3.0 Environmental Resources, Impacts, and Mitigation

The purpose of this section is to describe the existing conditions and potential beneficial and adverse social, economic, and environmental impacts of the proposed Illiana Corridor. In addition to the existing conditions and potential impacts, this section includes discussion of anticipated construction related impacts, a summary of potential mitigation measures, and identification of necessary permits and certifications.

3.1 Evaluation Methodology and Summary of Impacts and Mitigation

3.1.1 Tiered Approach

The level of detail and analysis presented in this document is consistent with a tiered environmental process. For this Tier One Draft Environmental Impact Statement (DEIS), the working alignments were developed to define a reasonable environmental footprint width that would accommodate potential transportation improvements needed to satisfy the travel requirements in 2040 and that meets the project Purpose and Need (see Section 1.0).

Several alternative modes described in Section 2.0 (such as local and express bus service, commuter rail, intercity passenger rail, freight rail, and non-motorized) were considered within the multi-purpose corridors. For purposes of this study, transportation options other than limited access highway options may be considered as potential complementary components of the preferred working alignment(s), but not as standalone modal alternatives due to their inability to meet the project Purpose and Need. While these other modes of transportation are not evaluated in further detail in this Tier One DEIS, they will be considered in the Tier Two National Environmental Policy Act (NEPA) studies with detailed development of the preferred working alignment(s) based on further coordination and input from project stakeholders and agencies. From the alternatives evaluation described in Section 2.0, the No-Action Alternative and three working alignments within Corridors A3S2, B3, and B4 are being carried forward for evaluation in this Tier One DEIS.

The No-Action Alternative, consisting only of transportation improvements to existing roadway and transit facilities in the Study Area that are expected to be constructed by the design year (2040), is being carried forward as a baseline for comparison with the working alignments carried forward. The transportation conditions that would exist under the No-Action Alternative are described in Section 1.0. The environmental conditions that would exist under the No-Action Alternative are generally consistent with the "existing conditions" as described in this section, except to the extent that those existing conditions would be affected by other actions (e.g., other transportation or development projects). The effects of reasonably foreseeable other actions that may occur under the No-Action Alternative are described in Section 3.19 Indirect and Cumulative Impacts. The indirect and cumulative analyses compare the conditions under the No-Action Alternative to the future conditions that would exist under each working alignment.

3.1.2 Study Area, Corridors, and Working Alignments

For this Tier One DEIS, corridors of varying widths were established to frame the analysis of potential transportation improvements. Corridor A3S2 consists of a 2,000-foot wide area along the entire length, except for short lengths with reduced width to avoid dense residential development in the communities of Monee and Goodenow, Illinois. Corridor A3S2 joins Corridor B3 just east of the Illinois/Indiana state line, with both corridors connecting to I-65 approximately 3 miles north of SR 2. Corridor B3 consists of a 2,000-foot wide area along the entire length, except for short lengths with reduced width to avoid the federally protected Midewin National Tallgrass Prairie and dense residential development in the Village of Symerton, Illinois. Corridor B4 is the same as Corridor B3 at the western end of the Study Area before separating just west of the Illinois/Indiana state line and continuing as a 2,000-foot corridor connecting to I-65 approximately 6 miles south of Corridor B3. Within the context of the larger Study Area, these corridors provide the focus for discussing the existing conditions for all social, economic, and environmental resources that may be affected by the project.

Within each of the three corridors, working alignments were identified to represent the location of potential transportation improvements. These working alignments follow the centerline of the corridors and provide a functional alignment used to determine potential impacts associated with a transportation improvement in each corridor. The analysis of impacts for each corridor is based on a working alignment that is on average 400 feet wide, but expands in several locations to accommodate potential interchange improvements. Additionally, each working alignment includes interchange design concepts in the vicinity of Illinois Route 53 (IL-53), to provide avoidance alternatives for the National Register of Historic Places (NRHP) listed Alternate Route 66, Wilmington to Joliet (IL-53). The interchange locations and design concepts for each working alignment are described below:

- Working alignment within Corridor A3S2 includes eight potential interchanges at the following locations: I-55, US 45, US 52, I-57, IL-1, SR 41, SR 55, and I-65. In addition, there are three design concepts for an additional interchange in the vicinity of IL-53. Design Concept 1 is a direct interchange connection from the working alignment within Corridor A3S2 to IL-53. Design Concept 2 is a conventional diamond interchange located at South Rowell Avenue approximately 1 mile east of IL-53. A third design concept (Design Concept 3) is no interchange at IL-53.
- Working alignments within B3 and B4 include seven potential interchanges at the following locations: I-55, US 45, I-57, IL-1, SR 41, SR 55, and I-65. In addition to the seven potential interchanges, there are three design concepts for an additional interchange in the vicinity of IL-53 common to both working alignments. Design Concept 1 is a direct interchange connection from the working alignment within Corridor B3 or B4 to IL-53. Design Concept 2 is a conventional diamond interchange located approximately 2.5 miles east of IL-53 connecting the working alignment within Corridor B3 or B4 to South Arsenal Road to the north and Peotone Road to the south. A third design concept (Design Concept 3) is no interchange at IL-53.

The working alignments are used in this Tier One DEIS to assess the potential impacts to the social, economic, and environmental resources. The Tier One DEIS is intended to provide the basis for deciding whether to proceed with a transportation improvement and, if so, to select a corridor(s) that would be advanced for detailed evaluation and refinement in the Tier Two NEPA studies.

If the Tier One DEIS results in the selection of a corridor(s), additional studies will be undertaken during the Tier Two NEPA studies to further define and evaluate the corridor(s) that was selected in the Tier One Record of Decision (ROD). The Tier Two NEPA studies will include: 1) continued analysis and definition of the selected and supporting transportation modes; 2) further development of engineering plans; 3) completion of more detailed environmental investigations; 4) corresponding updates to impacts to social, economic, and environmental resources; and, 5) identification of mitigation measures for those impacts found to be unavoidable. For additional information regarding the Tier Two NEPA studies, refer to Section 2.7.

3.1.3 Calculation of Environmental Impacts

The No-Action Alternative is considered the baseline condition against which the corridors in this DEIS are evaluated and therefore is not considered to have an impact on social, economic, and environmental resources evaluated in this Tier One DEIS. The evaluation of impacts associated with the three working alignments carried forward for detailed comparison, which are referred to as the working alignments within Corridors A3S2, B3, and B4, is based on existing and available data used in conjunction with a geographic information system (GIS). The determination of impacts for the various resources was produced by overlaying the working alignments, including potential interchanges and design concepts, located within the corridors on existing conditions for each resource in GIS and quantifying those resources within the footprint of the working alignment. For some resource topics, impacts are described as "potential" (e.g., archaeological, historical, threatened and endangered species) pending field investigations to be completed as part of the Tier Two NEPA studies.

Within this DEIS, the corridors are used to report existing conditions, while impacts are reported on a more focused level based on the working alignment footprint within each corridor. The use of the term "working alignment" refers to the impacts that could occur along the 400- foot wide working alignments within the respective corridors: A3S2, B3 and B4.

3.1.4 Summary of Potential Environmental Impacts

This section provides a summary of the potential environmental consequences associated with each working alignment within the corridors. The key impacts for each resource area are shown in Table 3-1.

Table 3-1. Summary of Key Environmental Impacts[1]

Resource	A3S2 Working Alignment		B3 Working Alignment		B4 Working Alignment	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Design Characteristics						
Project Length (miles)	51.1		46.8		48.8	
New Lane Miles of Limited-Access Highway	204		187		195	
Social and Economic						
Community Cohesion	Crosses residential neighborhoods in Elwood, Manhattan, and Monee		Separates at least one residential area from the core of Wilmington		Same as B3 Working Alignment	
Public Facilities	None		Facilities in Wilmington (City maintenance facility), Symerton (public facility), and Peotone (maintenance facility)		Same as B3	
Residential Displacements (number)	66—68	15	7	15	8	4
Total	81 - 83		22		12	
Non-agricultural Business Displacements (number)	9	1	8	1	8	1
Total	10		9		9	
Agricultural Business Displacements (number)	1	0	1	0	2	0
Total	1		1		2	
Transportation	Increased traffic on regional highway system; potential benefits with improved access		Same as A3S2 Working Alignment		Same as A3S2 Working Alignment	

Table 3-1. Summary of Key Environmental Impacts (continued)

Resource	A3S2 Working Alignment		B3 Working Alignment		B4 Working Alignment	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Agricultural						
Farm Parcels (number)	218—221	104	257—261	104	264—268	80
Total	322 - 325		359 - 363		344 - 348	
Farmstead Relocations (number)	19 - 22	8	21 - 22	7	20 - 21	4
Total	27 - 30		28 - 29		24 - 25	
Agricultural Land Diagonal Parcel Severances (number)	81	0	0	0		83
Total	81		0		83	
Farmland (acres)	1,745—1,775	709	1,958—2,017	708	2,010—2,069	758
Total	2,453 - 2,483		2,667 - 2,725		2,768 - 2,827	
Prime Farmland (acres)	1,407—1,432	381	1,184—1,224	383	1,238—1,278	194
Total	1,788 – 1,813		1,567 – 1,607		1,432 - 1,472	
Statewide Important Farmland (acres)	136	11	266	11	259	229
Total	147		277		488	
Cultural Resources[2]						
Archaeological Resources (previously identified sites within the APE)	0	3	2	3	2	0
Total	3		5		2	
Historic Resources (previously identified resources within the APE)	2	6	3	6	3	3
Total	8		9		6	

Table 3-1. Summary of Key Environmental Impacts (continued)

Resource	A3S2 Working Alignment		B3 Working Alignment		B4 Working Alignment	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Noise[3]						
Land Use Activity Categories (acres per category)	B = 1,854 C = 0 E = 7	B = 921 C = 362 E = 0	B = 830 C = 5 E = 7	B = 921 C = 362 E = 0	B = 795 C = 6 E = 13	B = 88 C = 0 E = 0
Total	B = 2,775 C = 362 E = 7		B = 1,751 C = 367 E = 7		B = 883 C = 6 E = 13	
Natural Resources						
Forested Communities Greater than 20 Acres (acres)	64.4	48.3	17	48.3	17.0	0.0
Total	112.7		65.3		17	
Wildlife Resources (acres of DPSFWA, INAI sites crossed)	10.3, crosses Manhattan Creek	0.0, no INAI sites crossed	2.9, crosses Kankakee River	0.0, no INAI sites crossed	Same as B3 Working Alignment	
Threatened and Endangered Species	None		None		None	
Water Resources/Quality, Floodplains, and Wetlands						
Stream Crossings (number)	15	11	22	11	22	31
Total	26		33		53	
Lakes and Ponds (sites, acres)	7, 4.01	1, 3.65	3, 0.18	1, 3.65	3, 0.18	0, 0
Total	8, 7.7		4, 3.8		3, 0.2	
Highly Erodible Soils (acres)	488.1	465.4	197.6—203.9	468.4	184.3—190.6	126.8
Total	953.5		666.0 – 672.3		311.1 – 317.4	
Total Watershed Disturbance (acres)	3,232		3,103		3,192	
Total Watershed Impervious Area (acres)	776		745		766	

Table 3-1. Summary of Key Environmental Impacts (continued)

Resource	A3S2 Working Alignment		B3 Working Alignment		B4 Working Alignment	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Groundwater	None		None		One Lowell, Indiana, municipal well impacted; indirect impacts to three municipal wells	
Floodplain Fill Volume (acre-feet)	34.9	17.8	28.6	17.1	38.1	69.9
Total	52.7		45.7		108.0	
Wetlands (number)	35	11	18	11	16	1
Total	46		29		17	
Wetlands (acres)	55.7	20.1	14.3 — 14.5	20.1	14.5 — 14.7	0.7
Total	75.8		34.4 – 34.6		15.2 – 15.4	
Special Waste/Hazardous Waste						
Potentially Impacting Sites (number)	4	0	2	0	2	0
Total	4		2		2	
Section 4(f)[4]						
Wauponsee Glacial Trail	405 feet of the southern 19.5-mile multi-use limestone portion of the trail		483 feet of the southern 19.5-mile multi-use limestone portion of trail		Same as B3 Working Alignment	
Alternate Route 66, Wilmington to Joliet	New 400-foot wide interchange with IL-53 in Design Concept 1		Same as A3S2 Working Alignment		Same as A3S2 Working Alignment	
Mineral Resources						
Limestone (linear miles crossed)	38.0	10.9	28.9	10.1	29.9	12.5
Total	48.9		39.0		42.4	
Sand and Gravel (linear miles crossed)	0	0	2.3	0	2.3	5.5
Total	0		2.3		7.8	

Table 3-1. Summary of Key Environmental Impacts (continued)

Resource	A3S2 Working Alignment		B3 Working Alignment		B4 Working Alignment	
	Illinois	Indiana	Illinois	Indiana	Illinois	Indiana
Visual Resources						
Visual Change	Impacts to viewsheds along the corridor		Same as A3S2 Working Alignment		Same as A3S2 Working Alignment	
Indirect and Cumulative						
2040 Population Change	21,391 (1.0%) increase over No-Action Alternative		11,180 (0.9%) increase over No-Action Alternative		11,746 (0.9%) increase over No-Action Alternative	
2040 Employment Change	13,241 (1.0%) increase over No-Action Alternative		7,660 (0.7%) increase over No-Action Alternative		Same as B3 Working Alignment	
Land Area in Study Area Needed to Accommodate Indirect Growth (acres)	4,929		2,699		2,771	

[1] Where provided, the ranges account for the range in impacts associated with the three design concepts

[2]. All of the working alignments have the potential to affect additional archeological and historic properties which may be identified through field work in the Tier Two NEPA studies.

[3] Land Use Activity Categories:

B = Residential

C = Includes hospitals, libraries, parks, and recreation areas

E = Includes hotels, offices, and restaurants.

[4] All of the working alignments have the potential to affect additional Section 4(f) protected historic properties which may be identified through field work in the Tier Two NEPA studies.

3.1.5 Summary of Potential Mitigation

A summary of potential avoidance, minimization, and mitigation measures that could be implemented to compensate for unavoidable impacts associated with implementation of a working alignment is presented below. The main objective of mitigation is to compensate for the potential impacts to sensitive resources that cannot be avoided or minimized. The measures presented in this section are proposals and concepts designed to mitigate the loss of resources or manage the short and long-term impacts of the proposed project. Detailed mitigation strategies will be developed during Tier Two NEPA studies in accordance with policies and procedures of Illinois Department of Transportation (IDOT) and Indiana Department of Transportation (INDOT). In addition, technical analyses and development of detailed mitigation strategies will be coordinated with federal and state resource agencies, as appropriate. The general

conceptual mitigation strategies identified for this Tier One DEIS and the issue(s) addressed are presented in Table 3-2.

Table 3-2. Summary of Potential Avoidance, Minimization, and Mitigation Strategies

Issue	Potential Strategy
Land Use (Section 3.2)	
Interference with access to local residences, businesses, and community services	Design frontage and access roads to maintain access to specific properties that are impacted by construction activities.
Loss of community connectivity	Maintain local route continuity and connectivity to the greatest extent possible with the integrated design of bridge overpasses/underpasses.
Disruption of established communities	Minimize locating transportation right-of-way in urbanized areas, where possible.
Regional and local land use impacts	Facilitation of land use coordination within the overall corridor width (nominally 2,000 feet) with the various regional and local jurisdictions.
Relocations (Section 3.2)	
Right-of-way acquisition of existing residences or businesses	Provide relocation assistance and just compensation to any residence or business displaced in accordance with applicable federal and state regulations and guidelines including the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, IDOT Land Acquisition Procedures Manual, and INDOT Right-of-Way Acquisition Procedure Manual for Local Public Agencies.
Transportation (Section 3.2)	
Construction period road closures and detours	Prepare a traffic management plan to detail strategies of how traffic flow will be maintained and reliable access will be provided during construction to local roads, residences, businesses, and community services and facilities during construction.
Fire, police, and emergency service response time delays	Coordinate with appropriate emergency services providers during development and implementation of the traffic management plan.
Agriculture (Section 3.3)	
Conversion of agricultural land to transportation right-of-way	Coordinate with the NRCS, the Illinois DOA, and the Indiana DOA during the Tier Two NEPA studies to determine measures or actions to avoid and minimize impacts or disruption to agricultural operations.

Table 3-2. Summary of Potential Avoidance, Minimization, and Mitigation Strategies (continued)

Issue	Potential Strategy
Cultural Resources (Section 3.4)	
Adverse effects to archaeological resources	IDOT and INDOT will coordinate with FHWA, SHPOs, Indian Tribes, and other consulting parties to develop appropriate mitigation measures. Measures that could be used include: archaeological data recovery; preservation in place; redesign to preserve specific properties of cultural resources; creation and implementation of maintenance and management plans; transfer of historic lands to local governments, or non-profit organizations; and implementation of public education and outreach programs.
Adverse effects to historic resources	IDOT and INDOT will coordinate with FHWA, SHPOs, Indian Tribes, and other consulting parties to develop appropriate mitigation measures. Measures that could be used include: rehabilitation, restoration, and adaptive reuse of buildings and structures; relocation of buildings and structures; establishing historic preservation funds to support specific preservation purposes; and installation and maintenance of interpretive features.
Noise (Section 3.6)	
Increased noise levels	Noise walls may be provided where determined feasible and reasonable. Noise walls will be analyzed in the Tier Two NEPA studies and coordinated with IDOT, INDOT, and benefited receptors in accordance with the state's respective noise policies.
Energy (Section 3.7)	
Construction of a working alignment would result in the direct and indirect consumption of energy that would no longer be available for other purposes	Measures to reduce energy will be explored in the Tier Two NEPA studies.
Natural Resources (Section 3.8)	
Potential impacts to upland habitat	Refine the working alignment location to minimize impacts to upland habitat; identify measures to mitigate upland plant community impacts in the Tier Two NEPA studies based upon field surveys.

Table 3-2. Summary of Potential Avoidance, Minimization, and Mitigation Strategies (continued)

Issue	Potential Strategy
Potential impacts to wildlife resources	Identify specific avoidance and minimization techniques, such as wildlife bridges, bridging riparian corridors, and/or the use of oversized culverts with natural bottoms, to mitigate wildlife impacts during the Tier Two NEPA studies.
Potential impacts to threatened and endangered species	Complete detailed field surveys as appropriate and identify BMPs to protect habitats of threatened and endangered species to the greatest extent possible. Avoidance of sensitive seasons (i.e., breeding, nesting, or migration) during construction will be evaluated in the Tier Two NEPA studies.
Potential removal of forested areas	Provide forest mitigation by conducting or participating in the purchase of vacant land and planting trees to replace forested areas removed by construction. Potential coordination with Illinois DNR, Indiana DNR, FPDWC, and Lake County Parks to enact conservation easements and maintenance agreements to preserve the areas as forest and to identify responsibility for future maintenance.
Water Resources and Aquatic Habitat (Section 3.9)	
Surface water impacts associated with pollution, erosion, and sedimentation	Conduct detailed field surveys as appropriate during the Tier Two NEPA studies; follow appropriate IDOT and INDOT construction and design guidance; implement BMPs as dictated by required permits and approvals (e.g., NPDES, Section 404 CWA, Section 401 CWA WQC, state floodplain/floodway construction permits, and Section 9 and 10 of the River and Harbors Act).
Permanent fill in waters of the US	Complete detailed field surveys as appropriate during the Tier Two NEPA studies. Consideration will be given to on-site stream restoration, preservation of sites adjacent to impact areas, and the purchase of credits in a USACE approved mitigation bank or at an off-site location. Depending on available sites, mitigation for unvegetated waters of the US could include re-meandering channelized streams, removing/replacing existing drain tiles/culverts with stabilized stream channels, stabilizing eroded streambanks, constructing in-stream habitat, or creating riparian buffer.

Table 3-2. Summary of Potential Avoidance, Minimization, and Mitigation Strategies (continued)

Issue	Potential Strategy
Groundwater (Section 3.10)	
Project-related stormwater runoff polluting groundwater	Implement appropriate BMPs to minimize volume of discharge.
Project-related erosion and sedimentation impacting groundwater	Install proper soil erosion and sediment control measures; minimize streamside and riparian vegetation disturbance; protect discharge points; and install perimeter sediment control devices.
Floodplains (Section 3.11)	
Development in floodplains and loss of flood storage volume	Create compensatory storage volume through excavation of an area that creates an equivalent volume of storage to offset the loss of existing flood storage. Compensatory storage volume mitigation will be excavated adjacent to the area of the floodplain fill or in another equivalent compensatory storage location. To provide compensatory storage areas that drain freely and openly to the watercourse, mitigation may be in the form of bank excavation, adjacent compensatory storage basins, or adjacent underground storage. Potential impacts of compensatory storage mitigation include disturbing trees and other types of habitat established on the banks and overbank area along the waterway. Compensatory storage planning will be based on minimizing the need for mitigation measures. Where impacts are unavoidable, Indiana DNR tree replacement guidelines will be followed.

Table 3-2. Summary of Potential Avoidance, Minimization, and Mitigation Strategies (continued)

Issue	Potential Strategy
Wetlands (Section 3.12)	
Loss of wetlands	Conduct detailed field surveys as appropriate during the Tier Two NEPA studies. Mitigate wetland loss following appropriate guidelines and state compensatory mitigation ratios. The objectives for mitigation will be established in consultation with regulatory and resource agencies. In Illinois, mitigation ratios will follow IDOT's Wetland Action Plan, which are more stringent than those established by USACE and are determined by the size of the impact (over or under 0.5 acres) and the location of the mitigation site (on-site, off-site, out-of-basin). In Indiana, mitigation ratios are defined by the MOU between INDOT, Indiana DNR, and the USFWS, and are based on the wetland type being impacted. The impacts to wetland and waters of the US will be mitigated in the state in which they occur. There are several options for wetland mitigation including banking, on-site/off-site mitigation and restoration, wetland in-lieu fee arrangements, or partnering with state agencies.
Special and Hazardous Waste (Section 3.13)	
Potential hazardous waste risk	Complete detailed special/hazardous waste assessment as part of the Tier Two NEPA studies with appropriate avoidance and mitigation developed as necessary.
Section 4(f) and Parks (Section 3.14) and Special Lands (Section 3.15)	
Crossing the Wauponsee Glacial Trail	Explore options for bridging a working alignment over the existing trail; rerouting the trail; or providing a replacement trail during construction and rerouting a section of the trail.
Alternate Route 66, Wilmington to Joliet (IL-53)	Explore design concepts including an alternate interchange location or no interchange at IL-53 to avoid impacts to Alternate Route 66.
Mineral Resources (Section 3.17)	
Placement of new facilities in weak and compressible soils	Future planning efforts undertaken during the Tier Two NEPA studies will include site-specific surveys to identify the presence of any weak and compressible native soils that could impact the proposed project and potential opportunities for avoidance will be considered.
Placement of structures in expansive soils or bedrock	Consider the use of deep foundation systems, such as driven H-piles or drilled piers, rather than shallow foundations.

Table 3-2. Summary of Potential Avoidance, Minimization, and Mitigation Strategies (continued)

Issue	Potential Strategy
Placement of paved areas over subgrade expansive soils	Evaluate engineering options including stabilization of soils with chemicals, removal, and recompaction of soils, or removal and replacement of expansive soils with a more suitable structural fill.
Placement of facilities in areas with steep gradients or the potential for slope failure	Use structural retaining walls where appropriate.
Impacts to local production capacity of rock for aggregate, asphalt, and concrete	Impacts and benefits to local resource companies will be examined during the Tier Two NEPA studies.
Visual Resources (Section 3.18)	
Changes to the existing visual quality along the corridor	Implement planned design elements, including the use of CSS. General design elements to be considered will include shaping of land at the edges of grading to smooth the transition to existing grades; at Alternate Route 66, consider markings, signage, pavement type and color to fit with existing conditions; develop stormwater treatment systems in both a functional and aesthetic manner; re-vegetate the right-of-way, including the use of native vegetation; maintain narrow medians at river and stream crossings to minimize disturbance of the terrain and the loss of existing vegetation, while providing views of these resources to motorists; and design structures and interchanges with a unified appearance.

3.2 Social and Economic

The Illiana Corridor would have an impact on the social, community, and economic setting of the Study Area. In general, these include impacts such as transportation demand changes, relocation of existing businesses and homes, and changes to community development and land use patterns.

This section describes the socio-economic characteristics of the Study Area, including population trends, environmental justice (EJ), economic setting, and land use. Social and economic impacts were analyzed in accordance with the procedures of the Illinois Department of Transportation (IDOT) Community Impact Assessment Manual (2007), the Federal Highway Administration (FHWA) Community Impact Assessment handbook (1996), IDOT Bureau of Design and Environment (BDE) Manual (BDE, 2010), and the Indiana Department of Transportation (INDOT) Procedural Manual (2008).