning at the regional, county, and local levels. Since these tasks were implemented, IDOT has committed funds for future land use planning activities in Will County, Illinois.

In addition to municipal level planning efforts, the Midewin National Tallgrass Prairie is also a local planning stakeholder. The US Department of Agriculture (USDA) has undertaken planning efforts for the area that outline a vision for a major regional destination attracting over one million visitors per year. While none of the alternatives would have direct impacts to the Midewin National Tallgrass Prairie, they are all located near its southern boundary. While there are no known plans that identify a non-motorized access route between Midewin National Tallgrass Prairie and the adjacent communities such as Wilmington, stakeholder coordination has identified this as a concept that may be considered. The proposed alternatives may present a barrier to future routes to Midewin National Tallgrass Prairie if planned along a route other than existing roadways. Currently the only roadway proposed for closure in the area is Indian Trail. The remaining roadways, IL-53, Riley Road, Old Chicago Road, and Symerton Road, will remain open, in addition to the existing Wauponsee Glacial Trail to allow access between communities and Midewin National Tallgrass Prairie.

In addition to providing additional capacity to address the projected increase in traffic and congestion, benefits of the proposed project include providing better access to jobs throughout the Study Area and better access to properties that could be commercially developed.

Travel demand modeling projects that congested vehicle miles traveled (VMT) on arterials within the Study Area will increase to more than 1.2 million miles per day by 2040 with the No-Action Alternative. In comparing the build alternatives, travel performance measures showed no variation in impact between the alternatives. All build alternatives show improvements to travel performance when compared to the No-Action Alternative. When compared to the 2040 No-Action Alternative, all IL-53 interchange design options would result in a reduction of projected 2040 traffic on local roads in the vicinity of the Midewin National Tallgrass Prairie. Along IL-53 there would be a slight increase in 2040 traffic along IL-53 with Design Options 2-4, while Design Options 5 and 6 would reduce traffic along IL-53.

The proposed project would improve regional access to the identified intermodal facilities and the business parks. Potential local impacts to these facilities may include land acquisition, changes in travel patterns, and changes in access. The proposed improvements at the Lorenzo Road interchange associated with each alternative would require approximately 71 acres of the currently undeveloped RidgePort property. Alternatives 1, 2, and 3 would result in an additional 51 acres of impact to the RidgePort facility in the vicinity of the IL-129/Illiana Corridor interchange in order to provide additional access to the proposed RidgePort facility. This impact would also occur on currently undeveloped property. Coordination with the RidgePort facility developer has determined that the RidgePort facility developer is amenable to these impacts as they provide improved access to the property. Therefore, each build alternative would have approximately 122 acres of impact to the currently undeveloped RidgePort intermodal facility.

Agriculture Impacts

The impacts associated with each alternative to agricultural related resources are presented in Table S-2. With regard to agricultural impacts, Alternative 3 would result in the greatest overall impact to agricultural resources. Alternative 2 generally has the least overall impact to agricultural resources.

Agricultural impacts associated with the IL-53 interchange design options are shown in Table S-3.

Table S-3. Agricultural Impacts for the IL-53 Design Options

Farm Operations	Design Option 2	Design Option 3	Design Option 4	Design Option 5	Design Option 6
Number of Farm Parcels[1]	40	40	35	38	37
Farmland Impacts (acres)	333	331	340	340	307
Farmstead Relocations (number)	7	6	4	5	5
Agribusiness Relocations (number)	0	0	0	0	0
Agricultural Land Parcel Severances (number)	9	9	10	9	9
Landlocked Parcels (number/acres)	6/115	5/113	5/113	6/109	5/113
Uneconomical Remnants (number/acres)	2/11	2/8	2/10	1/1	1/1
Adverse Travel (miles)	15	15	17	16	16
Prime Farmland (acres)	155	149	143	163	141

[1] Represents the number of farmed parcels. The number of farms impacted would be less as a farm may be comprised of one or more parcels.

Cultural Resources Impacts

Each alternative has the potential to affect archaeological sites in the Illinois portion of the Corridor that warrant National Register of Historic Places (NRHP) consideration. Alternative 1 would potentially affect 34 sites, Alternative 2 would potentially affect 31 sites, and Alternative 3 would potentially affect 32 sites. Phase II investigations are recommended to determine their location within the Corridor and alternative footprints and to clarify their eligibility for inclusion on the NRHP. In Indiana, four sites that warrant NRHP consideration are located within the alternative footprints. Phase II investigations for the four sites in Indiana recommended for NRHP consideration began in Fall 2013 and will continue in Fall 2014 through Spring 2015, weather permitting. One historic Euro-American cemetery that may be eligible for inclusion in the NRHP for the information it contains is located near the Corridor in Illinois, but would be avoided by all alternatives. There is the potential that Design Option 5 (one site) and Design Option 6 (two sites) would impact archaeological sites. These sites have been identified as requiring further survey, review, and evaluation for NRHP eligibility and to assess effects continuing after the Tier Two FEIS is completed and ROD executed. There would be no impacts to archaeological sites with Design Options 2, 3, and 4.

Additional unknown archaeological resources may also be located in the Corridor. Because further review and evaluation will be necessary to identify archaeological resources and assess effects will continue after the Tier Two FEIS is completed and ROD executed, FHWA has issued a finding of "adverse effect" for the project. Pursuant to 36 CFR 800.5(a)(3), FHWA will follow a phased application of criteria of adverse effect because access to properties is restricted and the alternatives under consideration consist of large land areas. A Programmatic Agreement (PA) has been developed and executed and is included in this FEIS to describe the process to continue identification of archaeological properties and mitigation of adverse effects, if necessary beyond the Tier Two ROD. Upon reviewing the Tier Two DEIS public comments, a document consistent with the requirements of 36 CFR 800.11 and a draft PA were sent to consulting parties and state SHPOs for review and comment. FHWA notified the Advisory Council on Historic Preservation (ACHP) of its intent to prepare a PA pursuant to 36 CFR 800.6(a)(1). The ACHP declined to participate in Section 106 consultation.

For above-ground historic resources, 13 NRHP-listed and -eligible historic properties in Illinois and two NRHP-listed and -eligible historic properties in Indiana are located in the project's Area of Potential Effects (APE). All alternatives cross between the NRHP boundaries of the NRHP-eligible John P. Lynott Summer House and the NRHP-eligible Stone Farmstead but do not cross either, and cross over the NRHP-listed Alternate Route 66, Wilmington to Joliet, all located in Illinois; the remaining properties are located outside of the Corridor but within the APE.

Based on FHWA's Section 106 effect determinations to aboveground historic properties, Design Options 2, 3, 4, 5, and 6 are feasible and prudent alternatives that will not adversely affect Alternate Route 66, Wilmington to Joliet or any other NRHP-listed or eligible aboveground historic properties in the vicinity of any of these design options. No direct interchange would be located at or in the immediate vicinity of IL-53. The proposed overpass associated with these design options would not physically impact the road and although the existing New River Road and IL-53 intersection would be shifted north to accommodate the overpass, it would be identical to the existing intersection. These project facilities would not further diminish the road's integrity and would not cause adverse effects to Alternate Route 66. Furthermore, none of the alternatives would adversely affect any NRHP-listed or eligible aboveground historic properties, and therefore, FHWA has determined there is "no adverse effect" to aboveground historic properties. In a letter dated March 11, 2014, the Illinois SHPO concurred with the preliminary effects determination of "no adverse effect" to Alternate Route 66 or any other aboveground historic properties. In a letter dated March 7, 2014, the Indiana SHPO did not concur with the preliminary effects determination of "no effect" to the two Indiana aboveground historic properties and recommended a "no adverse effect" determination for these properties to better convey the potential for noise effects. Accordingly, FHWA revised the effects finding to "no adverse effect" for the Cutler Farm and Kingsbury-Doak Farmhouse to account for the possibility of slight or minor indirect impacts and to address the Indiana SHPO's concerns. Following their review of the 800.11(e) document containing FHWA's final effects finding of "no adverse effect" to aboveground historic properties and the Section 106 PA, the Indiana SHPO concurred with FHWA's "no adverse effect" finding to

above-ground historic properties in Indiana in a letter dated April 25, 2014. Similarly, the Illinois SHPO had no further revisions or comments on FHWA's revised final effects finding to aboveground historic properties or the PA and stated their intention to sign the PA when finalized in a letter dated April 30, 2014. FHWA's final Section 106 effects findings are located in the 800.11(e) document found in Appendix K.

Although the project has been determined to have an "adverse effect" with respect to archaeological resources, there are no adverse effects to any above-ground historic properties are anticipated and no resolution of adverse effects is required for above-ground historic properties in the PA. However, throughout the Tier Two EIS and Section 106 analysis for each of the proposed alternatives, specific measures and proposed design guidelines to minimize and avoid physical and indirect impacts to above-ground historic properties were developed, including shifting or moving the alternatives within the Corridor to avoid impacting historic properties and introducing design options in the vicinity of Alternate Route 66. Further, re-vegetation of the selected alternative's footprint to minimize visual impacts to above-ground historic properties is proposed during design and construction.

Air Quality

None of the alternatives are predicted to cause or contribute to a violation of National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO) and the predicted values for all alternatives are less than the relevant particulate matter (PM) NAAQS at the appropriate receptors. Per the direction of the interagency group, including representatives from IDOT, INDOT, FHWA, USEPA, Illinois EPA, IDEM, NIRPC, and CMAP, a quantitative hot-spot analysis was prepared for the project following USEPA's "*Transportation Conformity Guidance for Quantitative Hot-Spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*" (November 2013). The analysis was performed for both the opening year (2018) and design year (2040) of the project, with the traffic conditions at each of the locations analyzed. The entire project was considered, including all major design features which could be expected to significantly impact concentrations. Since the project is located in an area designated as maintenance for the 1997 annual $PM_{2.5}$ NAAQS, but attainment for the 24-hour $PM_{2.5}$ NAAQS and 24-hour PM_{10} NAAQS, the quantitative PM hot-spot analysis was limited to comparing the project's impact to the 1997 annual $PM_{2.5}$ standard. When compared to the No-Action Alternative, the alternatives are predicted to decrease the regional pollutant burdens of PM_{10} and $PM_{2.5}$ by 0.3 percent to 1.9 percent. As the design values in the build alternative are less than or equal to the 1997 PM NAAQS at appropriate receptors, the project meets the $PM_{2.5}$ hot-spot conformity requirements. In addition, the project would increase regional pollutant burdens of hydrocarbons (HC), nitrogen oxides (NOx), and CO by 0.4 percent to 3.3 percent. The mobile air source toxics (MSATs) are predicted to be higher than those predicted under the No-Action Alternative. However the analysis estimates a large decrease in all MSAT emissions, regardless of alternative chosen (build or no build), as compared to existing conditions

Noise Impacts

The 2040 design year build noise levels with Alternative 1 ranged from 52 to 74 decibels (dB(A)). Using Alternative 1, with the IL-53 interchange Design Option 6, which was the design option found to result in the greatest number of receivers above the noise abatement criteria (NAC), the build noise levels are predicted to approach or exceed the FHWA NAC at 13 sites, with a substantial noise level increase (defined as an increase of 14 dB(A) or greater for sites in Illinois or 15 dB(A) or greater for sites in Indiana) projected at 16 sites. Both impact conditions (approaching or exceeding the NAC, and an increase of at least 14 or 15 dB(A), respectively) are expected to occur at 12 sites, resulting in a total of 41 impacts.

Design year build traffic noise levels with Alternative 2 range from 52 to 74 dB(A). Using Alternative 2, with the IL-53 interchange Design Option 6, the build noise levels are predicted to approach or exceed the NAC at 10 sites, with a substantial noise level increase (as defined in the paragraph above) projected at 16 sites. Both impact conditions (approaching/exceeding the NAC, and substantial noise increase) are expected to occur at 14 sites, resulting in a total of 40 impacts.

Design year build traffic noise levels with Alternative 3 range from 52 to 74 dB(A). Using Alternative 3, with the IL-53 interchange Design Option 6, the build noise levels are predicted to approach or exceed the NAC at nine sites, with a substantial noise level increase (as defined above) at 17 sites. Both impact conditions (approaching/exceeding the NAC, and substantial noise increase) are expected to occur at 18 sites, resulting in a total of 44 impacts.

All IL-53 design options result in two noise impacts.

Noise abatement analysis shows that noise barriers are not considered reasonable or feasible under IDOT and INDOT Noise Policies at any of the affected sites evaluated for Alternatives 1, 2, and 3.

Energy

All alternatives will result in a 3.7 percent increase in 2040 annual energy use over the No-Action Alternative.

Natural Resources Impacts

Agricultural land would be the most affected cover type impacted by the alternatives. Urbanized land is the second largest land cover type impacted. Due to the rural setting of the area, urbanized land is scattered throughout the Corridor.

Direct impacts to prairie sites between the CN Railway and IL-50 would occur. These impacts would occur from construction of the bridge over the CN Railway and IL-50 and placement of piers. Prairie sites may also receive indirect impacts in the form of shading effects from the bridge, and shading could lead to a change in the plant community, which would lower the natural area quality of this prairie. A portion of prairie remnant located between Mount Street and Morse Street would be directly

impacted by Alternatives 1, 2, and 3. Total impacts to noteworthy prairies include approximately 9.7 acres for Alternatives 1, 2, and 3, while there are no impacts to noteworthy prairies associated with the IL-53 design options. These impacts could be reduced as engineering plans are developed in more detail.

All alternatives would impact two forested areas greater than 20 acres and a large forested area along the east and west side of the Kankakee River in Illinois and four forested areas greater than 20 acres in Indiana. Total impacts to forest areas greater than 20 acres include approximately 51 acres for Alternative 1, 85 acres for Alternative 2, and 107 acres for Alternative 3. There are no impacts to forested areas associated with IL-53 design options.

Construction of the project would create conditions that may allow for the establishment of populations of invasive/noxious species of plants. These species presently occur in the Study Area. Invasive or noxious species can become established within the right-of-way during initial construction or afterwards due to maintenance practices.

Wildlife would be impacted by construction and operational activities that reduce habitat/cover types, fragment existing habitats, obstruct and eliminate wildlife travel corridors, or inhibit wildlife communication. The existing natural communities are currently fragmented by agricultural land as well as urban areas, roads, pipelines, electric transmission lines, and other development. Increased fragmentation of natural habitats from the proposed project would generally be detrimental to wildlife species, although some species benefit from the creation of additional habitat edges. The interruption of the existing habitat could benefit bird species that utilize edge habitats over interior bird species and will likely result in brood parasitism for those interior species, habitat avoidance, and increases in predation.

The Des Plaines State Conservation Area/Des Plaines State Fish and Wildlife Area (DPSCA/DPSFWA) site has the highest potential for high quality habitat areas within the Corridor. Loss of habitat within the Corridor could also impact wildlife species by severing travel routes and increasing the potential for collisions with vehicles. The interruption of the existing habitat could benefit species that utilize edge habitats.

In the Tier One FEIS/ROD, FHWA, IDOT, and INDOT committed to further study of the potential noise effects of the Illiana Corridor on grassland bird habitat proximate to the Corridor. On April 16, 2013, the federal regulatory agencies (USFWS, USEPA, USACE, Illinois DNR, and Midewin National Tallgrass Prairie) concurred with using the Forman *et al.* (2002) study methodology for assessing noise effects to certain grassland bird species (Appendix Z). The Forman *et al.* (2002) study quantifies the distance of roadway avoidance by certain avian species for differing average daily traffic (ADT) totals. The Forman *et al.* (2002) study is the most applicable to the Illiana Corridor due to the following:

- The Forman *et al.* (2002) study was conducted within the same habitat type found at Midewin National Tallgrass Prairie (grassland); and
- Avian species studied by Forman *et al.* (2002) are known to occur at Midewin National Tallgrass Prairie (bobolink and eastern meadowlark).

Forman *et al.* (2002) identified avian impact distances based on ranges of ADT. The impact distances for each range of ADT are summarized as follows:

- 8,000 to 15,000 ADT – Avian breeding is reduced or eliminated for 400 meters (1,312 feet)
- 15,000 to 30,000 ADT – Avian species are not present or regularly breeding for 700 meters (2,297 feet)
- >30,000 ADT – Avian presence and breeding are reduced for 1,200 meters (3,937 feet)

The distances from alternatives were used to determine the potential indirect noise impact to avian species within the Des Plaines Conservation Area, Midewin National Tallgrass Prairie, existing passerine and grassland bird habitat (wholly located within Midewin National Tallgrass Prairie), and upland sandpiper habitat (wholly located within existing passerine and grassland bird habitat). In addition, the number of known loggerhead shrike nests potentially impacted within the Midewin National Tallgrass Prairie was determined.

Utilizing Forman *et al.* (2002) distance and ADT ranges, it was determined that all three alternatives would have potential indirect noise impacts to 149 acres of the Midewin National Tallgrass Prairie. Of the 149 acres impacted, 73.15 acres are existing passerine and grassland bird habitat (including 62 acres of upland sandpiper [*Bartramia longicauda*, state, endangered] habitat), 51.05 are proposed as future grassland bird habitat, and 24.8 acres are for proposed wetland restoration. There are also two known loggerhead shrike (*Lanius ludovicianus*, state, threatened) nests in the impact area. In addition, each alternative would have potential indirect noise impacts to the DPCA, with Alternative 1 affecting 330 acres, Alternative2 affecting 323 acres, and Alternative 3 affecting 305 acres.) The potential habitat patches within the DPCA are currently agricultural land and the DPCA currently has no plans to restore this or adjacent areas to grassland bird habitat. Therefore, it is anticipated that grassland birds are not using these areas and that there would be no impacts to grassland birds within the DPCA.

Alternatives 1, 2, and 3 would directly impact the sheepnose mussel (*Plethobasus cyphyus,* federal, endangered), due to the proposed bridge over the Kankakee River. The Eryngium stem borer moth (*Papaipema eryngii,* federal, candidate) would be impacted by all three alternatives as a result of impacts to native prairies and stem borer moth host species, the rattlesnake master. In addition, the project would impact the northern long-eared bat *(Myotis septentrionalis*, federal, proposed endangered). Consultation with the USFWS under Section 7 of the Endangered Species Act (ESA) [16 U.S.C. 1531 et seq.] is in process. Through the Section 7 consultation with the USFWS, federal threatened and endangered species potentially affected by the proposed action were identified. As the proposed project is a major construction activity (50 CFR 402.02) a Biological Assessment (BA) was prepared (see Appendix N). The purpose of the BA is to evaluate the potential effects of the action on listed and proposed species and designated and proposed critical habitat, and to determine whether any such species or habitats are likely to be adversely affected by the action. As the project is likely to adversely affect a federally endangered species (sheepnose mussel, Eryngium stem borer moth [candidate], and the northern

long-eared bat [proposed]), FHWA requested to initiate formal consultation under Section 7 of the ESA with USFWS on February 17, 2014. The USFWS subsequently initiated formal consultation on May 14, 2014.

In Illinois, the project would potentially impact the state-listed Blanding's turtle (*Emydoidea blandingii*, state, endangered), ornate box turtle (*Terrapene ornata*, state, threatened), black sandshell mussel (*Ligumia recta*, state, threatened), purple wartyback (*Cyclonaias tuberculata*, state, threatened), and slippershell mussel (*Alasmidonta viridis*, state, threatened). Fish species potentially impacted are the river redhorse, pallid shiner, and western sand darter. In Indiana, the project has the potential to impact the black-crowned night heron (*Nycticorax nycticorax*, state, endangered), Virginia rail (*Rallus limicola*, state, endangered), American badger (*Taxidea taxus*, state, species of special concern), eastern red bat (*Lasiurus borealis*, state, species of special concern), northern long-eared bat (federal, proposed endangered), green twayblade orchid *(Liparis loeselii*, state, Watch List species), blue-spotted salamander (*Ambystoma laterale*, state, species of special concern), northern leopard frog (*Lithobates pipiens*, state, species of special concern), and great egret (*Ardea alba*, state, species of special concern).

Water Resources/Quality

Surface water impacts would be associated with both construction and operation of the proposed project.

Impact to rivers, creeks, and tributaries varies by alternative with Alternative 2 (29,120) impacting the most linear feet and Alternative 1 (25,716) having the least linear feet of impact. Measured in acres, Alternative 3 (6.02 acres) would impact the most rivers, creeks, and tributaries with Alternative 1 (5.81 acres) the least. Impacts could result from construction and the placement of structures (e.g., culverts) or fill material in the water body. Design Option 4 would result in the greatest stream impact totals among the IL-53 interchange design options (3.00 acres; 7,045 linear feet). Design Options 2 and 6 would result in the lowest stream impact totals (2.22 acres; 5,675 linear feet).

All three alternatives would require in-stream construction for the proposed crossing (i.e., bridge) at the Kankakee River (Site W35). The impacts to the river channel would be similar for the three alternatives. Based on preliminary engineering, it is anticipated that Alternatives 1 and 3 would impact 10 small lakes/ponds and Alternative 2 would impact six. Alternative 2 would impact the least lake/pond acreage with 1.34 acres while Alternative 1 would impact 2.96 acres and Alternative 3 would impact 3.05 acres. The majority of the lake/pond impacts would take place in Indiana. There are no lake/pond impacts associated with the IL-53 design options.

The alternatives would impact approximately 933 - 1,113 acres of medium and highly erodible soils with the greatest impacts associated with Alternative 3 and the lowest impacts associated with Alternative 1. Impacts to highly erodible soils vary by about 6.5 acres between the design options. Design Option 5 would have the greatest impact (35.20 acres), while Design Options 4 and 6 would have the least impact (approximately 28.75 acres). In accordance with federal (e.g., USACE and USEPA) and state (e.g., IEPA and

IDEM) requirements, soil erosion and sediment control practices will be used throughout the construction process to minimize potential impacts to receiving waters.

Based on the results of the pollutant loading analyses (with the implementation of proposed post-construction BMPs), the estimated stormwater pollutant concentrations for copper, lead, and zinc would achieve the applicable water quality standards in Illinois and Indiana streams for these pollutants. The alternatives are expected to be similar with respect to pollutant loading for total suspended solids and chlorides. However, Alternative 1 would cause one more chloride General Use Water Quality Standard exceedance compared to Alternatives 2 and 3. This was primarily due to a proposed increase in impervious surface at drainage crossings with small drainage areas (less than one square mile).

Alternative 3 (39) contains the most wells within its footprint, followed by Alternative 2 (38) and Alternative 1 (35). Design Options 3, 4, 5 and 6 have no wells within their footprint while Design Option 2 has one well within the footprint.

Floodplain and Floodway Impacts

All alternatives would add 0.2 acre-feet of floodway fill volume. Floodplain fill volume varies from 247.5 acre-feet for Alternative 1, to 253.3 acre-feet for Alternative 2, to 250.8 acre-feet for Alternative 3. All alternatives and design options avoid the large floodplain associated with the Kankakee River located south of the Corridor. Design Option 4 would result in the greatest amount of floodplain impacts and Design Option 6 would have the least. For the Design Options, there is a range from 68.4 to 98.7 acre-feet of floodplain fill volume. Design Option 4 has the greatest amount of floodplain fill, while Design Option 6 has the least.

By satisfying Executive Order 11988 and state stormwater requirements, no significant floodplain encroachments are proposed within the alternative footprints. Significant floodplain encroachments are defined in the BDE Manual (IDOT, 2010a) and Indiana Procedural Manual (INDOT, 2008a). There would be no significant impact on natural and beneficial floodplain values, no significant change in flood risks, and no significant increase in potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that the encroachments would not be significant.

Wetland Impacts

Wetland impacts would vary by alternative with Alternative1 having the least impact in number of wetlands (115) and area (64.20 acres). Alternative 2 would impact 126 wetlands for 76.80 acres while Alternative 2 would impact 134 wetlands for 72.41 acres. Impacts to High Quality Aquatic Resources vary in similar respects, with Alternative 1 impacting 26.26 acres (at 18 sites); Alternative 3 impacting 28.57 acres (at 20 sites); and Alternative 2 impacting the most with 38.17 acres (at 19 sites). Four wetland sites would be impacted by each of the IL-53 interchange design options for a total of 7.14 acres impact.

Specific wetlands may be affected by indirect impacts where the footprint of the alternative reduces or limits hydrological inputs or the remnant wetland acreage provides little or no functional value.

Special Waste/Hazardous Waste Impacts

Sites identified during regulatory database reviews as well as those identified through visual inspections (ISGS, 2013; GSG, 2013) were screened to identify recognized environmental conditions (RECs) that could have an adverse impact on the build alternatives and IL-53 design options. Results of the analysis identified 19 RECs that may pose high risk to and equally affect all the alternatives. None of the sites is considered to disproportionately affect any of the alternatives or design options based on their proximity to the construction footprints.

Contaminated soils or groundwater could potentially be encountered during demolition, construction, or earthwork, resulting in the release of contamination into the air, soil, or water. The possibility exists that hazardous building materials, including asbestos and lead-based paint (LBP), may occur in buildings and structures that may be acquired and require demolition. Exposure to environmental contamination can adversely impact construction workers and public safety and lead to diminished quality of natural resources. Encountering such contamination without prior knowledge can also result in increased project costs and project delays to properly manage the resulting wastes.

Mineral and Geologic Resources

Each alternative would cross limestone, sand, and gravel resources to varying amounts. Alternative 1 would cross 43.5 linear miles of limestone and 5.9 linear miles of sand and gravel resources. Alternative 2 would cross 43.1 linear miles of limestone and 6.0 linear miles of sand and gravel resources. Alternative 3 would cross 42.4 linear miles of limestone and 6.5 linear miles of sand and gravel resources. Limestone within the IL-53 design option footprints ranges from 74.7 acres crossed for Design Option 4 to 101.1 acres crossed for Design Option 5. The amount of sand and gravel resources crossed by the design option footprints ranges from 203.1 acres for Design Options 5 and 6 to 235.7 acres for Design Option 4.

The presence of sand and gravel resources is limited to the Kankakee River Valley along the western end of the Study Area and the southern portion of the Study Area in Indiana. While there is no active or inactive sand and gravel mining in these areas, future access to these resources within the limits of the alternative footprints would be eliminated with construction of the roadway. However, even if future extraction of the resource were to occur in the vicinity of a new roadway, the narrow footprint decreases the likelihood that conflict would occur between future resource development and the roadway.

Limestone resources occur as the uppermost bedrock unit within the alternative footprints. These resources are present throughout approximately 90 percent of each alternative footprint. Despite its prevalence in the alternative footprints, as well as the

broader Study Area, only limited mining of this resource has occurred. There are no inactive or active limestone/dolomite quarries within the Corridor and future exploitation of these resources would generally be limited to those localized areas along the Corridor where the bedrock is shallow.

There are no coal, natural gas, or oil resources within the Study Area or the Corridor.

Each alternative, including the design options, may be expected to encounter expansive and weak/compressible soils. Additionally, the potential exists that unmapped areas of weak and compressible soils exist within the alternative and design option footprints. Extensive areas of peat and muck are known to exist in the Study Area, particularly throughout the Indiana portion of the Study Area, although the corridor avoids larger known deposits.

There are no known karst features in any of the alternative or design option footprints, nor are the uppermost bedrock units throughout each footprint considered susceptible to karst formation. Therefore, none of the alternatives or design options is considered at risk to sinkholes or similar bedrock dissolution hazards. None of the alternatives, including the design options, would substantially contribute to the need for new aggregate resource development.

Visual Resources

With any of the alternatives, visual impacts would be experienced by both residents and users. For the alternatives, most of the adverse visual impacts for residents would occur in the Grand Prairie regional landscape because of the more open terrain, and the more visually prominent changes in elevation at the cross roads with the new overpass structures.

Visual impacts are likely to be most apparent at the interchanges and at cross roads, as the new infrastructure would be a change to the existing conditions. Views for visitors and residents who travel the corridor may be enhanced, as areas that were once distant may be now more closely observed. The overpasses crossing existing railroads, roads and some waterways may also improve views for travelers along each of the alternatives, as they would likely be high enough to improve sight lines across the relatively flat terrain.

In areas with scattered farmsteads and rural residences, the alternatives would create a visually apparent change in the setting in the immediate vicinity of the proposed project for nearby residents, while contrasting more substantially from the rural local roads that currently provide access through much of the area.

Indirect and Cumulative Impacts

The indirect impacts of the Illiana Corridor would be associated with induced land development resulting from improved accessibility and mobility provided by the project. Cumulative impacts could result from the project, induced development, and other reasonably foreseeable development that would occur with or without the project.

The Study Area forecasted population and employment growth with the No-Action Alternative is substantial and would convert a great deal of farmland into urban development. Population and employment change projections for the year 2040 indicate that with implementation of an alternative, Will, Kankakee and Lake counties would grow by an additional 22,680 people (1 percent increase over the No-Action Alternative) and 14,210 jobs (1.3 percent increase over the No-Action Alternative), respectively. The above forecasts for population and employment were derived by interpolating and/or extrapolating the build socio-economic forecasts for the Northern and Southern Alternatives (identified in the *Historic and Forecasted Growth of Employment and Population – Market Driven Forecasts 2010-2040"* (The al Chalabi Group, Ltd. (ACG), 2011), see Appendix B). These latter forecasts were generated reflecting the changes in accessibility resulting from building along these alternatives and using the same methodology as that used for similar EIS studies.

The projected population and employment growth in the Study Area is expected to shift towards the proposed project's interchanges with US and state highways. Project-induced development is likely at and near these interchanges because of the increased accessibility to undeveloped land areas near them. Approximately 8,300 people and 5,000 jobs would be induced by the proposed project and would be located within five miles of the proposed project interchanges. It is anticipated that most people would be accommodated in new residential developments or infill housing within municipalities with utilities and not scattered in unincorporated parts of each affected county due to planning policies, current zoning, and the lack of utilities. The majority of jobs would be located within five miles of the IL-53 interchange amidst an already developing area near Wilmington, Illinois. Other interchanges with significant induced employment would be at IL-50 and IL-1. To accommodate residential and commercial/industrial development, the projected population and employment growth in the three counties would require an additional 2,885 acres of land for residential development and 2,368 acres for commercial/industrial development with implementation of a build alternative as compared with the No-Action Alternative.

Within a five-mile radius of the project interchanges in portions of Will, Kankakee, and Lake counties, there are approximately 238,380 acres of zoned agriculture land, 18,660 acres of forest and approximately 11,210 acres of wetlands. Of the three most prevalent resources (farmland, forest, and wetlands) within five miles of each interchange (i.e., the indirect impact area), farmland is the most likely resource to be impacted.

The cumulative effect on resources of past, present and reasonably foreseeable future actions in the three county Study Area has been and will be substantial, particularly in northern Will County and northern Lake County which are largely urbanized. The southern half of these two counties and northern Kankakee County are largely undeveloped but are the sites of major proposed developments including the South Suburban Airport (SSA), several intermodal centers and the Illiana Corridor. The cumulative impacts of these actions in the southern half of the Study Area are expected to be relatively greater than in the northern half due its more widespread rural character.

The Illiana Corridor would have a one percent or less additional indirect and cumulative impact on the main resource of the Study Area (i.e., farmland, in comparison with the much greater amount of farmland converted with the No-Action Alternative). The Illiana Corridor would be expected to have a moderate cumulative impact on areas of environmental concern such as forest, streams, and wetlands. This is largely because of the spread out development pattern that is likely to occur over time. However, applicable local comprehensive plans which state the goal of infill development and concentrating development within municipal boundaries would tend to keep future development out of areas of environmental concern.

Potential Mitigation and Minimization Measures

The following section provides a summary of potential minimization and mitigation measures that have been identified by FHWA, IDOT, INDOT, and resource agencies (including USEPA, USACE, USFWS, IDEM, Illinois DNR and Indiana DNR) as appropriate strategies to avoid or offset likely impacts associated with the proposed project. Mitigation and abatement measures will be completed in accordance with the policies and procedures of FHWA, IDOT, and INDOT and the requirements of appropriate federal and state resource agencies.

Mitigation measures are designed to alleviate the loss of resources generally through replacement of or compensation for the resources displaced. Mitigation is also used to manage the short and long-term impacts of the proposed project by minimizing the severity of the impact. Section 3.23 presents the Mitigation Commitment Summary, which provides a more detailed summary of the timing and responsible parties for the project commitments.

IDOT and INDOT will strive to integrate CSS during the design, construction, operation, and maintenance of the new facility. In addition, the project will identify and strive to incorporate sustainable practices into project design.

As part of the alternatives development process, several measures to minimize impacts have been incorporated and will continue to be examined through final design. Examples of minimization measures include:

- To avoid and/or minimize potential adverse effects to above-ground historic properties, revisions were made to shift the alternatives away from the John P. Lynott Summer House to minimize visual impacts to the historic property. At IL-53, various design options were developed to avoid direct physical impacts to Alternate Route 66.
- Shifting the alignment slightly to the northeast between 104th Avenue and Center Road to avoid the northeastern most corner of the Agricultural Conservation and Protection Area in Peotone Township.
- Consider alignment locations that follow or parallel existing parcel lines to reduce the number of farm severances (separation of a single farmland tract into two parcels).

- Based on site visits with federal and state resource and regulatory agencies, alternatives were developed to minimize and avoid resources, particularly large forested communities.
- Consideration of wildlife bridges, bridging riparian corridors, and/or the use of oversized culverts with natural bottoms to minimize impacts to wildlife resources.
- Design new and replacement stream crossings to maintain continuity of aquatic habitat and accommodate the passage of fish and other aquatic organisms and to cross streams and rivers in as perpendicular of a manner to active stream flow as possible.
- To avoid direct impacts to the northern long-eared bat and migratory birds, tree clearing restrictions are proposed that would only allow for tree clearing between October 15 and March 31. As identified in the Migratory Bird Treaty Act, the DOTs will use the October 15th start date for all tree clearing associated with the project.
- To avoid potential impacts to the state listed fish species, the sauger (the host fish species of the sheepnose mussel), and the sheepnose mussel, a date restriction will be established from March 15 to July 15, in which in-stream work within the Kankakee River will not occur.
- It is anticipated that temporary causeways will be utilized to construct the bridge over the Kankakee River. The total area of temporary direct impact related to the causeway is estimated at two acres of river bottom. No more than one-half of the river would be closed at any one time. Once construction is completed, the causeways will be removed. Final construction methods and impacts will be determined during Section 401/404 Clean Water Act (CWA) permitting in cooperation with state and federal regulatory agencies.

Some of the potential mitigation strategies identified for this Tier Two FEIS are listed below. The mitigation strategies will be further developed and incorporated through continued coordination with resource agencies and through the permitting process.

- Prior to the start of construction activities, a traffic management plan will be prepared and implemented to ensure reasonable access for cars, trucks, freight rail traffic, and transit vehicles to residences, businesses, public facilities, community/emergency services, and local roads during construction.
- Re-establish field access points where practical, consult with landowners prior to construction to locate existing field tiles, maintain existing surface and subsurface drainage, re-establish field drainage for adjacent properties following construction, and consider use acquired uneconomical remnants and landlocked parcels for water quality best management practice (BMP) sites or other mitigation requirements.
- Follow normal IDOT procedures with regards to idling specifications that limit the idling of construction equipment, thereby conserving energy and reducing emissions of greenhouse gases. INDOT will also encourage limits to idling equipment through incentives included in the construction plans. Furthermore, staging areas will be located as close as possible to work sites in order to minimize the distance that

construction equipment must travel, thereby conserving energy and reducing emissions of greenhouse gases.

- In Illinois, forest mitigation has been coordinated with the USFWS, Illinois DNR, and other local stakeholders including Midewin National Tallgrass Prairie, and FPDWC. Forest mitigation will occur on a 1:1 ratio for acres of forest impacted. The proposed mitigation is to develop forest communities on lands adjacent to existing local preserves not currently owned by any resource agencies, where feasible. In Indiana, INDOT is working with USFWS, Indiana DNR, and other local stakeholders including Lake County Parks to finalize the forest mitigation plan. Required forest mitigation will be designed to provide suitable habitat for other wildlife species including the northern long-eared bat. The forest mitigation will include both upland and wetland forests. Native forest trees will not be replaced with known invasive species such as buckthorn, honeysuckle, and box elder.
- Noteworthy prairie mitigation in Illinois will follow a hierarchy, with the Midewin National Tallgrass Prairie as the preferred mitigation site. IDOT will work with Midewin National Tallgrass Prairie to develop a mitigation plan. If mitigation cannot be accomplished at the Midewin National Tallgrass Prairie, IDOT will coordinate with FPDWC and other project stakeholders on a suitable mitigation plan for upland prairie impacts. In Indiana, noteworthy prairie remnants will be mitigated in cooperation with Lake County Parks.
- IDOT will provide $2.5 million for grassland bird habitat mitigation, in the form of acquisition and/or restoration of land suitable for grassland bird habitat within the vicinity of the project. IDOT will identify and evaluate appropriate properties for acquisition and/or restoration, and will continue to coordinate with Midewin National Tallgrass Prairie, USFWS, FPDWC, Illinois DNR, and other entities as appropriate.
- Through state and federal requirements, mitigation will occur for impacts for forest, wetland, and prairie habitats. This mitigation is likely to benefit migratory birds that use these habitats.
- The mitigation strategy for the sheepnose mussel will be to relocate all individuals of the mussel within areas of construction to suitable habitat upstream of the proposed construction activities. To minimize the take of these mussels, the surveys and relocation activities will occur immediately prior to actual construction activities. The mitigation for the state listed species will coincide with the mitigation plan for the federally endangered sheepnose mussel. All native mussels, including the state listed mussels, will be collected prior to construction and relocated to suitable habitat upstream of the project.
- IDOT has committed to the use of directional lighting near the interchange closest to Midewin National Tallgrass Prairie. The lighting will be limited to the minimum intensity necessary to provide night visibility, and consideration of lights that are less attractive to insects (lights with spectrum frequencies at the yellow-red end of the spectrum rather than the blue). IDOT will limit lighting to interchange areas

only and not on the general mainline roadway. INDOT will also only use lighting at interchanges and toll collection areas.

- Mitigation for impacts to the northern long-eared bat will include restoration of forest habitat as previously discussed. Mitigation may also include replacing potential roost trees for the bat. Forest restoration will be developed to accommodate potential maternity roost colonies.
- Mitigation for impacts to the Eryngium stem borer moth (also known as the Rattlesnake-master borer moth) includes the restoration of their habitat at Midewin National Tallgrass Prairie. The mitigation includes translocation of prairie remnants that harbor the stem borer in the larval stage and the transplantation of prairie including rattlesnake master (*Eryngium yuccifolium*) host plants to suitable habitat at Midewin National Tallgrass Prairie.
- INDOT will contact the Indiana DNR to discuss potential "take" issues concerning habitat for the black-crowned night heron, Virginia rail, American badger, Franklin's ground squirrel, eastern red bat, northern long-eared bat, green twayblade orchid (State watch list), blue-spotted salamander, northern leopard frog, and great egret, and if necessary, a plan will be prepared regarding any precautions to be taken during construction and mitigation for loss of habitat.
- Potential locations for wildlife crossings are identified in Section 3.8.2 and in Appendix Q. As part of the Section 4(f) evaluation, IDOT and INDOT have committed to include a wildlife crossing at the Wauponsee Glacial Trail. The number and specific locations for additional wildlife crossings will be determined during detailed design. IDOT and INDOT will be responsible for monitoring and maintaining bridges and the culvert structures that will serve for wildlife passage.
- Mitigation for unavoidable permanent impacts to lakes and ponds will be provided at a minimum 1:1 replacement ratio.
- FHWA, IDOT, and INDOT have made the commitment to capture the 1-inch rainfall event with no discharge outside of the Illiana Corridor right-of-way, but will strive to meet the 1.25-inch event as a project goal. This will be further evaluated during the Section 401/404 CWA permitting process. Rain events at or below the water quality volume would be captured on site and infiltrated, evaporated, or evapotranspirated.
- To minimize potential negative impacts to water quality, water wells that are present within the corridor will be properly abandoned.
- Applicable Will County, Illinois ordinances for potential compensatory storage will be considered, as practicable and feasible. INDOT is not considering providing compensatory storage for the Illiana Corridor in the Indiana portion of the project. Compensatory storage volume mitigation will be an excavated, hydrologically and hydraulically equivalent volume of storage created to offset the loss of existing flood storage, and will be excavated adjacent to the floodplain fill or shown by a hydraulic analysis to be an equivalent compensatory storage location.

- The Wauponsee Glacial Trail will be relocated approximately 375 feet east and elevated over the new roadway, and a wildlife undercrossing installed at the location of the existing trail.

As part of the continuing project development, numerous activities will be performed to further refine the Preferred Alternative and develop any necessary mitigation.

- Coordination will occur with IDOT and INDOT along with input from regulatory agencies to determine preferred mitigation methods for impacts to wildlife corridors.
- Coordination will occur with appropriate state or federal regulatory agencies to determine appropriate measures to avoid or minimize harm to known viable mussel populations or listed threatened or endangered aquatic species.
- Preliminary site investigations will be conducted during final design if the proposed improvements require excavation adjacent to a property identified with a REC or on a property to be used as a permanent easement with an identified REC. If necessary, specific mitigation measures will be developed following completion of the Preliminary Site Investigation.
- Coordination will occur with the FPDWC regarding the impact of relocating the Wauponsee Glacial Trail and ways to minimize harm to the trail through design and other mitigation measures.
- Geotechnical investigations will be conducted to further assess geological conditions are currently underway and will be used to further refine the construction mitigation techniques used in poor soil conditions.
- Various design elements, including the use of context sensitive solutions such as landscape buffers, stormwater quality facilities, wildlife passage, and corridor enhancements to minimize the visual impact of the project, will be analyzed and implemented to the extent feasible.
- To protect stream corridors, riparian buffers will be incorporated into the design. To the extent practical and feasible, a 100 foot minimum buffer width will be considered adjacent to high quality aquatic resources and/or other locations as determined during Section 401/404 CWA permitting.

In addition to those mitigation measures developed for the project, there are numerous actions required by law designed to mitigate project related impacts, including but not limited to:

- Provide relocation assistance and just compensation to any residence or business displaced in accordance with applicable federal and state regulations, and agency guidelines.
- Comply with the implementing measures of the Executive Order 13112 of February 3, 1999 – Invasive Species to control and minimize the spread of invasive species.

- Consult with the USFWS under Section 7 of the Endangered Species Act (ESA) [16 U.S.C. 1531 et seq.] to develop mitigation measures for those threatened and endangered species that are potentially affected by the proposed action.
- Develop a conservation plan as part of an Incidental Take Authorization with the Illinois DNR for the species that would be impacted including the Eryngium stem borer moth, Blanding's turtle, ornate box turtle, upland sandpiper, loggerhead shrike, black sandshell mussel, purple wartyback mussel, slippershell mussel, and sheepnose mussel, and fish species river redhorse, pallid shiner, and western sand darter.
- Mitigate for permanent fill placed in jurisdictional waters of the US in accordance with the Compensatory Mitigation Rule requirements at 33 Code of Federal Regulations (CFR) Part 332. Mitigation options include: 1) purchasing credits in an USACE approved mitigation bank; and 2) permittee-responsible mitigation (i.e., restoration, establishment/creation, enhancement activities, or in-kind preservation of an existing aquatic site).
- Implement best management practices (BMPs), as required by permits and approvals, to protect water resources during construction, operation, and maintenance phase of the proposed project.
- A Storm Water Pollution Prevention Plan (SWPPP) will be prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) requirements, that identifies soil erosion and sediment control practices to be used throughout the construction process with appropriate practices implemented before any clearing, grading, excavating, or fill activities.
- All required permits and approvals, Section 404 of the CWA, Section 401 of the CWA water quality certification (WQC), Section 10 of the River and Harbors Act, state floodplain/floodway construction permits, and the Indiana Lowering of Ten Acre Lakes Act will be obtained prior to in-stream construction.

S.5 Section 4(f)

Section 4(f) properties include publicly owned land used for parks, recreation, and wildlife and waterfowl refuges, and public and private historic resources that are listed in or eligible for inclusion in the NRHP as well as archaeological sites that are listed in or eligible for inclusion in the NRHP and warrant preservation in place. Alternatives 1, 2, and 3 would each use one recreational facility, the Wauponsee Glacial Trail. The FHWA made a proposed *de minimis* impact determination for this use since the project will not adversely affect the long-term use, function, or development of the Wauponsee Glacial Trail. Based on public comments and the Forest Preserve District of Will County's written concurrence, the project will not adversely affect the activities, features, and attributes that qualify the trail for protection under Section 4(f).

There will be no temporary use or constructive use of adjacent Section 4(f) properties by any alternative. Alternatives 1, 2, and 3 result in the same use of one Section 4(f)

property; therefore, there are no distinguishing differences between the alternatives with respect to potential uses of Section 4(f) resources.

All three alternatives would cross the Wauponsee Glacial Trail on the north side of Symerton, Illinois. Since all three alternatives have the same footprint in this location, they will all result in an identical use of the trail. The Wauponsee Glacial Trail crossing by Alternatives 1, 2, and 3 is unavoidable due to its length through the Study Area and general southwest-northeast orientation. The Wauponsee Glacial Trail would be relocated approximately 375 feet east and elevated over any of the three alternatives. None of the interchange design options related to IL-53 would result in a use of the trail. FHWA made a proposed *de minimis* impact determination for the Wauponsee Glacial Trail since the project will not adversely affect the features, attributes, or activities qualifying the resource for protection under Section 4(f). FHWA reached this decision in consultation with the FPDWC (the official with jurisdiction) which concurred with the *de minimis* impact determination for the Wauponsee Glacial Trail and the measures identified to minimize harm to this resource (April 21, 2014). Notice and an opportunity to comment on this proposed determination were provided through publication of the Tier Two DEIS. After considering all comments received from the public, and with receipt of the FPDWC written concurrence with FHWA's proposed *de minimis* impact determination, this Tier Two FEIS represents FHWA's *de minimis* impact determination for the Wauponsee Glacial Trail.

S.6 Other Proposed Actions

Additional proposed roadway improvements have been identified in the current financially constrained metropolitan transportation plans (2040) of Chicago MPO, NIRPC, and KATS. These committed highway improvement projects in the Study Area were not in place as of the study's base traffic year 2010, but were assumed in the future 2040 highway network as shown in Table S-4.

As shown in Table S-4, the widening of I-65 (one additional travel lane in each direction) from US 30 to SR 2 is included as a committed transportation project. The widening of I-65 between US 30 and US 231 was amended into NIRPC's fiscally constrained long range transportation plan at the December 12, 2013, NIRPC Full Commission meeting, and the widening of I-65 from US 231 to SR 2 was amended into NIRPC's fiscally constrained metropolitan transportation plan at the April 17, 2014, NIRPC Full Commission meeting. These additional lanes are not projected to increase traffic volume on I-65 above what has been analyzed in this FEIS (less than two percent additional vehicles in the design year). This I-65 widening project has independent utility, is not considered part of the Illiana Corridor project, and is subject to a separate environmental review process under NEPA. Nevertheless, INDOT has elected to finance its portion of the Illiana Corridor project and the I-65 widening project together through a public private partnership (P3) procurement process in order to take advantage of efficiencies in construction cost and financing and for project coordination purposes.

Table S-4. 2040 No-Action Alternative Projects In or Near the Study Area

Route	Description	Location
Will County, Illinois		
I-80	Add lanes	From US 30 in New Lenox to Ridge Road in Minooka (I). Includes I-55 interchange. Phase I engineering is ongoing.
IL-394	Upgrade to Limited Access	From IL-1 in Crete to Sauk Trail in Sauk Village (I)
I-57	New Interchange	At Stuenkel Road in University Park (M)
I-57	New Interchange and Connector Road	At SSA in Monee (I)
Baseline Road	New Road	From Arsenal Rd. to Schweitzer Road in Elwood (I)
I-55	Add Lanes	From IL-113 to I-80 (I). Includes interchange improvements to IL-129 and Lorenzo Road that are included in the I-55 Wilmington study.
Kankakee County, Illinois		
I-57	New Interchange at 6000 N Road	Bourbonnais (M)
US 45/52	Add Lanes	From Kathy Drive in Bourbonnais to Manteno Road in Manteno (I)
Lake County, Indiana		
I-65	Add Lanes	US 30 to SR 2 (N)
Mississippi Street	New Road	from US 30 to 61st Ave. in Merrillville (N)
101st Avenue	Add Lanes	Broadway (SR 53) to Mississippi Street; Merrillville (N)

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

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

S.7 Public Involvement Process

In order to facilitate the lead agencies' interaction with other agencies and the public, a coordination plan was developed. For the Illiana Corridor, coordination with the resource agencies during Tier Two consists of four main elements:

1) The scoping process;
2) Building upon GIS data compiled during Tier One studies and performing detailed field studies and information gathering;
3) Monthly coordination meetings; and
4) Environmental resource and regulatory agency concurrence at three points: Statement of the Purpose and Need; Alternatives for Detailed Study; and Identification of the Environmental Footprint for the Preferred Alternative.

State and federal agency scoping formally began with the publication of the Notice of Intent (NOI) to prepare an EIS by the FHWA in the *Federal Register* on February 13, 2013. Following the publication of the NOI, a resource agency scoping meeting was held on February 22, 2013 as part of Illinois' NEPA/404 merger process to introduce Tier Two of the Illiana Corridor to federal and state resource agencies.

One-on-one stakeholder meetings have been held throughout the Tier Two EIS process with local officials, local businesses, and local facilities within the Study Area. Information from these meetings is available in Appendix Z.

The first Tier Two public meetings were held on April 16 and 18, 2013. The purposes of the public meetings were to discuss and gain feedback regarding the current status of more detailed planning and engineering information, including the design and status of alternatives for the roadway, interchange, overpass, underpass, and frontage road locations. The second round of Tier Two public meetings was held on June 17 and 18, 2013. These meetings provided more information regarding the roadway alignment refinements, interchange design and locations, overpass and underpass locations, and frontage road locations.

In addition to the scoping and stakeholder meetings, and public involvement efforts, numerous other means of communicating and coordinating with the public have been utilized. These include the following items: mailing list; newsletters/fact sheets; public website; and media outreach. These comments have been recorded in the project administrative record which is available to the public.

The Notice of Availability for the Tier Two DEIS was published in the Federal Register on January 24, 2014 effectively opening the public comment period on the Tier Two DEIS. Public hearings were held on February 18, 2014 and February 19, 2014 and public comments were invited on the Tier One DEIS. The public comment period closed on March 10, 2014. During the comment period, approximately 1,240 unique comments were received from federal and state agencies, local governments, individuals, and

organizations. In addition to comments submitted via oral public hearing testimony, in writing, or via the project website, approximately 2,474 form letters opposing the project were received during the Tier Two DEIS comment period. Those letters which provided substantive additional comments were included in the above count for unique comments.

Comments on the Tier Two DEIS can be found in Appendix CC and a comprehensive table containing responses to DEIS comments can be found in Appendix DD.

S.8 Identification of the Preferred Alternative

Based on a comparative evaluation of socioeconomic and environmental impacts, travel performance, and other factors including stakeholder and agency input, build Alternative 1 with Design Option 4 has been recommended as the Preferred Alternative. Alternative 1 is shown to have overall lower impacts than Alternatives 2 and 3, while each of these alternatives would provide overall the same level of travel performance. Alternative 1 accomplishes the project Purpose and Need, has lower overall impacts as compared to Alternatives 2 and 3, incorporates stakeholder input, and therefore is the preferred mainline alternative. Design Option 4 would provide the best balance between minimization of impacts and travel performance benefits and on this basis, Design Option 4 is the preferred IL-53 interchange design option, which together with mainline Alternative 1 is the Preferred Alternative. Section 5.0 summarizes the alternatives development and evaluation process that led to the identification of the Preferred Alternative.

Table S-5 below summarizes the impacts of Alternative 1 with Design Option 4, the Preferred Alternative.

S.9 Major Unresolved Issues with Other Agencies

The following items are in progress at the time this FEIS was released and will be completed prior to issuance of the ROD:

- Continue working with USFWS to conclude formal Section 7 consultation and issue the Biological Opinion
- Receive public comment on findings of the updated Air Quality Technical Report

S.10 Other Federal Actions Required for the Proposed Action

Additional federal actions occurring after the ROD is issued include a Clean Water Act Section 404 permit from USACE, and change in access to the Interstate approvals from FHWA.

Table S-5. Impact Summary of the Preferred Alternative

Resource	Preferred Alternative		
	Illinois	Indiana	Total
Social and Economic			
Non-agriculture Residential Relocations (number)	28	12	40
Agriculture Residential (Farmstead) Relocations (number)	22	7	29
Non-agricultural Commercial Relocations (number)	5	1	6
Non-agricultural Commercial Partial Impacts (number)	5	0	5
Agriculture			
Farm Parcels (number)	277	144	421
Farmland (acres)	2,483	682	3,165
Agri-business Relocations (number)	0	1	1
Agricultural Land Parcel Severances (number)	72	43	115
Landlocked Parcels (number)	76	49	125
Landlocked Parcels (acres)	1,049	229	1,278
Uneconomical Remnants (number)	17	11	28
Uneconomical Remnants (acres)	52	22	74
Adverse Travel (miles)	78	13	91
Prime Farmland (acres)	1,535	426	1,961
Statewide Important Farmland (acres)	197	14	211
Cultural Resources			
Potential Adverse Effects to Archaeological Resources (number)	34	3	37
Adverse Effects to Historic Above-Ground Resources (number)	0	0	0
Natural Resources			
Noteworthy Prairies (acres)	9.34	0.33	9.67
Forest Areas Greater than 20 Acres (acres)	8.9	42.0	50.9
Water Resources			
Rivers, Creeks & Tributaries (linear feet)	22,704	4,382	27,086
Rivers, Creeks & Tributaries (acres)	5.89	0.69	6.58
Lakes and Ponds (number)	1	9	10
Lakes and Ponds (acres)	0.03	2.93	2.96

Table S-5. Impact Summary of the Preferred Alternative (continued)

Resource	Preferred Alternative		
	Illinois	Indiana	Total
Groundwater Resources			
Wells Within Footprint (number)	21	14	35
Floodplains and Floodways			
Floodplain Fill Volume (acre-feet)	236.2	41.6	277.8
Floodway Fill Volume (acre-feet)	0.2	0.0	0.2
Floodplain Encroachments (number)	36	8	44
Floodway Encroachments (number)	1	6	7
Wetlands			
Wetland Area (acres)	31.21	32.99	64.20
High Quality Aquatic Resources (HQAR) Wetlands (acres)	5.58	20.68	26.26