

4.0 Identification of the Preferred Corridor

Corridors A3S2, B3 and B4 were identified to be carried forward for detailed evaluation in the Tier One Environmental Impact Statement (EIS) along with the No-Action Alternative, based on meeting the project Purpose and Need, minimization of socioeconomic and environmental impacts, and stakeholder input. This section presents the comparative evaluation of socioeconomic and environmental impacts, travel performance, and other factors including stakeholder and agency input of each of the three corridor alternatives. Based on this evaluation, this section identifies the preferred corridor to be advanced to the Tier Two National Environmental Policy Act (NEPA) studies.

4.1 Preferred Corridor

The build alternative corridors carried forward for analysis in the Tier One EIS included the following:

Corridor A3S2 – Corridor A3S2 is a 51.1 mile long east-west corridor that generally traverses the north portion of the Study Area in Illinois and transitions to the central portion of the Study Area in Indiana. Corridor A3S2 generally starts at I-55 near Channahon, Illinois, passes north of the South Suburban Airport, and connects with I-65 north of Lowell, Indiana. Corridor A3S2 includes eight potential interchanges at the following locations: I-55, US 52, US 45, I-57, IL-1, US 41, SR 55, and I-65. In addition, two design options are included for an additional interchange in the vicinity of IL-53.

Corridor B3 – Corridor B3 is a 46.8 mile long east-west corridor that generally traverses the central portion of the Study Area. Corridor B3 generally starts at I-55 north of Wilmington, Illinois, passes south of the South Suburban Airport, and connects with I-65 north of Lowell, Indiana. Corridor B3 includes seven potential interchanges at the following locations: I-55, US 45/52, I-57, IL-1, US 41, SR 55, and I-65. In addition, two design options are included for an additional interchange in the vicinity of IL-53.

Corridor B4 – Corridor B4 is a 48.8 mile long east-west corridor that generally traverses the central portion of the Study Area. Corridor B4 follows the same alignment as Corridor B3 through most of Illinois then transitions to the southern portion of the Study Area in Indiana. Corridor B4 includes potential interchanges at the following locations: I-55, US 45/52, I-57, IL-1, US 41, SR 55, and I-65. In addition, two design options are included for an additional interchange in the vicinity of IL-53.

After consideration of the analysis contained in this Tier One FEIS and considering the comments received during the comment period on the Draft EIS (DEIS), Corridor B3 is the preferred corridor. Selection of Corridor B3 as the preferred corridor is based on a comparative analysis of the three corridors based on key factors associated with socioeconomic and environmental impacts, travel performance, and stakeholder and agency input which is summarized below and discussed in more detail in Section 4.2. The key factors discussed in Section 4.2 are those factors that provide the best distinction

between the corridors. Corridor flexibility and constructability/cost were also considered as defined and discussed in Section 4.2.3.

Corridor B3 in comparison with Corridor A3S2: Corridor B3 has the least overall impacts to the natural and built environment, more stakeholder support, better constructability, and lower cost than Corridor A3S2. While both corridors perform similarly in meeting the Purpose and Need, Corridor B3 attracts slightly more traffic overall and offers better travel performance for a tolled scenario. Since Corridor B3 has better overall travel performance and compares favorably to Corridor A3S2 for the other factors noted above, Corridor B3 is the preferred corridor over Corridor A3S2.

Corridor B3 in comparison with Corridor B4: Corridor B3 performs better than Corridor B4 for every travel performance measure in both the tolled and non-tolled scenarios. In addition, as discussed in Section 4.2.3, the constructability of Corridor B4 will be more complex than Corridor B3 due to the extent of high construction risk soils (refer to Section 4.2.3.1), the number of stream crossings and the complexities associated with traversing the Kankakee River floodplain. As discussed in Section 4.2, Corridor B3 has the overall least impacts to the natural and built environment with comparable impacts to Corridor B4 relative to water resources. While Corridor B3 has higher wetland impacts than Corridor B4, Corridor B3 has lower overall impacts to streams (number and acres), impaired streams, wellhead protection zones, and floodplains. Since Corridor B3 has overall the least impacts to the natural and built environment, is comparable to Corridor B4 with respect to overall water resource impacts, and exhibits better travel performance, Corridor B3 is the preferred corridor over Corridor B4.

4.2 Build Alternative Comparison and Evaluation Factors

The key evaluation factors considered in the comparison of the build alternative corridors carried forward in the Tier One EIS were socioeconomic and environmental impacts, travel performance, and stakeholder and agency input (see Sections 2.0, 3.0, and 5.0). Corridor flexibility and constructability/cost were also considered. Results from this relative comparison of factors were used to identify the preferred Illiana Corridor.

4.2.1 Socioeconomic and Environmental Impacts

The potential socioeconomic and environmental impacts associated with a working alignment within Corridors A3S2, B3, and B4 were analyzed based on geographic information systems (GIS) data available for the Tier One study. The results of this analysis are discussed in Sections 2.0 and 3.0. As part of the Tier One alternatives development process, the 2,000 foot wide planning corridors were aligned to avoid or minimize impacts to the extent possible based on the information available in Tier One. The impacts were assessed based on the 400 foot wide working alignment within the center of each corridor, and expanded at proposed interchange locations. The 2,000 foot wide corridor provides flexibility in Tier Two to refine the working alignment as more stakeholder input and information is collected.

When assessing the overall environmental and socioeconomic impacts of each corridor, Corridor A3S2 stands out as having potential for more impacts than either Corridors B3 or B4. Corridor B3 has the least impacts overall and tends to have lower or middle of the range impacts for the majority of socioeconomic and environmental resources analyzed.

4.2.1.1 Socioeconomic Impacts

The potential socioeconomic impacts associated with a working alignment within Corridors A3S2, B3, and B4 were analyzed based on data available for the Tier One EIS. Of the three alternative corridors, Corridor A3S2 has the greatest socioeconomic impact. The location of Corridor A3S2 in the northern more developed areas is a key factor in the number of impacts. The results with respect to the distinguishing socioeconomic impacts between Corridors A3S2, B3, and B4 are presented in Table 4-1 and are discussed below.

Table 4-1. Distinguishing Socioeconomic Impacts

Impact Criterion ¹	Corridor		
	A3S2	B3	B4
Residential Displacements	81 - 83	22	12
Business Displacements	11	10	11
Intermodal Facilities (acres)	102.2	9.8	9.8
Business Parks (acres)	55.6	33.4	33.4
Population Growth (persons)	21,391	11,180	11,746
Employment Growth (jobs)	13,241	7,660	7,660
Land Area to Accommodate Growth (acres)	4,929	2,699	2,771
Economic Impacts (2010 \$ billions)			
Long Term (non-tolled)	4.86	4.67	4.24
Long Term (tolled)	3.43	3.87	3.54
Noise Sensitive Adjacent Land Use (acres)	2,775	1,751	883

¹ Results shown represent the range of impacts that would occur based on the interchange design concepts in the vicinity of IL-53.

- Residential Displacements** – Corridor A3S2 would cross more residential neighborhoods, resulting in a greater number of residential displacements (between 81 and 83 depending on the design concept at IL-53) as compared to Corridors B3 and B4 (22 and 12, respectively). An analysis of potential impacts outside the 400 foot working alignments (but within the 2,000 foot corridors) indicates that avoidance of residential displacements by shifting the working alignments is less feasible for Corridor A3S2 than for Corridors B3 or B4. Corridor B4 would have the lowest number of residential displacements and would cross one residential neighborhood, as does Corridor B3.

- **Intermodal Facility and Business Park Impacts** – Corridor A3S2 would have greater impacts to intermodal facilities and business parks at 102.2 acres and 55.6 acres respectively, as compared to Corridors B3 and B4 which would have 9.8 acres of impacts to intermodal facilities and 33.4 acres of impacts to business parks. Due to recent development of intermodal properties and the proximity of the Joliet Army Training Area (JATA) and other constraints, there is little opportunity to adjust Corridor A3S2 to further minimize impacts.
- **Population and Employment Growth** – Because all corridors improve accessibility and provide congestion relief, some projected regional population and employment growth is expected to shift to the Study Area and South Sub-Region, which in Illinois is a result of outward growth from points north, and in Indiana is a result of migration from Illinois (refer to Section 3.19.8.1). Corridor A3S2 would result in the largest 2040 population and employment increases (indirectly adding about 10,000 more people than either Corridors B3 or B4) and would require the most land to accommodate the growth. Corridors B3 and B4 have similar 2040 population and employment increases and would require less land than Corridor A3S2 to accommodate the growth. Corridor B3 would have less potential to shift population and employment from the older and more developed areas north of the Study Area than Corridor A3S2, and it would provide increased accessibility benefits for the South Sub-Region north of the Study Area similar to Corridor A3S2.
- **Economic Impacts** – Corridor A3S2 would generate larger short-term economic impact in terms of output, employment opportunities, and tax revenues which is associated with having the highest capital cost. In comparison to Corridor B3, Corridor A3S2 generates a slightly larger long-term economic impact with the non-tolled scenario (\$4.86 billion vs. \$4.67 billion) while Corridor B3 generates a slightly larger long-term economic impact with the tolled scenario (\$3.87 billion vs. \$3.43 billion). However, for the residential and commercial/industrial development induced by long-term economic impacts, Corridor A3S2 would require greater land (4,929 acres) to accommodate this development as compared to Corridor B3 (2,699 acres) and Corridor B4 (2,771 acres).
- **Noise** – Corridor A3S2 has a greater potential for noise impacts with 2,775 acres of adjacent sensitive land use, as compared to 1,751 acres for Corridor B3 and 883 acres for Corridor B4.

Based on the above information and the comparative analysis of Corridors A3S2, B3, and B4, Corridor A3S2 has overall greater socioeconomic impacts as compared to Corridors B3 and B4. Corridors B3 and B4 have lower socioeconomic impacts, with Corridor B3 having the largest long-term economic benefit with a tolled scenario, and requires the lowest amount of land to accommodate the residential and commercial/industrial development associated with this economic benefit.

4.2.1.2 Environmental Impacts

The potential environmental impacts associated with a working alignment within Corridors A3S2, B3, and B4 were also analyzed based on data available for the Tier One EIS. With respect to key environmental resources, Corridor B3 has the least impacts

overall with respect to environmental resources. The results with respect to the distinguishing environmental impacts between Corridors A3S2, B3, and B4 are presented in Table 4-2 and are discussed below.

Table 4-2. Distinguishing Environmental Impacts

Impact Criterion ¹	Corridor		
	A3S2	B3	B4
Wetlands (acres)	62.2	34.4 - 34.6	15.2 - 15.4
Stream Crossings (each)	26	33	53
Streams (acres)	20.6	11.4 - 12.0	15.5 - 16.1
High Quality Stream Crossings (each)	5	4	4
Impaired Stream Crossings (each)	10	9	31
Wells in Wellhead Protection Areas (each)	0	0	5 ²
Floodplain Fill (acre-feet)	54.1	55.0	127.8
Forested Communities > 20 acres (acres)	105.8	65.3	17.0
Des Plaines Fish and Wildlife Area (acres)	10.3	2.9	2.9
Farmland (acres)	2,454 - 2,484	2,666 - 2,725	2,768 - 2,827
Prime Farmland (acres)	1,788 - 1,813	1,567 - 1,607	1,432 - 1,472
Agricultural Diagonal Severances (parcels)	81	0	83

¹ Results shown represent the range of impacts that would occur based on the interchange design concepts in the vicinity of IL-53.

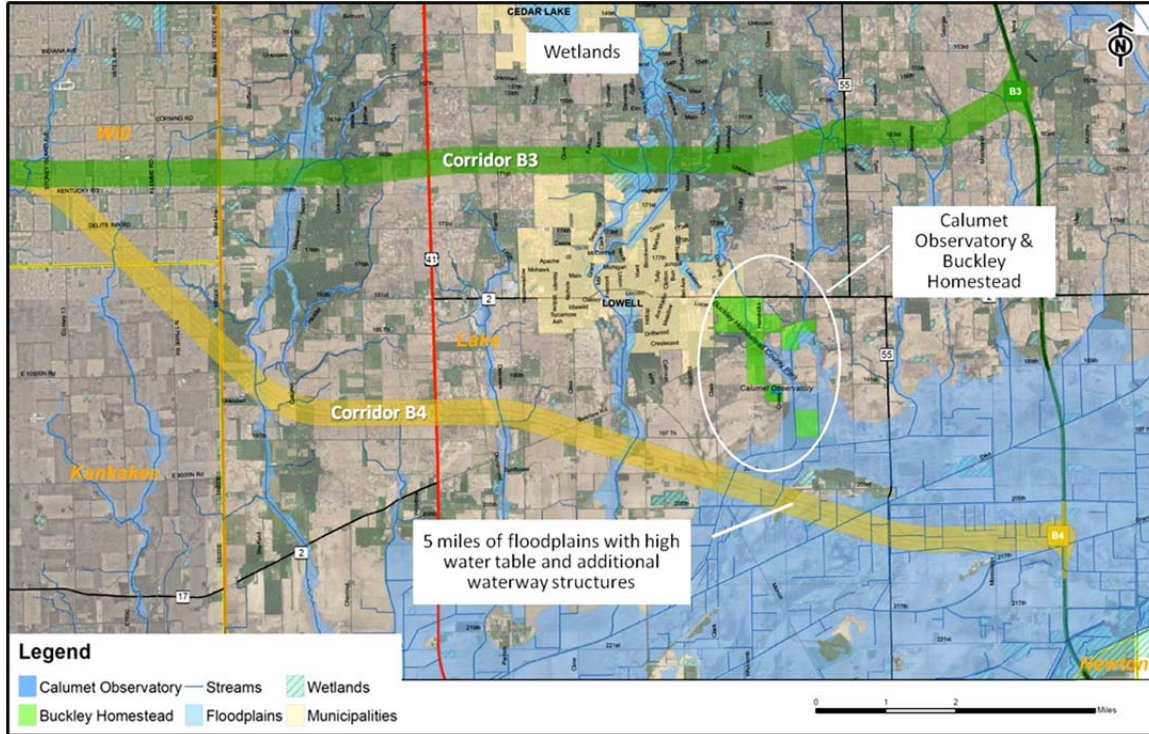
² Eight wells are located in the Town of Lowell wellfield.

- **Water Resources; including wetlands, streams, high quality and impaired streams, community wells, and floodplains** – Corridor B3 has lower overall water resource impacts as compared to Corridor A3S2, and comparable water resource impacts to Corridor B4.

Wetlands and Streams: Corridor A3S2 has greater wetland impacts (62.2 acres) than Corridors B3 (34.4 - 34.6 acres) or B4 (15.2 - 15.4 acres). While Corridor B4 has the lowest wetland impacts, it has notably the highest number of stream crossings (53) as compared to Corridor B3 (33) or Corridor A3S2 (26), which is the lowest. A high percentage of the Corridor B4 stream crossings are associated with the channelized farm ditches located near the east terminus of the corridor in Indiana as shown in Figure 4-1. These constructed agricultural ditches are likely to be considered jurisdictional by the US Army Corps of Engineers (USACE). When measuring stream area impacts within the working alignments, Corridor A3S2 has the greatest impact area (20.6 acres) compared to Corridor B4 (15.5 - 16.1 acres) and Corridor B3 (11.4 - 12.0 acres), which is the lowest.

High Quality and Impaired Streams: All three corridors cross a similar number of streams with higher quality special designations. Corridor A3S2 includes two

Figure 4-1. Water Resources – Corridors B3 and B4



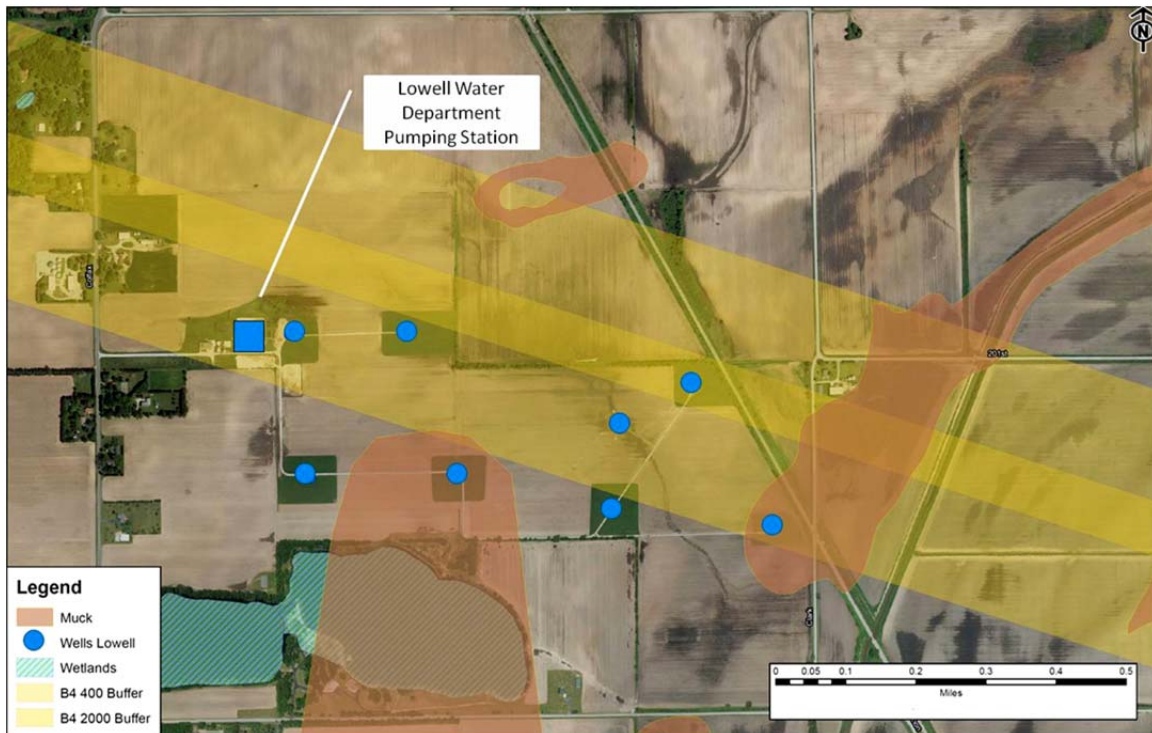
streams listed on the Nationwide Rivers Inventory (NRI). The NRI is a compilation of free-flowing rivers and river segments that could qualify for inclusion in the National Wild and Scenic Rivers System. Corridors B3 and B4 do not include any stream sections listed on the NRI. However, one Biologically Significant Stream (BSS), Trim Creek, is crossed by Corridors B3 and B4. Corridor A3S2 also crosses Trim Creek, but in an area that has not been identified as biologically significant.

Several of the streams in the three corridors are classified as impaired and are included in the Illinois or Indiana Clean Water Act Section 303(d) lists. The majority of the impaired streams are located east of I-57. With reference to Tables 3-62 and 3-63, Corridor B4 has the greatest number of crossings of impaired streams and tributaries (31), as compared to Corridor A3S2 (10 crossings) and Corridor B3 (9 crossings). The 303(d) impairment sources for the streams within the corridors generally include channelization, habitat modification, agricultural-related activities, and/or municipal point source discharges/stormwater associated with development. These sources are consistent with the current agricultural land use of the corridor subwatersheds and urban development. The additional impacts to impaired streams associated with Corridor B4 may require more water quality related remedial measures as compared to Corridors A3S2 and B3.

Wells in Wellhead Protection Areas: The Town of Lowell’s Wellhead Protection Area (WHPA) is located with the working alignment for Corridor B4 as discussed in Section 3.10. There are no WHPAs located within Corridors A3S2 or B3.

The Lowell Water Department Pumping Station is located approximately 850 feet off the centerline of Corridor B4 as shown in Figure 4-2. The Water Department has eight wells at this facility, of which five are located within Corridor B4 and one is located within the working alignment of Corridor B4. Six of the eight wells are located within a shallow aquifer, as discussed in Section 3.10.2, which presents a potential increase in chlorides entering the groundwater during pumping operations and/or would require mitigation measures to prevent this potential if Corridor B4 was implemented. According to the Town of Lowell Phase II Wellhead Protection Plan (Town of Lowell, 2011a), the pumping station has a projected capacity of 1.2 million gallons per day with a current production of approximately 860,000 gallons per day. On this basis, the loss of one well and potential impacts to additional wells would adversely impact the projected pumping station capacity.

Figure 4-2. Town of Lowell Municipal Water Wells – Corridor B4



There are several primary factors that contributed to the alignment of Corridor B4, and that constrain the ability to avoid the Town of Lowell WHPA. The primary factor for the location of Corridor B4 is the interchange location with I-65 which is 3 miles south of SR 2 per interchange spacing requirements. As discussed in Section 4.3.2.1, a larger area of high construction risk soils exists just north of the current Corridor B4 alignment, which would present greater constructability and cost issues. As shown in Figure 4-1, realigning Corridor B4 even further to the north would impact the Buckley Homestead County Park.

Floodplains: With reference to Section 3.11 and Table 3-67, it is assumed in the Tier One FEIS that floodway impacts will be avoided or minimized by design objective,

with further analysis required as part of the Tier Two NEPA studies when greater design detail can be evaluated. However, it is not practical to avoid floodplain impacts. Based on the Tier One methodology for quantifying and comparing potential floodplain impacts, Corridor B4 has the greatest potential floodplain impacts (127.8 acre-feet) in comparison to Corridor A3S2 (54.1 acre-feet) and Corridor B3 (55.0 acre-feet) as shown in Table 4-3. This difference occurs predominantly east of the Illinois-Indiana state line where Corridor B4 diverges southeast from Corridor B3 and traverses the Kankakee River floodplain. Within Lake County, Indiana, the floodplain impacts are 17.8, 17.1, and 89.7 acre-feet for Corridors A3S2, B3, and B4 respectively.

Table 4-3. Floodplain Impacts in Illinois and Indiana

Corridor	Floodplain Impacts (acre-feet)		
	Illinois	Indiana	Total
A3S2	36.3	17.8	54.1
B3	37.9	17.1	55.0
B4	38.1	89.7	127.8
Total:	112.3	124.6	236.9

Although there is no regulatory requirement for Illinois Department of Transportation (IDOT) or Indiana Department of Transportation (INDOT) to provide compensatory storage for floodplain impacts, both agencies would consider providing compensatory storage to the extent practical and feasible based on the existing Will County and Lake County ordinances. On this basis, the floodplain impacts associated with each corridor is a differentiating issue, particularly given the magnitude of impacts for Corridor B4 as compared to Corridors A3S2 and B3.

In addition, the impact associated with Corridor B4 within the Kankakee River floodplain in Indiana presents greater constructability and cost issues as discussed in Section 4.2.3. As discussed above, the alignment of Corridor B4 was determined based on several key factors which constrain the ability to shift the alignment of Corridor B4 to the north to avoid or minimize impacts to the Kankakee River floodplain.

- **Natural Resources** – Impacts to forested communities greater than 20 acres in size are the greatest for Corridor A3S2 (105.8 acres) as compared to Corridor B3 (65.3 acres) and Corridor B4 (17.0 acres). All three corridors cross the Des Plaines State Fish and Wildlife Area (DPSFWA), with Corridor A3S2 impacting more area (10.3 acres) than Corridors B3 and B4 (2.9 acres each); there is also more flexibility to avoid or minimize impacts to the DPSFWA with Corridors B3 and B4 as compared to Corridor A3S2.
- **Midewin National Tallgrass Prairie** – All of the corridors avoid converting any land for transportation use that is owned by the Midewin National Tallgrass Prairie. Corridors B3 and B4 are located adjacent to the southeast corner of the Midewin

National Tallgrass Prairie property near the intersection of IL-53 and River Road. Corridor A3S2 is located adjacent to a portion of the JATA¹ on the east side of the Des Plaines River. There are state-listed and federally-listed threatened and endangered species and habitat present at both JATA and Midewin National Tallgrass Prairie, although no direct impact to these resources were identified in Tier One for any of the three corridors. Additionally, Alternate Route 66 (located on IL-53 where it bisects the Midewin National Tallgrass Prairie) is listed on the National Register of Historic Places. The estimated average daily traffic (ADT) on IL-53 through the Midewin National Tallgrass Prairie is 17,000 for the 2040 No-Action Alternative. For Corridor A3S2 the ADT would range from 17,000 to 21,000, and for Corridors B3 and B4 the ADT would range from 20,000 to 28,000 depending on non-tolled or tolled scenario, and the IL-53 interchange design concept.

- **Agricultural Resources, including farm parcels, total farmland and prime farmland** – Corridor B4 has overall the largest impacts to farmland (2,768 - 2,827 acres) as compared to Corridor B3 (2,666 - 2,725 acres) and Corridor A3S2 (2,454 - 2,483 acres) which is based on the Corridor A3S2 northern alignment through the more developed portions of the Study Area. However, Corridor A3S2 has notably the largest impacts to prime farmland (1,788 - 1,813 acres) as compared to Corridor B3 (1,567 - 1,607 acres) and Corridor B4 (1,432 - 1,472 acres). Corridor B3 has the fewest diagonal parcel severances (0 parcels) due to its generally straight alignment across the central portion of the Study Area, while Corridors A3S2 and B4 both result in notably larger diagonal agricultural parcel severances (81 and 83 parcels respectively) due to their diagonal alignment sections.

Based on the above information and the comparative analysis of Corridors A3S2, B3, and B4, Corridor B3 has the overall least potential impacts to the natural and built environment. Corridor B3 impacts less high quality resources than Corridor A3S2, particularly with regard to prime farmland, NRI listed streams, forested areas over 20 acres, and high quality streams. Corridors B3 and B4 are comparable in impacts to high quality resources due to their common location over the majority of their length. For water resources, although Corridor B3 impacts more wetlands than Corridor B4, Corridor B3 has less impacts than Corridor B4 with respect to stream crossings, impaired stream crossings, WHPA impacts, and floodplain impacts.

4.2.2 Travel Performance

Each of the three alternative corridors carried forward into the Tier One EIS improved travel performance as compared to the No-Action Alternative and satisfied the project Purpose and Need. The travel performance for Corridors A3S2, B3, and B4 was evaluated using the regional travel demand forecasting model based on a build socioeconomic forecast. This build socioeconomic forecast assumes a limited-access corridor is in place in the central portion of the Study Area (The al Chalabi Group, Ltd. (ACG), 2012. See Appendix E). The build socioeconomic forecast is based on the

¹ The JATA is a property that is to be transferred to Midewin National Tallgrass Prairie when no longer needed by the Department of Defense, according to the Illinois Conservation Act of 1995.

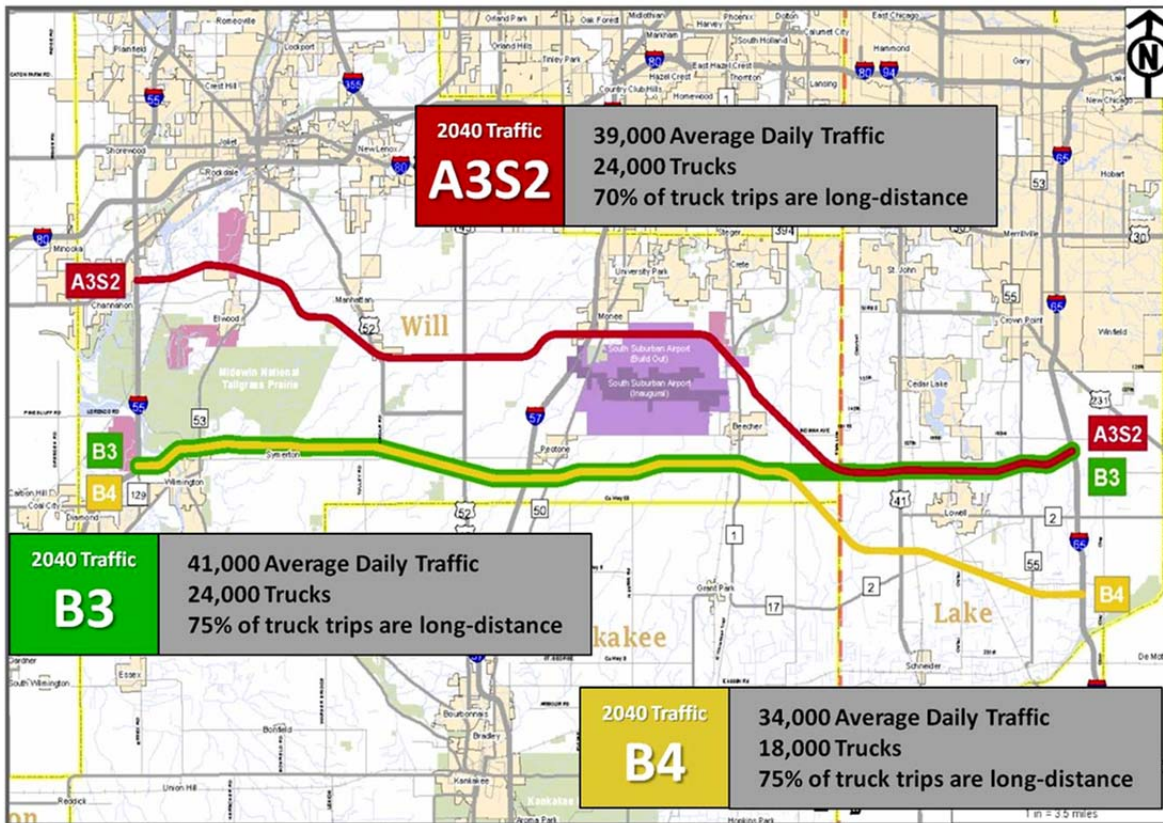
reallocation of regional population and employment based on the change in accessibility provided by the limited-access corridor.

The main travel markets served by the Illiana Corridor alternatives are:

- Local trips, or those trips in the Study Area associated with the projected 2040 population and employment forecasts
- Long distance regional and national traffic that is found on the interstates and major arterial highways
- Intermodal truck activity that distributes in and out from the intermodal centers in all directions both locally and nationally

As summarized in Figure 4-3, for the non-tolled scenario, Corridors A3S2 and B3 were the top performers. Corridor B3 has a higher estimated ADT of 41,000 vehicles per day, with both corridors having an estimated 24,000 trucks per day for the 2040 forecast year. Corridor A3S2 had 2,000 less ADT than Corridor B3, and the same estimated truck volume as Corridor B3.

Figure 4-3. 2040 Corridor Travel Performance – Non Tolled



Corridor A3S2 is closer to population centers, and picks up a greater share of the local population and employment generated trips. However, the effect of the diagonal alignment of Corridor A3S2 is that it attracts a lower share of long distance regional traffic and trucks

due to its northwest-southeast orientation which is less compatible with the predominant southwest-northeast long distance travel pattern through the region.

Corridor A3S2 offers a travel performance advantage for:

- Reducing Region and South Sub-Region vehicle hours of travel (VHT) and truck hours of travel (THT), meaning congestion is improved resulting in faster speeds and lower travel times
- Reducing Arterials VHT and Congested Arterials vehicle miles of travel (VMT) in the study area, meaning congestion is improved resulting in faster speeds and lower travel times
- Improving both east-west and north-south travel due to its diagonal component, and offering shorter trips across the region and study area for trips that desire travel in that direction

Corridors B3 and B4 are farther from denser population centers, but provide a high speed connection across Illinois and Indiana west of I-65 where no high-type facility exists. As shown in Figure 4-3, while Corridor B3 is not as close to denser population centers as Corridor A3S2, Corridor B3 attracts greater ADT and greater portion of long distance truck trips, due in part to its more direct east-west alignment which can efficiently serve more long distance traffic. Corridor B3 provides a straight and continuous option for the long distance trips, so the regional and truck freight performance is better than the other two corridors. Since the corridor is farther from I-80/US 30, the diversion from I-80 is mostly long distance trips taking an alternative route, so there is less of a shift of population and employment from the South Sub-Region as traffic shifts to utilize the capacity that is opened up on I-80 and US 30. Overall, Corridor B3 provides the best balance of travel performance meeting the project Purpose and Need.

Corridor B3 offers a travel performance advantage for:

- Serving a higher amount of total daily traffic
- Reducing regional east-west VHT, which indicates travel time improvement to I-80/US 30
- Reducing Study Area arterial truck miles of travel, which reflects diversion of through and local trucks from the arterial road system onto the Illiana Corridor reducing truck conflicts on the local roads
- Reducing out of direction travel for long distance travel with its east-west alignment

Corridor B4 underperforms Corridors A3S2 and B3 for all travel performance measures. Corridor B4 had 7,000 less ADT than Corridor B3 and 6,000 less trucks. The lower performance of Corridor B4 is attributed to its greater distance from the more densely populated areas in the Indiana portion of the corridor. In addition, while Corridor B4 is identical to Corridor B3 for much of its length, it departs in a southeasterly diagonal

route in Indiana. Similar to Corridor A3S2, the effect of the diagonal alignment is that it attracts a lower share of long distance regional traffic and trucks due to its northwest-southeast orientation which is less compatible with the predominant southwest-northeast long distance travel pattern through the region, which adversely affects the corridor's ability to serve the travel demands.

Effect of Tolling: For the tolled scenarios, Corridors B3, A3S2, and B4 show similar pattern of travel performance as in the non-tolled scenario. Based on an assumed tolled facility for 2040, Corridor B3 has the highest projected use for all vehicles at 24,000 vehicles per day (VPD) as compared to 23,000 for Corridor A3S2 and 20,000 for Corridor B4. When tolling is applied, Corridor B3 equals or is superior to Corridor A3S2 in almost all travel measures, with the only exception being congested VMT on arterials in the Study Area. Corridor A3S2 experiences a greater shift of traffic back to the I-80/US 30 corridor than Corridors B3 and B4 because the travel market it serves has more options to use alternative routes.

For example, for regional east-west VHT, Corridor B3 performs better than Corridor A3S2 (1,000 less hours per day) in a non-tolled scenario, but in the higher retained toll traffic scenario, the differential expands to 3,000 less hours per day in favor of Corridor B3. At a vehicle time value of \$24/hour² (National Cooperative Highway Research Program (NCHRP), 2001), a tolled Corridor B3 could save over \$26 million per year in regional east-west VHT over a tolled Corridor A3S2.

The ability of Corridor B3 to retain more of the traffic diverted from I-80 improves accessibility in the South Sub-Region. Corridor B3 provides a more direct route better serving the long distance travel and intermodal truck markets which are less averse to paying a toll. Corridor B3 retains more of the traffic under a tolled scenario, with 2,000 additional vehicles per day than Corridor A3S2 in the higher retained toll traffic scenario.

As with the non-tolled scenario, Corridor B4 underperforms Corridors A3S2 and B3 for all travel performance measures when tolling is applied; it is projected to carry 4,000 less ADT and 3,000 less trucks than Corridor B3 in a tolled scenario.

Conclusion: Corridors A3S2 and B3 had the best overall 2040 travel performance with Corridor B4 performing notably worse for both the non-tolled and tolled scenarios.

Corridor A3S2 and Corridors B3 and B4 serve slightly different travel markets. With Corridor A3S2's greater proximity to populated areas to the north, the corridor has slightly more "commuter" and other shorter trips. Corridors B3 and B4 have fewer commuter trips, and pick up a slightly larger share of longer distance regional and through trips, which results in a higher retention of traffic when a tolled scenario is applied since these trips are less averse to paying a toll.

² Based on \$24 per hour as cited in NCHRP Report 456, Guidebook for Assessing the Social and Economic Effects of Transportation Projects; Table 2.1 - Value of One Hour of Travel Time weighted for autos and trucks and escalated to 2012 based on CPI-U for Chicago-Gary-Kenosha (NCHRP, 2001).

In determining the transportation performance of each corridor, a key factor is how much a new facility would be used. In a non-tolled scenario for 2040, Corridor B3 would have the highest vehicle ADT volumes and truck ADT (41,000 and 24,000, respectively), with Corridor A3S2 slightly less (39,000 and 24,000, respectively), and Corridor B4 having the lowest vehicle and truck ADT (34,000 and 18,000, respectively). Corridor B4 is projected to carry 25 percent fewer trucks and 17 percent less overall traffic than Corridor B3 in 2040 under a non-tolled scenario.

On this basis, Corridor A3S2 and Corridor B3 have the best overall travel performance, and best address the Purpose and Need by providing travel benefits within the Study Area, South Sub-Region, and Region, and by improving the efficient movement of freight. Corridor B3 provides a travel performance advantage with respect to serving a higher amount of total daily traffic, reducing east-west VHT, reducing through and local truck traffic from the Study Area arterial road system, and reducing out of direction long distance travel. The ability of Corridor B3 to retain more traffic under a tolled scenario improves accessibility in the South Sub-Region. Corridor B4 has relatively poor travel performance as compared to Corridors A3S2 and B3.

4.2.3 Constructability and Cost

The term constructability refers to the extent to which the specific design factors, required methods of construction, and cost factors associated with each corridor contributes to ease of implementation. Over much of their lengths, the three corridors encounter similar construction conditions. Most of the corridors are in agricultural areas with fairly deep top soil horizons, relatively flat topography, and short stream crossings. As discussed below, Corridor A3S2 would have the most challenging constructability issues due to its proximity to development, natural resources, and contaminated areas. Corridors B3 and B4 would have constructability issues similar to each other in most of the Illinois section due to their common alignment. However, where Corridors B3 and B4 diverge near the Illinois-Indiana state line, the constructability for Corridor B4 will be more complex due to the extent of high construction risk soils, the number of stream crossings, and the extent of floodplain impacts.

4.2.3.1 Constructability

The following describes the constructability issues found in each of the three corridors, then compares them to show which corridor is most constructable.

Corridor A3S2: Corridor A3S2 would cross the Des Plaines River. The Des Plaines River in this area is designated a navigable waterway within the Illinois Waterway component of the Illinois River system for which the United States Coast Guard (USCG) has issued a guide clearance requirement of a minimum 47 feet above pool stage (i.e., normal water elevation) providing for the needs of commercial navigation.³ This

³ Guide Clearances are defined as the navigational clearances established by the USGS for a particular navigable water of the US that would provide for the reasonable needs of recreational and commercial navigation (<http://www.uscg.mil/hq/cg5/cg551/Bridge.asp>).

requirement adds complexity to the constructability of this corridor due to the design requirements to achieve the minimum vertical clearance, and the associated coordination to secure the required USCG construction permit. The required length of the river crossing structure is also anticipated to be approximately 1 mile, and may require more complex curved or transitional elements due to the aforementioned clearance requirements as well as avoidance of environmentally sensitive and developed areas. It also would cross an active freight rail line, with additional considerations for horizontal and vertical clearance, thereby extending the overall length of bridge required in the vicinity of the Des Plaines River.

Corridor A3S2 crosses over Treat Island, which is part of the DPSFWA, and a working alignment could not be placed within Corridor A3S2 to avoid impacting Treat Island. A Superfund site is located to the north of Treat Island making avoidance to the north costly in terms of addressing remediation requirements. An interchange to the north between US 6 and Bluff Road on I-55 would have higher business and residential impacts to Channahon. Avoidance to the south would impact the JATA property.

Corridor A3S2 would also need to cross over the CenterPoint intermodal facilities and would likely be on an elevated section throughout much of its length at this location to avoid building impacts and maintain traffic circulation needed for the facility to function. This would add to the complexity, cost, and time of construction.

Corridor A3S2 has more special waste sites in or near the corridor which may increase requirements for remediation or protection.

Corridor A3S2 has wetland impacts at various places along its entire length, including the easternmost section where it shares a common location with Corridor B3 in Indiana. These impacts will add to the time and complexity of construction, including permitting and providing compensatory mitigation as well as potential soil treatment.

Corridor B3: Corridor B3 would require crossing the Kankakee River. The Kankakee River is also designated as a navigable waterway. However, it is not part of the Illinois Waterway for which the USCG has established guide clearances for commercial navigation. On this basis, the vertical clearance for Corridor B3 over the Kankakee River would be determined based on coordination with the USCG for which lower recreational clearances are anticipated to be required similar to the existing bridge crossings of the Kankakee River in this area. For this reason, and based on the shorter bank to bank distance, the Kankakee River crossing is anticipated to be shorter (at approximately half the length) and less complex than the Des Plaines River crossing on Corridor A3S2.

Wetland impacts along Corridor B3 are located primarily in Indiana; they will impact constructability as with Corridor A3S2 in those locations, but to a substantially lesser degree to the west where the corridors diverge, due to the substantially lesser acreage of wetlands along Corridor B3 in Illinois as compared to Corridor A3S2.

As shown in Figure 4-4 and Table 4-4, Corridors B3 and A3S2 encounter extended areas of medium construction risk soils in Lake County, Indiana, and more isolated areas of high construction risk soils at the major north-south waterways. The level of construction risk is based on the potential adverse impacts to cost and implementation schedule based on the soil types and the likely associated need for mitigation measures such as chemical modification, settlement monitoring periods and/or over-excavation to provide stability. The characteristics of these soils are discussed in Section 3.17, and were determined based on a review of the United States Department of Agriculture (USDA) soils mapping.

Figure 4-4. Construction Risk Soils in Indiana – Corridors B3 and B4

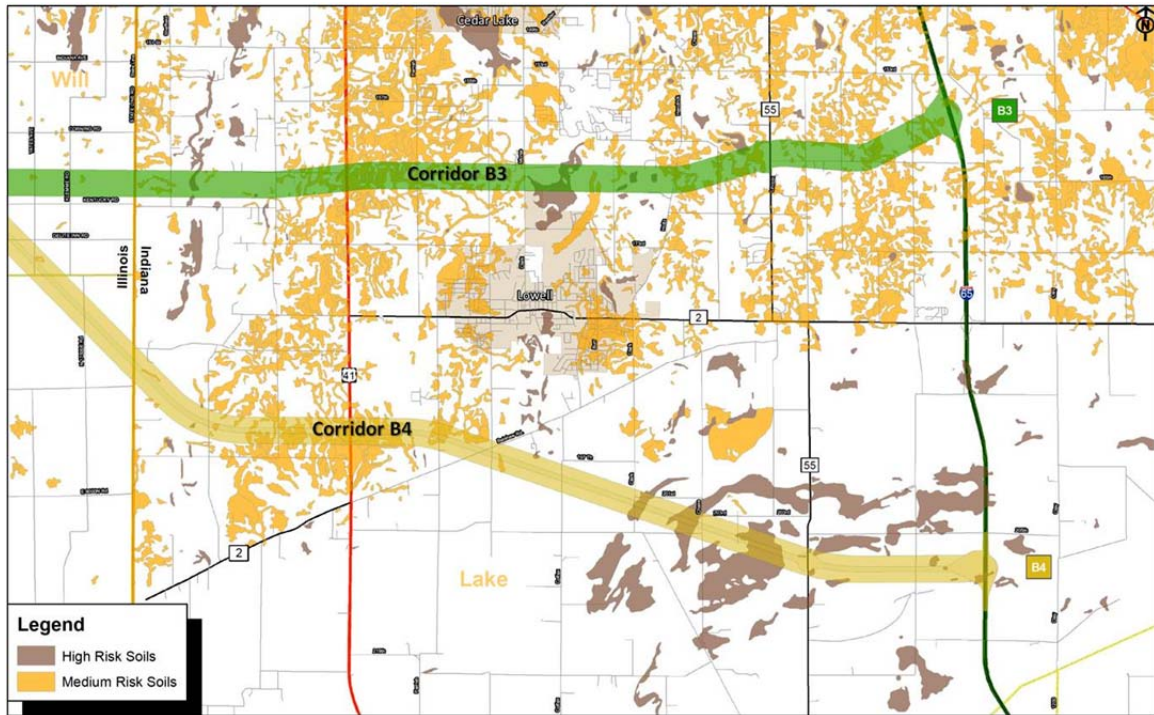


Table 4-4. Length of Construction Risk Soils Crossed in Indiana – Corridors B3 and B4

Soil Risk Category	Corridor B3	Corridor B4
High Risk Soils ¹	2,200 lf	8,500 lf
Medium Risk Soils ²	17,600 lf	8,500 lf

¹High Construction Risk Soils Identified: Houghton Muck (Ca), Marsh (Mh), Adrian Muck (Ta).

²Medium Construction Risk Soils Identified: Bono Silt Clay (Bn), Elliot Silt Loam (El), Pewamo Silty Clay (Pe & Pc).

Source: GIS data, US Department of Agriculture, Natural Resources Conservation Service 2-14-12.

Corridor B4: The constructability issues of Corridor B4 are similar to Corridor B3 where they share the same alignment in Illinois. However, east of the Illinois-Indiana state line, where Corridor B4 diverges southeast from Corridor B3, Corridor B4 encounters greater constructability issues.

Corridor B4 would encounter a greater amount of high construction risk soil types, which are typically very weak soils and would be unlikely to support the embankment fills required for construction. Embankment stability, as well as long-term post-construction settlement, would be a concern. Culverts through these areas could require deep foundations or other mitigation for foundation support. These settlement, stability, and foundation support issues would require costly remediation methods, as further discussed in Section 4.2.3.2.

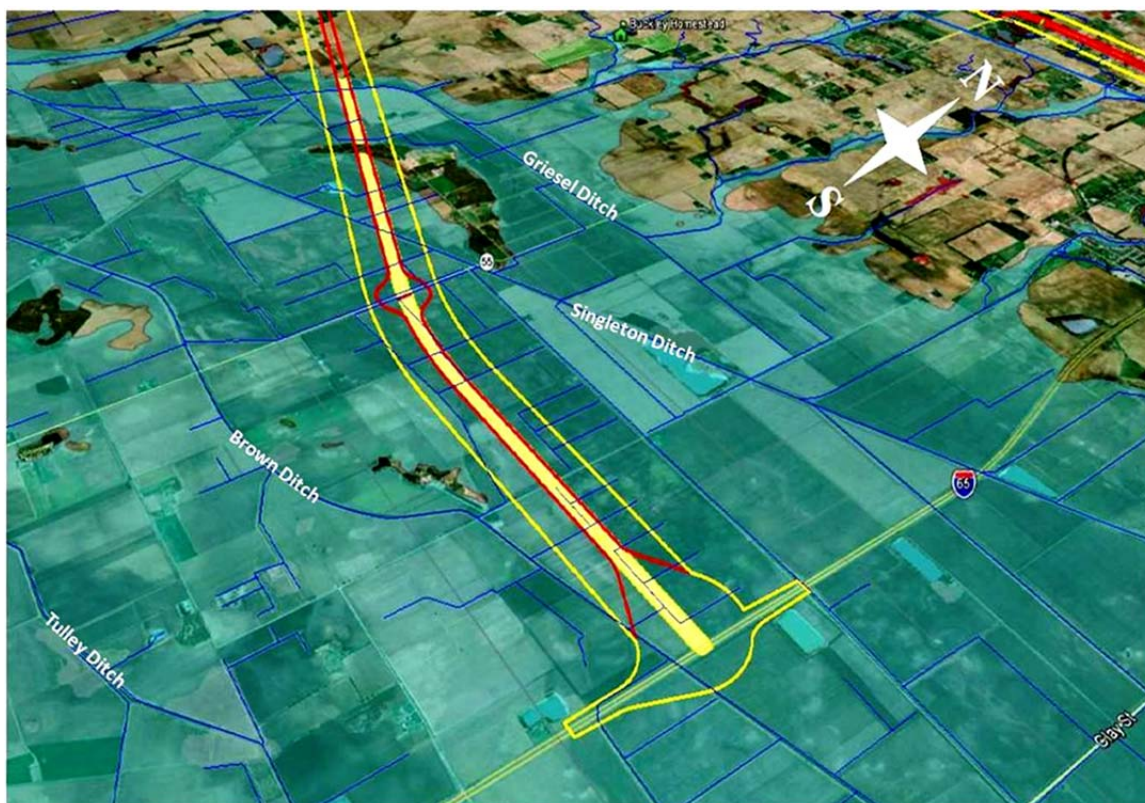
As discussed above, there are 53 stream crossings required on Corridor B4 as compared to 33 on Corridor B3, with many of the Corridor B4 stream crossings located along the southeast portion of Corridor B4 as shown in Figure 4-1. The additional 20 crossings would result in more than 40 additional structures due to separate eastbound and westbound structures and potential additional frontage road structures. This adds complexity with respect to the constructability of Corridor B4 in Indiana based on the more extensive need for investigations of high construction risk soils as discussed above and required remedial measures, hydrology/hydraulic studies, and structure design.

As discussed in Section 4.2.1.2, and shown in Figure 4-5, 5 miles of the eastern end of Corridor B4 would encroach on the 100-year Kankakee River floodplain. In addition to the magnitude of floodplain impacts being a differentiating issue, the associated potential constructability issues are also notable. Encroachment in the floodplain not only creates design and construction challenges associated with a high water table, but increases costs for the additional structures required to maintain distribution of floodwater flows across the floodplain. Additional embankment would also be required to provide the minimum freeboard (i.e., vertical clearance) above flooding conditions as required by highway design standards.⁴ The construction of the additional required embankment is complicated further where high construction risk soils are present, potentially requiring special soil treatments and/or soil removal/backfill to prevent settlement due to the increased soil loading, which would result in additional disturbance for borrow areas and excavated soil disposal areas.

Additionally, new interchanges are often the focus of desirable new development, such as near the local interchange at SR 55 and the proposed system interchange at I-65, both of which would also encroach on the Kankakee River floodplain. Constructability, cost, and permitting issues would inhibit new development in the floodplain areas around these interchanges since developments would be required to comply with the Lake

⁴ The INDOT Design Manual (Figure 203-2C) specifies a two-foot freeboard be provided at the edge of pavement of freeways and four-lane roads above the headwater of highway drainage structures, measured under 100-year flood conditions.

Figure 4-5. Corridor B4 through the Kankakee River Floodplain



County Ordinance for compensatory storage for fill within the Kankakee River floodplain.

Conclusion: Corridor A3S2 has the most numerous and complex constructability issues, including the Des Plaines River crossing and impacts to Treat Island, the complexity of avoiding impacts at CenterPoint, and addressing special waste and construction on wetlands to a greater degree than the other corridors.

Corridor B3 presents overall the least constructability issues with the primary considerations being the Kankakee River crossing in Illinois in comparison to Corridor A3S2, and construction within areas of high construction risk soils and the number of stream crossings in Indiana in comparison to Corridor B4.

Corridor B4 is identical in constructability to Corridor B3 where it shares the same location. Where it diverges from Corridor B3 east of the Illinois-Indiana state line, Corridor B4 encounters additional constructability issues. While Corridor B4 has the least amount of construction in wetlands of the three corridors, it encounters high construction risk soils, a high water table, and additional stream crossings associated with the Kankakee River floodplain, all of which add to the complexity of construction.

4.2.3.2 Cost

The initial conceptual costs represent costs for construction, utility relocations, right of way purchase, mitigation, and engineering. Cost estimates were prepared by escalating 2012 unit prices with 2015 as the construction start date and 2018 as the completion date. This price reflects the assumed Year of Expenditure as prorated over that time period. Following is a cost comparison between the three build corridors and an explanation of the differentiating cost factors.

Corridor A3S2: Corridor A3S2 has an estimated cost of \$1.58 billion.

The cost factors associated with the western termini for Corridor A3S2 are higher than for Corridors B3 and B4. This is based primarily on Corridor A3S2 requiring an approximate 1-mile long crossing over the Des Plaines River, and commercial (including existing intermodal facilities) and residential displacements associated with building a system interchange with I-55 and providing local access.

In the middle portion of the corridors, Corridor A3S2 is projected to incur more costs than Corridors B3 or B4 because of building displacements and wetland impacts. It would also likely result in additional costs for traversing existing pipeline facilities southeast of Manhattan to accommodate the transportation corridor.

Corridor A3S2 is the longest corridor and is located in the most constrained areas. Therefore, Corridor A3S2 is expected to have the greatest probability of increased costs and mitigation as greater detail is developed.

Corridor B3: Corridor B3 has an estimated cost of \$1.25 billion.

Corridors B3 and B4 are in the same location from I-55 in Illinois to near the Illinois-Indiana state line; therefore they are equal in cost within that section. In this section, the two corridors' costs are comparatively lower than Corridor A3S2, due primarily to the Kankakee River crossing of Corridors B3/B4 being approximately half the length of Corridor A3S2's Des Plaines River crossing, less length of roadway required to connect I-55 and the state line, and relatively less building and pipeline impacts.

It is noted that Corridor B3 is anticipated to incur greater construction costs to address wetland impacts as compared to Corridor B4 east of the Illinois-Indiana state line where the corridors diverge. However, these greater costs are substantially overcome by Corridor B3's lower costs in other items due to lesser number of stream crossings, shorter route length, and lesser anticipated soil remediation costs as compared to Corridor B4.

Corridor B4: Corridor B4 has an estimated cost of \$1.40 billion.

Toward the eastern termini, Corridor B4 is projected to have higher costs than Corridors A3S2 or B3 due to accommodating high risk soils conditions and construction

requirements within the Kankakee River floodplain, notwithstanding the additional costs associated with providing compensatory storage to the extent it would be considered. The potential remediation measures, including over-excavation and replacement with suitable material, surcharge and wick drains, geofoam, vibro-compacted concrete columns, and/or other treatments as required, are estimated to potentially add \$31 million to the cost of Corridor B4. The additional 20 stream crossings for Corridor B4 translate to over 40 additional bridges or other large drainage structures (one each for westbound and eastbound lanes per location and including potential frontage roads), and are estimated to potentially add another \$100 million to the cost of Corridor B4.

The additional costs borne by Indiana within its portion of the Illiana Corridor would be \$130 million or 54 percent higher cost per mile for Corridor B4 in Lake County as compared to Corridor B3. This is due primarily to the route's additional length, additional number of structures, additional geotechnical treatment required as discussed previously. Therefore, Indiana would bear a disproportionate cost share of the increase in costs of Corridor B4 as compared to Corridor B3, due to the difference in alignment of the two alternative corridors being almost entirely within Indiana.

Summary: Corridor B3 has the lowest estimated cost of the three build corridors. It is noted that for Tier One studies the focus is on corridor selection. These conceptual costs are intended to allow relative comparisons between corridors. The projected costs are based on conceptual layouts, with many built in assumptions that will become more developed as the studies proceed. Tier Two studies will identify, refine, and detail additional cost factors that will modify the projected conceptual costs of the preferred corridor.

4.2.4 Stakeholder and Agency Input

Throughout the development of the Illiana Corridor, the study team has worked closely with the Corridor Planning Group and Technical Task Forces. The group was organized to be a representative body of the diverse interests of stakeholders across the Study Area. The members of this group represent elected officials, staff from local governments and agencies, and organized interest groups representing economic development, agriculture, and other environmental interests. Over the course of the Tier One DEIS comment period, these units of government and organized interest groups have offered written statements of their position regarding Corridors A3S2, B3, B4, and the No-Action Alternative, as documented in Section 5 of the FEIS. Of those expressing support or opposition to a specific build corridor or the No-Action Alternative, 59 percent support a build corridor. Ninety percent of those supporting a build corridor indicated a preference for Corridor B3.

Throughout the development of the study, more than 120 stakeholder and public meetings have been held to obtain input on the issues associated with each corridor. The December 2011 and February 2012 public meetings first presented the Representative Alternatives and then refined the alternatives. Also from January through February 2012, 36 one-on-one meetings were held with stakeholders to discuss

the initial Representative Alternatives. In February and March of 2012, five meetings were held after Corridor B3 was identified and proposed for further study. An additional 30 meetings were held from March through June of 2012 after Corridors A3S2 and B4 were also identified and proposed for further study. The following summaries present the meeting results for the three proposed corridors.

Corridor A3S2: Some local and regional stakeholders indicated that they believe Corridor A3S2 better serves the region's needs in terms of providing relief to I-80/I-94 and nearby state and local routes, moving freight from existing and planned intermodal facilities, as well as promoting development and redevelopment in communities that are closer to the urban core. These stakeholders also feel that Corridor A3S2 is the most financially viable corridor in terms of its ability to attract a slightly higher amount of traffic sooner than other corridors. While Corridor A3S2 has received support from some communities in the northern Study Area and to the north of the Study Area that favor a facility placed as close as possible to their communities, a majority of the directly affected communities along Corridor A3S2 oppose it due to the proximity to adjacent development and potential impacts.

Corridor B3: The majority of communities expressing a preference to support Corridor B3 based on its blend of travel performance, community compatibility, reduced impacts, and an ability to move freight off of local roads. Corridor B3 is viewed by many stakeholders as the corridor that best meets both the current and future needs of the region based on its ability to address traffic demands, provide a regional bypass to existing east-west congested areas, and accommodate multi-purpose uses. Many stakeholders also believe that the shorter length, lower cost, and moderate impacts of Corridor B3, combined with better overall travel performance and higher ADTs and a greater distance from I-80, would make it the more financially viable corridor. Supporters of Corridor B3 also believe that it is the most viable corridor in terms of potential future expansion to the east and west.

Corridor B4: Stakeholders supporting Corridor B4 feel it is the best corridor because it would be removed from the population centers where more homes and property owners might be impacted, and because it would provide access to planned rail facilities south of Lowell. However, little formal support has been received for Corridor B4.

Public Hearing Comments: Public hearings were held on July 31, 2012 and August 1, 2012. In addition to the stakeholder mailing list, notices were sent to landowners of over 2,000 parcels that could be directly affected by the 2,000 foot wide Corridors A3S2, B3, and B4. Stakeholders submitted a total of 1,122 unique comments during the Tier One DEIS Comment Period between July 13, 2012 and August 29, 2012 with the largest single subset of comments (362) concerning alternatives, and a variety of comments on other topics such as land acquisition, public outreach and other issues. Of the comments indicating a preference for or against an alternative, 9 comments support and 105 comments oppose Corridor A3S2, 105 comments support and 49 comments oppose Corridor B3, 13 comments support and 30 comments oppose Corridor B4, 18 comments oppose Corridors B3 and B4, 194 comments were in favor of a No-Action Alternative,

269 comments generally oppose the project without mention of a specific corridor, 18 comments generally support the Illiana Corridor without specific mention of a corridor, and 304 comments are neutral. In summary, 69 percent of the comments indicating support for a build corridor favored Corridor B3. Fifty-eight percent of all the comments indicated a negative response to a build corridor or policies such as land acquisition in general, or favored the No-Action Alternative.

In addition to comments submitted via verbal public hearing testimony, in writing, or via website, approximately 1,954 signatures were submitted during the Tier One DEIS comment period through petitions. Of these, 836 signatures opposed Corridor B4, 896 signatures supported the No-Action Alternative, and 222 signatures opposed Corridors A3S2 and B3.

4.2.5 Corridor Flexibility

Each corridor's flexibility to accommodate a wider alignment was also considered in determining the preferred corridor. In localized areas, a working alignment wider than 400 feet may be desired to provide for environmental mitigation (wetland mitigation, water quality BMPs, expanded habitat and resource protection measures), frontage road access connections, etc. Project stakeholders identified this factor as an important consideration.

For comparison, each corridor was assessed to determine the increase in impacts if a wider working alignment was considered. Based on this assessment, Corridor A3S2 would result in the highest relative increase in impacts because it would traverse more developed areas, and would therefore be less flexible with respect to accommodating localized wider working alignment areas if determined to be required. Corridors B3 and B4 would have fewer comparative increases in impacts because they both traverse less developed areas.

4.3 Summary

Corridor B3 has been identified as the preferred corridor. In considering the key factors identified with respect to socioeconomic and environmental impacts, travel performance, constructability, cost, stakeholder input, and corridor flexibility, Corridor B3 performs the best when compared to Corridors A3S2 and B4.

Corridor A3S2 and Corridor B3 have similar travel performance, however, the difference in magnitude in impacts between the two corridors make it unreasonable to carry Corridor A3S2 further into the Tier Two NEPA studies. Corridor A3S2 has constructability and cost concerns related to the mile long Des Plaines River crossing. Corridor A3S2 requires substantially more land to accommodate population and employment growth induced by the corridor, compared to Corridor B3 (4,929 acres vs. 2,699 acres). For these reasons, and the other reasons discussed in Section 4.2, Corridor A3S2 has been dismissed from further consideration and will not be carried forward into the Tier Two NEPA studies.

Corridor B3 has the least overall impacts to the natural and built environment, and is comparable to Corridor B4 with respect to water resource impacts. Although Corridor B4 has fewer wetland impacts than Corridor B3 (15 acres vs. 35 acres), Corridor B4 would impact 20 more streams than Corridor B3 and Corridor B4 crosses 22 more impaired streams than Corridor B3. Corridor B4 impacts five wells within the Town of Lowell Wellhead Protection Area, whereas Corridor B3 has no municipal well impacts.

Corridor B4 would encounter a greater amount of high construction risk soils (muck and marsh) which presents greater potential constructability and cost issues as compared to Corridor B3.

Corridor B4 has greater floodplain impacts (127.8 acre-feet), as compared to Corridor B3 (55.0 acre-feet). Although IDOT and INDOT are not required to meet the Will County and Lake County ordinances for compensatory storage for floodplain fill, it would be considered by both agencies to the extent practical and feasible, and is therefore a differentiating issue between the corridors given the magnitude of the difference.

Corridor B4 introduces substantially more diagonal parcel severances as compared to Corridor B3 (83 vs. 0).

The additional cost and impacts of Corridor B4 in Indiana, as compared to Corridor B3, is a major factor to overcome with respect to implementation of Corridor B4.

Corridor B3 provides better travel performance than Corridor B4. Under a tolling scenario, Corridor B3 also performs better than Corridor A3S2. If a toll is applied, Corridor B3 has less traffic diverted away from it than does Corridor A3S2, which is a consideration for future assessment of funding.

For these reasons, and the additional details described in Section 4.2, Corridor B4 has been dismissed from further consideration and will not be carried forward into the Tier Two NEPA studies.

Additional benefits with respect to Corridor B3 further support its selection as the preferred corridor. Corridor B3 is located in areas with less environmental and built feature constraints. This offers the best flexibility to accommodate mitigation for project impacts. Corridor B3 would have less potential to shift population and employment from the older and more developed areas north of the Study Area than Corridor A3S2. Corridor B3 would provide increased accessibility benefits for the South Sub-Region north of the Study Area, similar to Corridor A3S2. Corridor B3 is the least costly to construct due to being the shortest corridor, in addition to having footprint flexibility for avoidance of impacts and costly constructability features.

The majority of communities, agencies, and organized interest groups that support a build corridor, expressed a preference for Corridor B3 based on its blend of travel performance, community compatibility, reduced impacts, and ability to move freight off of local roads.

4.4 Tier Two Considerations for the Preferred Corridor

Corridor B3 will be further analyzed in Tier Two. This analysis will include: 1) continued analysis and definition of the preferred corridor and supporting transportation modes; 2) further development of engineering plans; 3) completion of more detailed environmental investigations, including field studies; 4) corresponding updates to impacts to social, economic, and environmental resources; 5) identification of mitigation measures for those impacts found to be unavoidable; and 6) development of a financing plan that identifies sources of funding and the timing of their availability. The outcome of the Tier Two process will be the preferred alignment for Corridor B3.

Corridor B3 is generally 2,000 feet in width. This corridor is narrower than 2,000 feet in three locations, in order to ensure minimization of impacts on certain sensitive resources in Tier Two. These three locations are east of IL-53 (to avoid directly using land from the Midewin National Tallgrass Prairie); west of IL-53 (to avoid impacts at the Waters Edge subdivision); and at the Village of Symerton (to avoid impacts at the village). The corridor is wider than 2,000 feet in three other locations, primarily in order to maximize opportunities for the development of system interchanges at I-55, I-57, and I-65.

The environmental impact calculations for Corridor B3 in the Tier One FEIS are based on working alignments, as described in Section 3. The working alignments have been used in the Tier One study solely for the purpose of estimating potential impacts, benefits, and costs. Decisions regarding the specific alignment for Corridor B3 and the alignment width will be made in Tier Two and will be further refined during the design phase following Tier Two.

The range of alternatives considered in detail in the Tier Two NEPA document will result in the identification of a single alignment together with multiple route variations or design options in specific areas within the preferred corridor. Key Tier Two issues will include interchange location and design; access to abutting properties; and location of grade separations with intersecting roads. The Tier Two NEPA studies will include consideration of a No-Action Alternative as a baseline for analysis.

In general, the range of alternatives considered in a Tier Two study will be confined to Corridor B3. However, the flexibility will exist to consider alternatives outside of Corridor B3 if necessary to avoid sensitive environmental resources identified as part of the Tier Two environmental field studies, or to address context sensitive design issues in a way that does not materially increase overall impacts. The issue of whether to consider alternatives outside the preferred corridor will be determined in consultation with resource agencies in Tier Two.

The following represents other elements that will need to be considered as the preferred corridor, Corridor B3, is advanced into the Tier Two NEPA studies.

4.4.1 Corridor Land Management

As a result of stakeholder input, the Illiana Corridor study reviewed potential land management techniques that could be used to protect land outside the required footprint for construction of the Illiana Corridor in support of a sustainable transportation corridor with appropriate surrounding land uses (Refer to Appendix J – Corridor Land Management Options). Land use management could be used to preserve space for establishing or expanding planned transportation facilities similar to the Gateway Connector (IDOT, 2005) corridor protection in the St. Louis metropolitan area; to create “greenways” similar to the Mianus River Watershed Strategic Plan (South Western Regional Planning Agency, 2005) in Connecticut; to protect land for agricultural use similar to the Farmland Protection Plan (Kane County Regional Planning Commission, 2004) in Kane County, Illinois; to provide space for utility transmission and/or alternative energy generation needs similar to Alberta’s Transportation/Utility Corridor (TUC) Program (Alberta Infrastructure, 2004), or other potential outcomes or combinations of outcomes. Such an effort would be independent of the Illiana Corridor Tiered EIS study.

4.4.2 Implementation Strategy and Tier Two NEPA Studies

The Tier One EIS for the Illiana Corridor considers a full range of potential multi-modal transportation improvements to satisfy the travel needs of the Study Area. Three alternative corridors were identified and carried forward in the Tier One DEIS for detailed analysis. The study brought together various transportation providers who have interests in improved transportation in the Study Area and who provided input throughout the study process. Ultimately, the Tier One EIS studies have concluded with the identification of Corridor B3 as the preferred corridor to be advanced for detailed evaluation and refinement in the Tier Two NEPA studies.

By the selection of a preferred corridor, the Tier One decision will serve as a basis for transportation agencies and other transportation providers to prioritize and plan for eventual project implementation.

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

To facilitate overall project implementation, the Tier Two NEPA studies may be conducted for the entire preferred corridor or for sections of the preferred corridor that have independent utility. Based on the preferred corridor as a limited-access highway facility, the logical termini for sections of independent utility would be the existing north-south Interstate facilities within the Study Area. On this basis, should the lead

agencies agree to advance the Tier Two NEPA studies in independent sections, the logical sections of independent utility would be:

- I-65 to I-57
- I-57 to I-55

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

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

4.4.3 Potential Funding and Financing Options

No funding is currently committed to the Illiana Corridor, other than preliminary engineering. Further funding requirements for the Illiana Corridor will be given detailed attention in the Tier Two NEPA studies.

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

Because public funding resources are increasingly limited, state and local governments are faced with the challenge of inadequate funding to meet transportation needs. The result is that critical projects often face years of delay before funding is available. In an era of constrained public funding, new funding mechanisms are being considered. Illinois and Indiana have signed a Memorandum of Agreement (MOA) and passed enabling legislation to allow for public private agreements between Illinois and Indiana and one or more private entities to design, build, finance, operate, and maintain the Illiana Corridor. However, additional potential funding sources and financing structures are also anticipated to be required. The range of potential funding and financing strategies includes the following:

- Federal Credit Assistance and Instruments:
 - Transportation Infrastructure Finance and Innovation Act of 1998 is a Federal transportation credit assistance program first authorized under the Transportation Equity Act (TEA)-21 that provides direct Federal loans, lines of credit, and loan

guarantees through the US Department of Transportation (USDOT) to large projects of national significance, under criteria developed by Congress. The Moving Ahead for Progress in the 21st Century Act (MAP-21) authorization expanded the amount of Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance available by a factor of seven to eight compared to Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). In addition, TIFIA loans can now account for up to 49 percent of eligible project costs. Finally, the new bill includes a 10 percent set-aside for rural projects. These projects would also benefit from lower financing cost. The Illiana Corridor project could capitalize on these changes and benefit from this form of borrowing if it meets the program's eligibility criteria. However, it should be noted that the program's funding capacity is expected to remain in high demand, due to the number of projects submitting requests.

- Section 129 of Title 23 of US Code (U.S.C.) permits states to use federal funds to make loans to any federally eligible project. The loans must be repaid from a dedicated, nonfederal source. Illinois does not have enabling legislation in place to use Section 129 loans for surface transportation projects.
 - State Infrastructure Banks (SIBs) are a state revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects. Illinois does not have an established SIB. Indiana established a SIB in 1999, but has so far only authorized two local projects, for a total loan amount of \$6 million, all of which had been disbursed as of December 2008.
 - Private Activity Bonds (PABs) are tax-exempt bonds issued by public entities to provide low-cost financing for private projects that serve a public purpose. The MAP-21 authorization maintained the PAB provisions included under SAFETEA-LU, including the \$15 billion authorization ceiling. Eligible projects include privately developed and operated highway and freight transfer facilities, which could include the Illiana Corridor if delivered under a public-private partnership (P3) arrangement (see below).
 - Grant Anticipate Revenue Vehicle Bonds (GARVEEs) are a debt instrument repayable, either exclusively or primarily, with future federal aid highway funds under Section 122 of Title 23 of the U.S.C. Although the source of payment is federal funds, GARVEEs cannot be backed by a federal guarantee but are issued at the sole discretion of, and on the security of, the state issuing entity. Due to uncertainty in policy regarding the future solvency of the Federal Highway Trust Fund, the cost of borrowing for GARVEE bonds has recently increased, as illustrated by the recent downgrade of GARVEE bonds.
- Federal Aid Highway Program
 - Federal Highway Program Formula Funds are a possible source. The Illiana Corridor would be eligible to receive funds from some of the federal funding programs authorized under Title 23 of the U.S.C. (the federal-aid highway program). Current formula funding is already fully committed to other projects and prospects are not good regarding a potential increase in federal funding levels. Nonetheless,

- any increase in these funding levels could potentially be used to fund a portion of the project.
- TEA-21 section 1302 removed the requirement that the federal share of project costs be applied to each progress payment, thereby allowing the Federal Highway Administration (FHWA) to establish a more flexible matching share policy for progress payments, referred to as Tapered Match, as long as the appropriate matching ratio is achieved by the end of the project. Tapered match may be useful when the government sponsor lacks the funds needed to match a federal project at the start but will accumulate the match over the life of the project. The state, when requesting a tapered match, should include in its request for project approval, a statement that tapered match will achieve earlier project completion, reduced project costs, or allow additional nonfederal funds to be leveraged for the project. With or without the authorization of tapered match, the state remains committed to providing the required nonfederal share of project costs. The state must also be able to control the federal share amount in its billing system.
 - State Funding and Financing
 - IDOT and INDOT Funding are existing funds traditionally used by both states to fund transportation projects are already fully committed to other projects. However, the Illiana Corridor could benefit from these funds, should revenues from the state fuel tax or vehicle registration fee increase, or should additional state revenues be identified.
 - Toll Revenue Bonds are issued by a public entity and could be used to finance all or a portion of the project's capital cost. These bonds would be backed by net toll revenues collected on the Illiana Corridor. The cost of financing the project through this mechanism would depend on numerous factors including, but not limited to, the credit quality of the net toll revenues pledged toward repayment of the bonds, guarantees offered by the issuing entity, capital structure for the project, and market conditions at the time of issuance. The effects of a potential tolling scenario have been considered as part of the travel performance evaluation in Tier One.
 - P3s consist of a contractual agreement that is formed between public agency and private sector partners, which allows more private sector participation in the delivery, financing, and/or operation of a transportation project than is traditionally sought. The term "public-private partnership" defines a continuum of contractual relationships between public project sponsors and private entities ranging from relatively simple design-build contracts, to long-term concession agreements where design, construction, financing, operations, and maintenance responsibilities (and associated risks) are transferred to the private partner. The value created from a P3 agreement stems from the efficient allocation of risks to the parties that are best able to manage them. Depending on market conditions, a P3 agreement can have the effect of reducing demands on constrained public budgets. As noted above, both

Illinois and Indiana have passed enabling legislation to allow for consideration of P3s for the Illiana Corridor.

The level of toll revenues will depend on a number of factors including traffic volumes and tolling policy. As part of the Tier Two NEPA studies, further studies will be undertaken to assess the level of funding that can be expected from toll revenues.

4.4.4 Sustainable Highway Evaluation

In an effort to promote the concept of sustainability in the Illiana Corridor project, the preferred Corridor B3 will be evaluated using the FHWA Sustainable Highways Self-Evaluation Tool as part of the Tier Two NEPA studies. The “Infrastructure Voluntary Evaluation Sustainability Tool” (INVEST) is a web-based tool for measuring the sustainability of transportation projects. INVEST 1.0 was released on October 10, 2012.

INVEST is based on the three primary principles of sustainability: social equity, responsible use of natural resources, and economic development. The tool is designed to encourage and help agencies and organizations integrate sustainability best practices into highway and roadway projects. Given the limited details available as part of the Tier One EIS for the Illiana Corridor, it is being discussed here with respect to its applications to the Illiana Corridor project as part of the Tier Two NEPA studies.

4.4.4.1 Categories of Evaluation

The INVEST tool includes sustainability scoring in three main categories of highway development: System Planning, Project Development, and Operations and Maintenance.

System Planning focuses on sustainability efforts within an agency’s system planning program. The System Planning category covers a broad spectrum of highway development rather than a singular project. The criteria used to score an agency’s System Planning includes the level of integration of long-term plans with local and/or regional plans to coordinate transportation, land use, economic development, natural resource planning, and community goals and visions. Scoring criteria also includes consideration of system-wide multimodal and freight planning, along with other factors such as travel demand management and congestion management strategies, strategies to reduce emissions and energy consumption, practices of cost estimating and revenue forecasting, and asset management. The focus of System Planning is centered on the overall practices and operations of transportation agencies, which is beyond the scope of the Illiana Corridor project by itself. However, elements of this category can be considered in evaluating and scoring the project, such as coordinating with local and regional entities through the Corridor Planning Group process with respect to their planning for transportation, land use, economic development, natural resources, and community goals and visions to strive for mutual integration and resulting sustainability benefits.

The Project Development category includes evaluation and scoring for three different project types. The paving scorecard is for projects that are devoted exclusively to pavement preservation or restoration, and spot safety improvements. The basic scorecard is for small reconstruction or bridge replacement projects that do not expand capacity of the roadway. The extended scorecard is for construction of a new roadway facility or a structure where nothing of its type currently exists and major reconstruction projects that add travel lanes to an existing roadway or bridge. The focus of the Project Development category is on the actual planning, design and construction of a new highway facility. The Illiana Corridor project falls into the extended scorecard category with construction of a new facility where a facility does not currently exist. The criteria used to score sustainability of a project during the Project Development phase covers a wide range of topics, including cost benefit analysis, educational outreach, ecological connectivity, pedestrian and bicycle access, pavement design, and construction activities. An evaluation of sustainability during the Project Development phase generally requires an advanced level of project detail to accurately score the project's performance under each criterion; however, the criteria help study team members and decision makers in targeting project decisions at an early stage of development where flexibility exists to achieve sustainability goals. This level of project detail will be developed as part of the Tier Two NEPA studies.

The final category included in the INVEST tool is Operations and Maintenance. This category includes the criteria for evaluating and scoring an agency's programs and practices for its operations and maintenance of roadway facilities. Fourteen criteria are used in evaluating the Operations and Maintenance category, including systems for tracking the implementation/fulfillment of environmental commitments; use of pavement, bridge, and maintenance management systems; traffic control maintenance plans; roadside and facilities infrastructure maintenance plans, standards of practice for snow and ice control; and plans to document renewable energy use and reductions in fossil fuel use and emissions during operations and maintenance. While the Operations and Maintenance phase of a highway project comes after the facility has been constructed, the extent to which programs and practices are in place, or planned for implementation following construction, can be considered in the evaluation and scoring of the current Illiana Corridor project.

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