

existing parcel lines to reduce the number of farm severances. Where severances are unavoidable, parcels will be traversed where possible, such that point rows or uneconomical remnants are not created. Other measures to avoid or minimize impacts to agricultural resources include:

- Utilize existing right-of-way where practicable and consistent with planned land uses.
- Set alignments parallel to property lines.
- Design alignments to utilize frontage (or access) roads to decrease out of distance travel, landlocked parcels, and severance of farm operations.
- Construct field access points for farm machinery, where practical.
- Widen field entrances, when requested, to allow room for semi-trucks and large agricultural implements to enter and exit from the fields.
- Maintain existing surface and subsurface drainage and work proactively with landowners prior to construction to locate existing field tiles. Re-establish drainage following construction of roadway.
- Arrange informational meetings with the Illinois and Indiana Departments of Agriculture, local agricultural agencies, and local Farm Bureaus to obtain knowledge and awareness of both favorable and unfavorable impacts to agricultural practices in the Study Area.
- Consider the use of acquired uneconomical remnants and landlocked parcels when choosing locations for project elements, such as storm water quality improvements or mitigation.

3.4 Cultural Resources

This section discusses the presence of and potential impacts to cultural resources, which include historic properties, historic/cultural landscapes, and archaeological resources, within the Study Area, corridors, and area of potential effects (APE) as defined in Section 3.4.4.

In the Tier One NEPA studies, identification of historic and archaeological resources within the Study Area was limited to database and records searches for known historic and archaeological properties listed in or eligible for inclusion in the NRHP or previously identified as meeting the 50 year age criterion in previous surveys. No field survey work was completed to identify additional cultural resources and no determinations of eligibility for resources meeting the 50 year age criterion were completed in Tier One. Additional historic and archaeological resources will likely be identified during the Tier Two NEPA studies when field surveys will be conducted to identify any resources more than 45 years of age located in the APE that were not identified in the Tier One database and records searches as previously documented or evaluated for NRHP eligibility. The additional surveys, determinations of eligibility, and effects assessments will be conducted and coordinated with the respective State

Historic Preservation Officers (SHPOs) during the Tier Two NEPA studies when the alternatives within the corridor(s) to be carried forward are developed.

3.4.1 Section 106

Because the FHWA may provide funding for the proposed project and interstate access approvals will be required at I-55, I-57, and I-65 from FHWA, the project is a federal undertaking and is subject to compliance with the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470 et seq.), and its implementing regulations (36 CFR part 800). Specifically, Section 106 of the NHPA requires FHWA to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment.

Historic properties are defined in 36 CFR part 800.16(1)(1) as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP.” The Section 106 evaluation process requires consultation and coordination with specific parties with a demonstrated interest in historic properties in the project vicinity. These parties include the respective SHPOs, local governments, the public, and may involve tribal governments, parties with expertise regarding local historic properties, and other federal agencies such as the ACHP and the National Park Service (NPS).

3.4.2 Consulting Parties

Per the process outlined in the Section 106 implementing regulations, FHWA, in cooperation with the IDOT and the INDOT, identified organizations with an interest in Illinois and Indiana cultural resources in the project vicinity and invited them to participate as consulting parties. These included the respective SHPOs, representatives of municipal and county governments, and cultural resources organizations. Consulting parties provide input on key decision points in the Section 106 process. The SHPOs were consulted regarding the project’s APE and methodologies for conducting Section 106 in Tier One and Tier Two to seek ways to avoid, minimize, or mitigate adverse effects to historic properties. FHWA, IDOT, and INDOT will utilize IDOT and INDOT’s public involvement procedures under NEPA to fulfill Section 106 consultation requirements. On behalf of FHWA, IDOT and INDOT sent over 100 consulting party invitation letters. Responses to participating agency letters were received from the SHPOs. The following is a list of consulting parties who accepted consulting party status:

- Cedar Creek Township
- Cedar Lake Historical Association
- City of Joliet
- City of Wilmington
- Chicago Metropolitan Agency for Planning
- Eagle Creek Township
- Florence Township
- Monee Township
- Town of Merrillville
- Town of Schneider
- Village of Braceville
- Village of Channahon
- Village of Coal City
- Village of Elwood
- Village of Manhattan

- Grant Park Historical Society
- Illinois Historic Preservation Agency (IHPA)
- Indiana Landmarks
- Kankakee County
- KCRPC
- Lake County
- Lake County Parks Department
- Landmarks Illinois
- Lowell Historic Preservation Commission
- Village of Manteno
- Village of Monee
- Village of Peotone
- Washington Township
- Will County
- Will County Board
- Will County Historical Society
- Will County Land Use Department
- Will Township

FHWA also identified federally recognized Indian tribes with potential interests in the Study Area. FHWA sought to initiate government-to-government consultation to identify the Indian tribes' interests in the proposed project and to participate as consulting parties in the Section 106 process. Consulting party invitation letters were sent to 17 tribal governments and responses were received from the Kickapoo Traditional Tribe of Texas and the Miami Tribe of Oklahoma. The following is a list of tribal governments who received the consulting parties' invitation letter:

- Citizen Potawatomi Nation
- Hannahville Indian Community
- Ho-Chunk Nation
- Kickapoo Tribe in Kansas
- Kickapoo Tribe of Oklahoma
- Kickapoo Traditional Tribe of Texas
- Miami Tribe of Oklahoma
- Ottawa Tribe of Oklahoma
- Peoria Tribe of Indians of Oklahoma
- Pokagon Band of Potawatomi Indians
- Potawatomi – Forest County
- Prairie Band Potawatomi Nation
- Sac and Fox Tribe of Mississippi
- Sac and Fox Nation of Missouri
- Sac and Fox Nation of Oklahoma
- Shawnee Tribe
- Wyandotte Tribe of Oklahoma

3.4.3 Cultural Features in the Study Area

The Study Area includes portions of Will and Kankakee counties in Illinois and Lake County in Indiana. The southern portion of the Study Area is less developed and more rural in character while the northern portion is characterized by more developed suburban and urban areas. The Study Area is characterized by diverse cultural features that include historic transportation facilities, commercial historic districts, homesteads, rural farms, county fairgrounds, bridges, and individual buildings, such as houses, schools, churches, and commercial buildings. Numerous mortuary sites, including cemeteries, are located throughout the Study Area. Review of cultural resources present

in the Study Area provides a context for the types of cultural resources that may be present within the corridors and APE.

3.4.4 Area of Potential Effects (APE)

The APE is defined in Section 106 of the NHPA as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.”

FHWA consulted with the SHPOs to develop the APE in Illinois and Indiana for identification of above-ground resources and archaeological resources. For the Tier One DEIS, the APE for above-ground resources is based on the width of the 2,000-foot corridors, which contain the working alignments, and extends an additional mile north and south of each corridor’s boundary to accommodate potential visual impacts. The APE’s total width for above-ground resources is approximately 2.37 miles. Special attention will be given to visual, noise, and vibration impacts during intensive-level consideration of effects to historic properties in the Tier Two NEPA studies. Based on these considerations, the APE for above-ground resources will be refined and subject to revision as the Section 106 process moves forward in the Tier Two NEPA studies to accommodate any project changes and new project information.

For below-ground resources, the APE is based on the limits of the 2,000-foot corridors.

3.4.5 Archaeological Resources

3.4.5.1 Existing Conditions

Illinois

A total of 828 previous Phase 1 cultural resource surveys, covering a total of 106,551 acres of the Study Area, have been undertaken. This includes a large section of east-central Will County previously examined by IDOT - Illinois State Archaeological Survey (ISAS) for the proposed SSA. As a result of these previous studies, a total of 2,718 archaeological sites are known to be located in the Illinois portion of the Study Area. Forty-five of these documented sites are mortuary sites, which consist of 29 possible prehistoric mound sites, nine cemeteries (three historic period American Indian and six Euro-American), and seven habitation sites with reported discoveries of one or more burials. There are also three paleontological sites in the Study Area. One of these sites is the Mazon Creek fossil site, which is listed in the NRHP.

According to the State of Illinois Model for Higher Archaeological Resource Potential, 164,892 acres of the Study Area falls within high probability areas for archaeological resources (20 Illinois Compiled Statutes [ILCS] 3440).

Within Corridors A3S2, B3, and B4 in Will County, there are high probability areas for archaeological resources, which may contain unidentified prehistoric archaeological sites. No documented archaeological sites are located within Corridor A3S2 in Will

County; however, there are several sites located in the vicinity of this corridor. The Illinois portion of Corridor B3 corresponds to the majority of the Illinois portion of Corridor B4 in Will County. Two sites, possibly prehistoric mound sites, are located just within the Corridors B3 and B4. These two archaeological resources require additional investigation to evaluate their eligibility for listing in the NRHP. This additional investigation will be conducted and coordinated with the SHPO during the intensive-level study in the Tier Two NEPA studies.

Indiana

The Indiana portion of the larger Study Area encompasses portions of Cedar Creek, Center, Eagle Creek, Hanover, West Creek, and Winfield townships in Lake County, with a total area of approximately 182,066 acres. A total of 135 previous Phase 1 cultural resource surveys have occurred within the Study Area. The majority of these surveys were undertaken for a pipeline project and they are clustered near Crown Point and Cedar Lake.

These previous surveys documented 405 archaeological sites within the Study Area. Of these, 32 are cemeteries or mortuary sites recorded in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD). The mortuary sites include 25 historic cemeteries, one prehistoric mound site, and six prehistoric burial sites. The remaining archaeological sites include lithic isolates, lithic scatters, camps, villages, and a farmstead, and represent the Paleoindian, Archaic, Woodland, and Historic time periods. Twenty-six of these archaeological sites require additional investigation to clarify their eligibility for listing in the NRHP.

Three of the documented archaeological sites, 12-La-0199, 12-La-0200, and 12-La-0201, are located within Corridor A3S2 in Lake County. These sites are described as large scatters of stone tools (12-La-0199 and 12-La-200) and an isolated stone tool (12-La-0201). Site 12-La-200 is within Corridor A3S2. These sites may represent areas of extended occupation by people in the past, but additional investigation is necessary to determine the eligibility for listing in the NRHP.

Previous research indicates that significant archaeological deposits have been identified within northwest Indiana (Schurr 2003; Surface-Evans et al. 2005; White et al. 2007). For the most part, this area is still poorly understood (Schurr 2003). However, recent research indicates that while prehistoric populations were present in the area from the Paleoindian through Contact periods (12,000 B.C. to A.D. 1700s), Late Woodland (A.D. 850 to A.D. 1100) populations most heavily utilized the Kankakee Valley and its associated drainages (White et al. 2007). In addition, archaeological evidence demonstrates that the prehistory of the Kankakee Valley is connected to adjacent areas, including the Valparaiso Morainal Complex of northern Indiana and the Wabash Valley of central Illinois and Indiana (Schurr 2003; White et al. 2007).

A preliminary investigation of Corridor A3S2 indicates that the entire alignment is located in undulating topography, and traverses several creeks, each of which appears heavily modified. The prehistoric sites previously identified within Corridor A3S2 are located across rolling agricultural hills with no distinguishing features.

Corridor B3 corresponds to the Indiana portion of Corridor A3S2; therefore, the results of the investigations for Corridor A3S2 also apply to Corridor B3 in Indiana.

No documented archaeological sites are located within Corridor B4 in Lake County. However, background research indicates that several sites are located within the area of Corridor B4. Significant sites have been identified near the eastern portions of Corridor B4, in what was once the Kankakee Marsh. Significant sites within the Kankakee Marsh are located on topographic rises consisting of sandy islands and knolls that offered high ground adjacent to the wetland environment (Surface-Evans et al. 2005). Phase II testing at five sites located approximately 2 miles north of Corridor B4 produced over 10,000 artifacts and numerous features, and each was recommended eligible for inclusion on the NRHP (Surface-Evans et al. 2005). These sites contained artifacts dating from the Late Archaic, Middle Woodland, and Late Woodland periods.

A preliminary investigation of Corridor B4 indicates that the eastern portion of the alignment is located within the prehistoric Kankakee Marsh boundaries. As a result, the topography throughout this portion of the alignment is flat, with the exception of one large landform. This landform is heavily wooded and contains numerous residential structures but it represents an elevated, well drained landform located within the prehistoric Kankakee Marsh. The western portion of Corridor B4 in Indiana contains undulating topography and traverses several creeks, each of which appears heavily modified.

A review of the 1932 archaeological map "Indiana: The Influence of the Indian upon its History..." indicates no known archaeological sites within the Study Area; however, it does depict a Sauk Trail traveling from the Illinois border to the current location of Valparaiso, Indiana, which may intersect the northern portion of the Study Area. While this map does not show any sites within Corridors A3S2, B3, and B4, this information suggests past populations traveled extensively across the area. Archaeological resources left by these populations may be present within the three corridors.

As a result of these broad ranged types of surveys, prehistoric settlement patterns are evident within the area. The majority of sites recorded in this portion of Lake County occur on small rises or uplands near water sources, including Beaver Creek, Eagle Creek, and West Creek.

3.4.5.2 Methodology

The Tier One DEIS methodology was developed in consultation with FHWA, the IDOT Cultural Resources Unit, the INDOT Cultural Resources Office, and the respective SHPOs.

Illinois

In consultation with IDOT, the ISAS provided information on known archaeological and paleontological resources, locations where there is a high probability for archaeological resources, and locations where archaeological fieldwork had been previously conducted within the Study Area in portions of Will, Kankakee, Grundy, and Kendall counties, with a total surface extent of approximately 689,403 acres. The information was based solely on records research and involved no fieldwork. Information on existing

archaeological resources was identified through records of the following: Illinois Inventory of Burial Sites (IIBS), the State of Illinois Model for Higher Archaeological Resource Potential (20 ILCS 3440), NPS, and IHPA.

Indiana

The Indiana Department of Natural Resources (Indiana DNR), Division of Historic Preservation and Archaeology (DHPA) maintains the central databases documenting cultural resources in Indiana. The Indiana State Library also has several sources for Indiana history.

The following sources were consulted to determine if there are significant cultural resources documented within the Indiana portion of the Study Area:

- National Historic Landmarks (NHL) list;
- NRHP list;
- Indiana Historic Sites and Structures Inventory (IHSSI) files;
- SHAARD;
- Cultural Resource Management reports;
- Cemetery Registry Survey files;
- County Histories and Atlas Maps;
- Archaeological Map of Indiana (Guernsey 1932);
- Illinois State Museum (ISM) Online Exhibits; and
- NPS – Indian Land Areas Judicially Established 1978 Map.

A Phase Ia report will be produced during the Tier Two NEPA studies and will include the information from the archaeological records check presented in the Tier One DEIS.

3.4.5.3 Initial Assessment of Effects

Illinois

No archaeological sites have been documented in Corridor A3S2. Two archaeological sites, possibly prehistoric mound sites, have been documented just within Corridors B3 and B4 in Washington Township. These two archaeological resources require additional investigation to evaluate their eligibility for listing in the NRHP. However, previously identified high probability areas for archaeological resources throughout Will County suggest that additional unknown prehistoric archaeological resources may be located in Corridors A3S2, B3, and B4. Additionally, Corridors B3 and B4 consist of three design concepts at IL-53, which have the potential to affect any unidentified archaeological sites within the high probability area.

Further review during the Tier Two NEPA studies will be necessary to identify archaeological resources and assess effects. FHWA will consult with the SHPOs and consulting parties regarding identification of archaeological resources and effects assessments.

Additional archaeological resources will likely be identified when field surveys are undertaken during the Tier Two NEPA studies. If significant archaeological resources cannot be avoided, additional work will be necessary to resolve any adverse effects as a result of the proposed project.

Indiana

Three archaeological sites have been documented in Corridors A3S2 and B3 (Sites 12-La-199, 12-La-200, and 12-La-201). Sites 12-La-199, 12-La-200, and 12-la-201 are located near the Illinois border within or adjacent to Corridors A3S2 and B3. These three archaeological resources require additional investigation to evaluate their eligibility for listing in the NRHP. No archaeological sites have been documented in Corridor B4. Nevertheless, the results of the records check suggests that additional unknown archaeological resources are likely located in Corridors A3S2, B3, and B4.

Unidentified prehistoric archaeological sites present in the corridors may represent a variety of time periods ranging from prehistoric Paleoindian period sites through proto-historic Native American sites. These sites may represent a variety of site types ranging from isolated artifacts to larger occupational sites. Terrace remnants, hill and/or sandy ridge features, and glacial moraines, particularly in association with drainages or other water sources, are local landforms likely to contain archaeological deposits. Sandy soils that have been reworked by wind also have the potential for buried cultural deposits.

The historic context of the area suggests that unidentified historic archaeological sites may represent a variety of activities, ranging from industrial or commercial development associated with the historic growth of northwest Indiana, the railroad industry, and agricultural or domestic activity associated with rural areas in these counties.

Some common site types that may be represented include the archaeological deposits associated with farmsteads or other residential sites, municipal buildings such as schools or churches, commercial elements such as mills, or historic dump and debris discard areas. Small unidentified historic cemeteries commonly occur in the area and may exist in the Study Area. Historic archaeological sites also tend to occur in conjunction with transportation features such as drainages, railroads, and roads; additionally, these types of transportation features may themselves have significance.

Three known archaeological resources within Corridors A3S2 and B3 (12-La-199, 12-La-200, and 12-La-201) need additional archaeological testing to evaluate eligibility for listing on the NRHP. Based on the known sites within and around Corridors A3S2 and B3, as well as the environmental context surrounding the corridors, unidentified prehistoric archaeological sites that may be present within A3S2 are not likely to be significant. While no archaeological sites have been identified within Corridor B4, the nature of the corridor as well as background research indicates that Corridor B4 has the most potential for impact to significant cultural resources. Corridor B4 is located within the former Kankakee Marsh, where archaeological sites are typically located on rises within the marsh that offered sandy islands adjacent to a resource rich environment (Surface-Evans et al 2005). Sites within the former Kankakee Marsh have produced

significant artifact collections and prehistoric features dating from the Late Archaic through the Late Woodland Periods. Unidentified prehistoric archaeological sites within Corridor B4 are more likely to be significant based on the prehistoric cultural and environmental context of the corridor.

3.4.5.4 Resolving Adverse Effects

The information available regarding archaeological resources that may be affected by the proposed project is not sufficient to determine if there would be adverse effects to significant cultural resources. Further review during the Tier Two NEPA studies will be necessary to identify archaeological resources and assess effects. IDOT and INDOT will coordinate with FHWA, SHPO, Indian tribes, and other consulting parties to develop appropriate mitigation measures if there are adverse effects.

Measures that could be used to resolve adverse effects to archaeological sites include:

- Archaeological data recovery for sites that do not require preservation in place;
- Redesign of projects to avoid direct impacts and preserve specific characteristics of cultural resources;
- Creation and implementation of maintenance and management plans;
- Transfer of historic lands to local governments and non-profit organizations;
- Donation of easements;
- Establishing historic preservation funds to support specific preservation purposes;
- Construction of museums, cultural centers, and curation facilities;
- Installation and maintenance of interpretive features;
- Public education and outreach programs;
- Burial of archaeological sites; and
- Establishing managed open space.

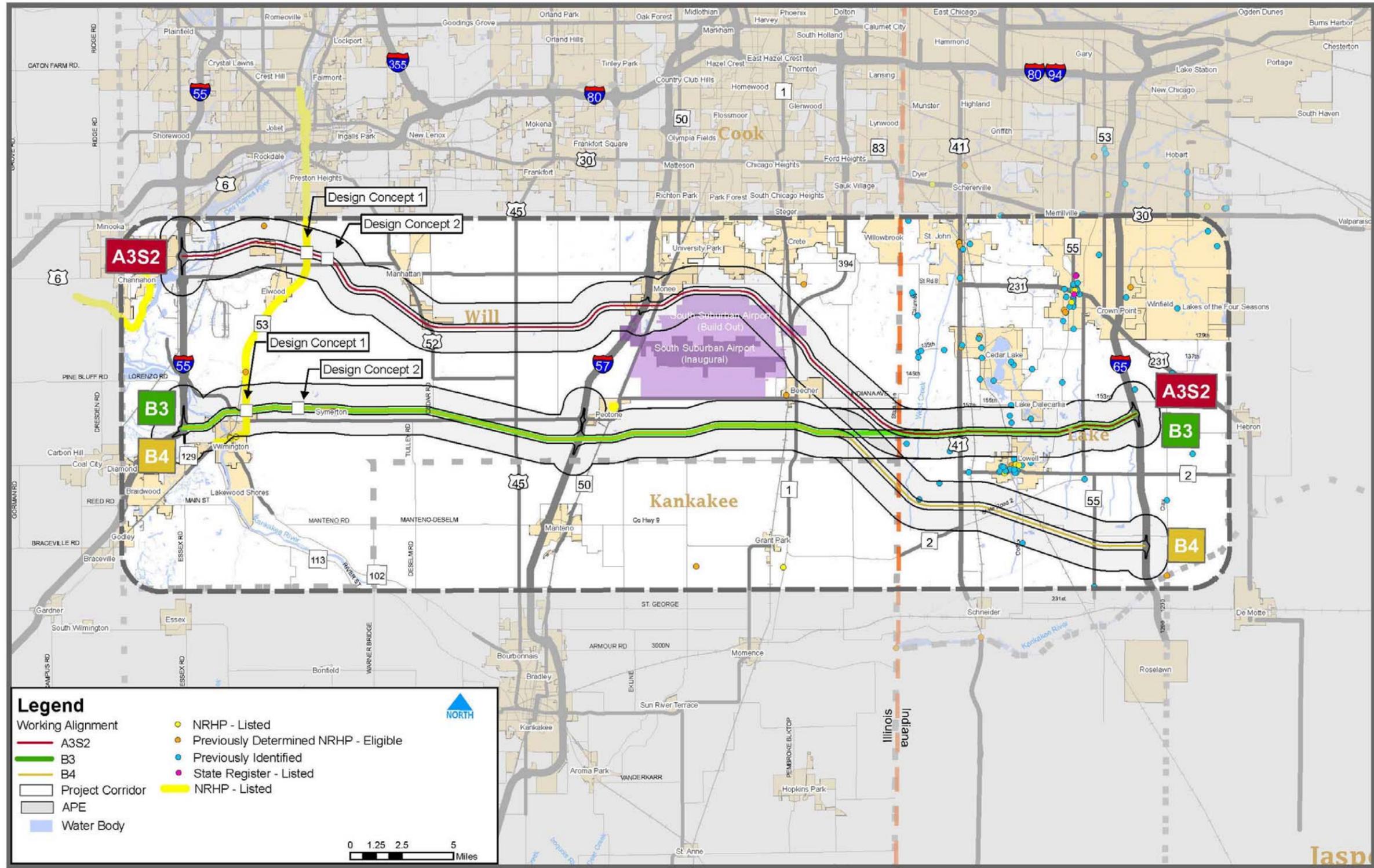
3.4.6 Historic Resources

3.4.6.1 Existing Conditions

Illinois

Within the Illinois portion of the Study Area, there are 14 known historic properties that are listed or eligible for inclusion in the NRHP (Figure 3-23). Eight of these properties are listed in the NRHP, including the Illinois and Michigan Canal NHL, and six were previously determined eligible for inclusion in the NRHP. The Corridor A3S2 APE contains the NRHP eligible Bridge over Cedar Creek carrying Patterson Road and the NRHP listed Alternate Route 66, Wilmington to Joliet (Alternate Route 66). The Corridors B3 and B4 APE contain the NRHP eligible Downtown Wilmington historic district as well as the NRHP listed properties, Alternate Route 66, and Eagle Hotel.

Figure 3-23. Built Historic Resources/Properties Identified in the Study Area



Sources
 Historic Resources: Correspondence with Thomas E. Emerson, August 1, 2011. RE: Initial Cultural Resource Assessment, Illiana Expressway – ISAS Log #110897 (Illinois Section). Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign.
 Historic Landmarks Foundation of Indiana: 1996. Lake County Interim Report. Indianapolis, Indiana.
 Indiana Division of Historic Preservation and Archaeology: 2011. Indiana State Historic Architectural and Archaeological Research Database (SHAARD). <https://secure.in.gov/apps/dnr/shaard/welcome.html>.

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In 2005, FHWA designated Alternate Route 66, which is managed by the Illinois Route 66 Scenic Byway organization, as a National Scenic Byway under the National Scenic Byways Program. This program recognizes certain roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. As a designated National Scenic Byway utilizing federal funding and a historic property, Alternate Route 66 is subject to NEPA to assess and consider the environmental impacts on the scenic byway by federally funded actions; Section 106 review as a historic property; and Section 4(f) if federally funded improvements “use” land from the historic property.

Indiana

Within the Indiana portion of the Study Area, there are 166 above-ground resources that were previously identified as 40 years of age or older (Figure 3-23 and Table 3-49). Of these, 42 resources are historic properties listed or eligible for inclusion in the NRHP. Twenty-three historic properties are listed in the NRHP and five bridges were previously determined NRHP eligible in the Indiana Historic Bridges Inventory. A review of DHPA project records revealed that 14 above-ground resources previously identified as 40 years of age or older in the IHSSI Lake County 1996 Interim Report have since been determined NRHP eligible.

Of the 166 above-ground resources in the Study Area in Indiana, 124 resources were identified in the IHSSI Lake County 1996 Interim Report and SHAARD as 40 years of age or older that may be eligible for the NRHP; however, determinations of NRHP eligibility have not been completed for these resources at this time. These resources include two State Register listed historic properties (William Barringer Brown House, 1897, not IHSSI ranked; Martin and Susan Wood House, 1872, IHSSI Number 089-142-79006, IHSSI ranked Notable), 21 cemeteries, and 101 above-ground resources 40 years of age or older. Of the 101 above-ground resources previously identified as 40 years of age or older, 99 were surveyed in the IHSSI Lake County 1996 Interim Report and two theaters were previously identified in the Theaters Survey available in SHAARD.

The IHSSI Lake County 1996 Interim Report assigned a rating of “Non-Contributing,” “Contributing,” “Notable,” or “Outstanding” to resources based on their historical significance, architectural merit, environment, and integrity. Those resources with a “Non-Contributing” rating were only included in the inventory if they were located within an existing or potential historic district. A “Contributing” rating meant the resource met the 40 years of age or older criterion but is not individually significant enough to be NRHP eligible; these resources could be considered NRHP eligible as part of a historic district. A rating of “Notable” meant the property did not merit an “Outstanding” rating, but was still above-average in its significance and could be eligible for the NRHP upon further research or investigation. A rating of “Outstanding” meant the property retained enough historic or architectural significance that it was already listed in or should be considered for individual listing in the NRHP.

Of the 99 above-ground resources previously identified in the IHSSI Lake County 1996 Interim Report that have not yet been determined eligible for listing in the NRHP, 11 were rated as “Outstanding” (seven in Center Township, two in Cedar Creek Township, one in Hanover Township, and one in Ross Township) and 88 were rated as “Notable”

Table 3-49. Above-ground Resources Previously Identified in Study Area in Lake County, Indiana

Resource Status	Total Number of Resources	Cedar Creek Township	Center Township	Eagle Creek Township	Hanover Township	Ross Township	St. John Township	West Creek Township	Winfield Township
NRHP Listed Properties	23	6	11	1	2	2	1	0	0
Previously Determined NRHP Eligible Properties	19	5	4	2	2	1	4	1	0
State Register Listed Properties	2	0	2	0	0	0	0	0	0
Cemeteries	21	2	6	0	3	2	1	6	1
Previously Identified Above-ground Resources in SHAARD (Theater Survey) ¹	2	1	1	0	0	0	0	0	0
Previously Identified Above-ground Resources in IHSSI Interim Report (Ranked Outstanding) ¹	11	2	7	0	1	1	0	0	0
Previously Identified Above-ground Resources in IHSSI Interim Report (Ranked Notable) ¹	88	24	22	0	13	14	5	4	3

¹ Previously identified above-ground resources have not yet been evaluated for NHRP eligibility, and therefore, not all resources may be historic properties.

Source: Indiana Division of Historic Preservation and Archaeology. 2011. Indiana State Historic Architectural and Archaeological Research Database (SHAARD), <https://secure.in.gov/apps/dnr/shaard/welcome.html>; Historic Landmarks Foundation of Indiana. 1996. Lake County Interim Report. Indianapolis, Indiana; National Park Service. June 2010. National Register of Historic Places, <http://nrhp.focus.nps.gov/>.

(24 in Cedar Creek Township, 22 in Center Township, 14 in Ross Township, 13 in Hanover Township, five in St. John Township, four in West Creek Township, and three in Winfield Township). These previously identified above-ground resources may be eligible for the NRHP. Further investigation and evaluation will be necessary to make formal NRHP eligibility determinations for resources located in the APE per Section 106 requirements. These investigations and evaluations will be made during the Tier Two NEPA studies and submitted to the SHPO for concurrence.

Of the known resources identified in the Study Area, the APEs for Corridors A3S2 and B3 contain no currently NRHP listed or eligible historic properties and six previously surveyed resources for the IHSSI survey. These previously surveyed resources include:

- Fuller Family Cemetery in West Creek Township (not IHSSI ranked);
- Farmstead at 11703 West 173rd Avenue, Lowell, West Creek Township (IHSSI Number 089-370-85011; IHSSI ranked Notable);
- House at 16109 Morse Street, Lowell, Cedar Creek Township (IHSSI Number 089-370-90013; IHSSI ranked Notable);
- McCarthy Cemetery in Cedar Creek Township (not IHSSI ranked);
- House at 4821 West Main Street, Lake Dalecarlia, Cedar Creek Township (IHSSI Number 089-370-91002; IHSSI ranked Notable); and
- House at 14820 Iowa Street, Crown Point, Eagle Creek Township (IHSSI Number 089-352-95005; IHSSI ranked Notable).

The Corridor B4 APE contains three previously surveyed above-ground resources for the IHSSI, which include:

- Farmstead at 19202 Calumet Avenue, Lowell in West Creek Township (IHSSI Number 089-040-85014; IHSSI ranked Notable);
- Lake Prairie Presbyterian Church at 18500 White Oak Avenue, Lowell in West Creek Township (IHSSI Number 089-370-85012; IHSSI ranked Notable); and
- Wildwood Lodge off Colfax Road, Lowell, Cedar Creek Township (IHSSI Number 089-575-90058; IHSSI ranked Notable).

There are no historic properties currently listed in or previously determined eligible for inclusion in the NRHP in the Corridor B4 APE.

3.4.6.2 Methodology

The Tier One DEIS methodology was developed in consultation with the IDOT Cultural Resources Unit, the INDOT Cultural Resources Office, and the respective SHPOs.

Illinois

Known historic properties in the Illinois portion of the Study Area were identified by IDOT Cultural Resources Unit architectural historians who meet the Secretary of

Interior's Professional Qualifications Standards based on existing cultural resources data for historic properties listed or eligible for inclusion in the NRHP. In consultation with the IDOT Cultural Resources Unit and Illinois SHPO, the following databases were consulted to identify existing historic resources: NPS records (which include NRHP and NHL listings) and IHPA records.

Indiana

For the Indiana portion of the Study Area, architectural historians who meet the Secretary of Interior's Professional Qualifications Standards conducted database and records searches to identify known historic properties listed or eligible for inclusion in the NRHP as well as previously identified above-ground resources 40 years of age or older. The following sources were consulted: DHPA project records, NPS records (which include NRHP and NHL listings), Indiana Register of Historic Sites and Structures (State Register), SHAARD, IHSSI Lake County 1996 Interim Report, and the INDOT Historic Bridges Inventory. When the *IHSSI Lake County Interim Report* was completed in 1996, it identified above-ground resources that were at least 40 years old at that time; therefore, it is possible that resources that turned 50 years old in 2005 or later may now be eligible for the NRHP. The IHSSI Lake County 1996 Interim Report has not been updated since its completion and, as a result, the existing historic resources data is incomplete.

Field surveys will be conducted during the Tier Two NEPA studies to identify any above-ground resources more than 45 years of age located in the APE that were not previously surveyed or evaluated for NRHP eligibility and identified in the Tier One database and records searches. Additional historic properties will likely be identified when these field surveys are undertaken. The additional surveys, determinations of eligibility, and effects assessments will be conducted and coordinated with the SHPOs during the Tier Two NEPA studies when the working alignments are refined. To establish a framework for the Tier Two Section 106 studies and consultation, FHWA has determined that a Programmatic Agreement (PA) will be prepared in consultation with the ACHP, SHPOs, IDOT, and INDOT for inclusion in the Tier One Final Environmental Impact Statement (FEIS). The PA will describe the studies and consultation undertaken in Tier One and outline the Tier Two Section 106 methodology. As part of the Tier Two NEPA studies, previously evaluated properties will be surveyed to determine if prior determinations of eligibility remain valid. Formal eligibility determinations will be submitted to the SHPOs for concurrence on any resources ultimately determined to be in the APE. All work will conform to established Section 106 and SHPO reporting standards.

3.4.6.3 Preliminary Assessment of Effects Methodology

If historic properties listed or eligible for inclusion in the NRHP are within the proposed project's APE, the next step in the Section 106 process is to determine whether the project would have an effect on any of these properties. The NRHP listed or eligible properties that may be affected, the type of potential effect, and the potential effect finding will be identified and documented in the Tier One NEPA studies. This assessment is only a preliminary effort and is not a comprehensive effects assessment as required under Section 106, which will be undertaken in the Tier Two NEPA studies.

Preliminary effects assessments are based on the criteria of adverse effect as defined in 36 CFR 800.5, "Assessment of adverse effects." According to this portion of the regulations, the criteria of adverse effect are defined as follows:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or cumulative.

Examples of adverse effects are identified in 36 CFR 800.5 and include, but are not limited to, the following:

- Removal of the property from its historic location (historic and archaeological);
- Physical destruction of or damage to all or part of the property (historic and archaeological);
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance (historic and archaeological);
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features, such as historic properties within the noise impact area;
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Following the 36 CFR 800.5 guidelines and the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, the following categories of findings were used to assess effects to historic properties:

No Historic Properties Affected: An undertaking may be determined to have no effect to a historic property present in the APE if it would not alter any aspects of integrity for that historic property.

No Adverse Effect: An undertaking may be determined to have no adverse effect to a historic property if the undertaking would alter a specific aspect of integrity for that historic property but the effect would not alter a characteristic that qualifies that resource for inclusion in the NRHP in a manner that diminishes the significant aspect of integrity.

Adverse Effect: An undertaking may be determined to have an adverse effect to a historic property if the undertaking would alter a characteristic that qualifies that historic property for inclusion in the NRHP in a manner that diminishes the significant aspect(s) of integrity. Adverse effects can vary from demolition of the historic property to a visual effect that alters its setting but does not physically impact it. The historic property is lost forever if the project requires its demolition, whereas a change in setting, though adverse, does not remove the historic property.

3.4.6.4 Initial Assessment of Effects

The proposed project's effects on historic properties listed or previously determined eligible for inclusion in the NRHP in the APE were evaluated. This assessment is only a preliminary effort and is not a comprehensive effects assessment as required under Section 106. The ability to evaluate effects during this phase is limited because project details have not been developed and not all historic properties have been identified; however, it is possible to make preliminary assessments regarding adverse effects.

Section 4(f) of the U.S. Department of Transportation Act of 1966 also applies to historic properties and is addressed separately in Section 3.14 of the Tier One DEIS.

Illinois

In Illinois, the Corridor A3S2 APE contains the NRHP eligible Bridge over Cedar Creek carrying Patterson Road, which is located approximately 0.77 miles north of the working alignment within the corridor. The Corridors B3 and B4 APE contain the NRHP listed Eagle Hotel (located approximately 1.22 miles south of the working alignments within Corridors B3 and B4) and the NRHP eligible Downtown Wilmington historic district (located approximately 1.12 miles south of the working alignments within Corridors B3 and B4).

Corridors A3S2, B3, and B4 all cross the NRHP listed Alternate Route 66 (also known as IL-53) and include three design concepts at this intersection to avoid, minimize, or mitigate potential adverse effects (see Figure 3-23). Corridor A3S2 Design Concept 1 consists of a direct interchange at IL-53 near that road's intersection with West Noel Road; Design Concept 2 consists of an interchange approximately 1 mile east of IL-53 at South Rowell Road; and Design Concept 3 contains no interchange at IL-53. Corridors B3 and B4 Design Concept 1 consists of a direct interchange at IL-53 at that road's intersection with River Road; Design Concept 2 consists of an interchange 2.5 miles east

of IL-53 connecting Peotone and Arsenal Road; and Design Concept 3 contains no interchange at IL-53.

All three working alignments within the corridors and design concepts have the potential to cause adverse effects to Alternate Route 66. The proposed project may introduce visual elements that diminish the integrity of the property's significant historic features and may change the character of the property's setting that contributes to its historic significance. Although the working alignments within the Corridors A3S2, B3, and B4 would likely have no direct impact to the Bridge over Cedar Creek carrying Patterson Road, the Eagle Hotel, or the Downtown Wilmington historic district, the working alignments still have the potential to cause adverse effects due to the introduction of incompatible visual, atmospheric, and/or audible elements that may indirectly diminish the integrity of these historic properties.

Indiana

In Indiana, Corridors A3S2 and B3 APEs contain six previously identified above-ground resources and no currently NRHP listed or eligible historic properties. The Corridor B4 APE contains three previously identified above-ground resources. These previously identified above-ground resources in the APEs of Corridors A3S2, B3, and B4 are discussed in Section 3.4.6.1. The nine previously identified above-ground resources in Lake County require additional research to evaluate their eligibility for listing in the NRHP; the additional research will be completed during the Tier Two NEPA studies. If these resources are determined eligible for listing in the NRHP, then the proposed project's effects to these properties will be assessed at that time.

The proposed project's potential to adversely affect NRHP listed and NRHP eligible historic properties, and any other historic properties that have not yet been identified, will be further assessed during intensive-level study in the Tier Two NEPA studies.

3.4.6.5 Resolving Adverse Effects

Findings of adverse effect to historic properties require efforts to resolve those effects by developing and evaluating alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects. Additional historic properties will likely be identified when field surveys are undertaken during the Tier Two NEPA studies. If these properties cannot be avoided, additional consultation will be necessary to resolve any adverse effects as a result of the proposed project. During Tier Two NEPA studies, FHWA will consult with the SHPOs and other consulting parties to develop further measures and responsibilities to avoid, minimize, and/or mitigate adverse effects to historic properties.

Specific measures to avoid adverse effects will be developed during the Tier Two NEPA studies. Measures that have been used to successfully resolve adverse effects to historic properties include:

- Shift or move the working alignments within the corridors to avoid impacting the historic property;

- Rehabilitation, restoration, and adaptive reuse of buildings and structures;
- Demolition and removal of properties that do not contribute to the cultural significance of an area;
- Redesign of projects to preserve specific characteristics of cultural resources;
- Relocation of buildings and structures;
- Creation and implementation of maintenance and management plans;
- Transfer of historic lands to local governments and non-profit organizations;
- Donation of easements;
- Establishing historic preservation funds to support specific preservation purposes;
- Construction of museums, cultural centers, and curation facilities;
- Installation and maintenance of interpretive features;
- Public education and outreach programs;
- Intentional and monitored deterioration; and
- Establishing managed open space.

3.5 Air Quality

The proposed Illiana Corridor would result in changes to the physical configuration of the area's roadway network and affect traffic conditions on heavily traveled roadways and congested intersections. Air quality, which is a general term used to describe the pollutant levels in the atmosphere, would be affected by these changes. The purpose of the Tier One DEIS air quality analysis is to determine whether project related traffic conditions would have the potential to result in air quality changes. Site specific impacts, such as microscale analyses, will be evaluated in the Tier Two NEPA studies.

The project's impact on climate change is also addressed in this section as well as mitigation actions recommended to minimize the influence of the project on greenhouse gas (GHG) emissions.

3.5.1 Relevant Air Pollutants for Analysis

The following air pollutants, known as criteria pollutants, have been identified by the US Environmental Protection Agency (USEPA) as being of concern nationwide: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). Ambient concentrations of CO and O₃ are predominantly influenced by motor vehicle activity; NO₂ is emitted from both mobile and stationary sources; emissions of SO₂ are associated mainly with stationary sources; emissions of particulate matter (PM) are associated with stationary sources, and to a lesser extent, diesel fueled mobile sources (heavy trucks and buses); and Pb emissions, which historically were principally influenced by motor vehicle activity, have been substantially reduced due to the