

3.17.4 Mitigation

Conditions that have been identified along the corridors that may require mitigation during construction include weak and compressible soils, expansive soils, and seismicity. The direct impacts associated with these conditions could be mitigated through several standard techniques and with a facility designed to conform to the IDOT and INDOT Standard Specifications for Road and Bridge Construction.

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 project and potential opportunities for avoidance will be considered.

Expansive soils and bedrock could be mitigated at structure locations by designing deep foundation systems, such as driven H-piles or drilled piers, rather than on shallow foundations. Structural retaining walls, such as soil nail walls, ground anchors, mechanically stabilized earth walls, cantilever walls, or reinforced soil slopes may be built to stabilize slopes, steep gradients (e.g., 3 horizontal to 1 vertical), or where potential slope failures may occur due to the presence of water and loose material. Expansive subgrade soils under pavement sections could be stabilized with chemicals (e.g., lime), removed and recompacted, or removed and replaced with imported structural fill of better quality. Future planning efforts in the Tier Two NEPA studies will include more detailed assessment of the extent to which these conditions exist and better characterize necessary and appropriate mitigation measures.

Potential impacts of the proposed project on the local production capacity of rock for aggregate, asphalt, and concrete and the economic benefits to the local resource companies will be completed during the Tier Two NEPA studies. To assess impacts on the local and regional availability of aggregate and identify any concerns regarding resource depletion, the projected aggregate resource needs for the proposed project will be quantified. The analysis will consider changes in demand due to continued population growth in the Region as well as potential planned expansion of existing mines or development of new mines.

3.18 Visual Resources

This section assesses the existing visual conditions of regional landscapes in the Study Area and discusses qualitative impacts to potential viewers of the corridors. Mitigation strategies to be considered during project design and implementation are also discussed.

3.18.1 Existing Conditions

The Study Area is a mix of landscapes, including urban and suburban development, rural communities, farmland, industry, transportation infrastructure, and vast areas of open space. Two distinct regional landscapes were categorized within the Study Area: the Grand Prairie and the Upper Illinois.

3.18.1.1 Regional Landscape: Grand Prairie

The predominant land use in the Study Area is agriculture (77 percent in Will County and 88 percent in Kankakee County, Illinois, and 60 percent in Lake County, Indiana), with farmsteads and several rural communities scattered throughout the landscape. The topography is a combination of gently rolling hills and flat terrain. Elevation in this landscape ranges from about 680 feet to about a high of 830 feet near Monee, Illinois.

Along a majority of the corridors, much of the landscape is open with extensive views of rural, agricultural land. Smaller areas of woody vegetation can be seen near homes and farmsteads, along the many creeks and streams in the area, or serving as windbreaks at field boundaries.

The landscape crossed by the corridors is bisected by several north-south roads including I-57, several US highway and state routes, a number of railroads, and many high-tension transmission lines. The majority of this landscape is located in Illinois. The Indiana portion of the Study Area is more varied in topography with scattered woodlands and hills present in the northern section of Lake County, Indiana, and woodlands and farmland in the south.

The Grand Prairie in the vicinity of the corridors features a mix of communities; to the west in Illinois from suburbanizing residential communities near Wilmington, Manhattan and Monee, small farm towns such as Peotone in the central portion of the Study Area, and more scattered rural residential areas in Lake County, Indiana, to the east. The communities typically contain a mix of residential, commercial, and industrial land uses at differing scales. In addition, there are scattered pockets of light industrial sites and warehouse development that can be seen amid the farmland.

The corridors in Indiana cross more varied topography and gently rolling hills in the eastern portion of the Study Area, with more prominent vegetated areas lining major roads or scattered throughout (Figure 3-47). Farming is prevalent, and trees offer visual breaks in the flat, extensive cropland, especially south and outside the corridors on lands that were once part of the Grand Kankakee Marsh.

Figure 3-47. Grand Prairie Regional Landscape – Eastern Lake County, Indiana



Source: Parsons Brinckerhoff, May 2012.

Several designated land management areas in the immediate vicinity of the corridors contribute to the character of the Grand Prairie. Most notably, the Midewin National Tallgrass Prairie typifies the overall prairie landscape. This USFS facility was established after the abandonment of the previous Joliet Arsenal facility by the US Department of Defense. Created in 1996, the 20,000 acres once used for military production and farming are being returned to a more native landscape condition. The Midewin National Tallgrass Prairie is a combination of gently rolling hills and flat terrain. Once restored to a natural prairie, this facility is anticipated to be of high visual quality.

Several other public lands are found in the western and southern portion of the Study Area and are located near the corridors. The DPSFWA is a significant natural area west of, and adjacent to, the Midewin National Tallgrass Prairie, though it is bisected by I-55 and the UPRR. This state facility abuts the Kankakee and Des Plaines rivers. In this vicinity, much of the land is floodplain and has created a visually attractive area combining forested areas with flat or gently rolling meadows. Similarly, in the southwest portion of the Study Area, the 4,000-acre Kankakee State Park is a nearly 11-mile long linear park encompassing the Kankakee River. Finally, west of the Kankakee River are a number of smaller state-owned natural areas and parks, which contribute to the more natural appearance of this landscape.

3.18.1.2 Regional Landscape: The Upper Illinois

Water resources play an important role in defining the Upper Illinois regional landscape. Near the western limits of the Study Area, the corridors cross two major rivers: the Des Plaines River to the north and the Kankakee River to the south. Corridors A3S2 and B3 are in proximity to two major lake complexes to the east, Cedar Lake (Hanover and Center townships, Lake County, Indiana) and Lake Dalecarlia (Cedar Creek Township, Lake County, Indiana). These resources add visual interest and variety in contrast with agricultural lands seen throughout much of the Study Area. Elevation in this landscape ranges from about 490 feet at the southwest end to about 730 feet in the east end of the corridors. Cedar Lake and Lake Dalecarlia are slightly higher in elevation than the rivers in the larger Study Area, with elevations from 620 feet to 780 feet.

The Des Plaines River joins the Kankakee River in the northwest corner of the Study Area, near Channahon, Illinois, creating the Illinois River at their confluence. The Kankakee River meanders southeast and then east-west through Kankakee County, Illinois, south of the Study Area (Figure 3-48). The watershed extends into Lake County, Indiana, with remnants of the Grand Kankakee Marsh located at the southeast end of the Study Area.

Within the corridors, the Des Plaines and Kankakee rivers create a landscape that is visually attractive at the western end of the Study Area. Corridor A3S2 ties into I-55 on the east side of Channahon, Illinois, at Bluff Road. It would potentially cross the Des Plaines River about 1 mile east at the northern edge of an industrial site. This area has been used by the US Department of Defense and has little development although industrial uses are nearby. Corridor B3 crosses the Kankakee River near Wilmington, Illinois, where larger residential lots line the river.

Figure 3-48. Upper Illinois Regional Landscape – Kankakee River at I-55



Source: Parsons Brinckerhoff, May 2012.

In the eastern portion of the Study Area, Corridors A3S2 and B3 pass between Cedar Lake and Lake Dalecarlia in Lake County, Indiana. The area has long attracted residential development, first with summer retreats bordering the lakes, and now with rural, non-farm development, which is scattered throughout this regional landscape. The lakes' substantial residential development makes them less visually accessible to viewers other than residents.

In the southwest corner of the Study Area near Braidwood, Illinois, there are a number of small, man-made linear lakes that are remnants of previous strip coal mining. Residential development has capitalized on this interesting landscape, and homes now line the edges of these small lakes. Development somewhat limits the contribution of these lakes to the visual quality of the area.

3.18.2 Methodology

The analysis of the visual setting within the Study Area is based on guidelines established in the *Visual Impact Assessment for Highway Projects* (FHWA, 1981). For this analysis, areas of differing visual character in the corridors were identified as landscape units and their visual quality was determined by using four criteria: uniqueness, vividness, intactness, and unity.

While these criteria somewhat overlap and are subjective, they serve as tools through which a pattern of visual quality for each landscape unit can emerge. Based on these criteria, regional landscapes were identified to better assess existing conditions and potential impacts to visual resources in the Study Area.

The guiding considerations for the assessment of visual impacts are the activity, number, and preference of those who reside in or pass through the Study Area. By

understanding the issues related to viewer groups, the response to changes in the visual environment can be more fully understood.

Viewers in the Study Area were categorized into the following groups based on their activities, lifestyles, and/or purpose for being in the Study Area:

- Rural residents living on farms, in unincorporated rural areas, or on large lots adjacent to or near the corridors;
- Suburban or city residents who live in subdivisions or communities at the edges of developed areas adjacent to or near the corridors;
- Other residents who live outside the viewshed of the project but may view the project in regular travel through the Region, or from their place of employment; and
- Non-residents who visit the areas for a limited time on an irregular basis.

These users are sensitive to changes in the visual environment, although to different degrees. Sensitivity to change is generally proportionate to the amount of "ownership" a group has for an area. "Ownership" refers to a combination of either financial investment in the land or emotional investment in the scenic quality. It is likely the sensitivity to change would more or less follow the above ranking of the viewer groups with rural residents being most sensitive and a non-resident, occasional visitor being least sensitive to change. The corridors are assessed using a defined buffer and in consideration of the viewer groups described.

The criteria used for evaluating the working alignments for Corridors A3S2, B3, and B4 from the various viewers' points-of-view are based on the established FHWA guidelines. These criteria include:

- How well the working alignments follow the natural terrain of the area.
- If the working alignments minimally impact natural and cultural features.
- How the working alignments impact areas of high visual quality.
- What are the working alignments impact in areas of viewer sensitivity.
- If the working alignments create viewing opportunities.

In subsequent phases of design, viewing opportunities will be considered in developing more defined design characteristics of the working alignments within the corridor(s), which will be carried forward to the Tier Two NEPA studies.

3.18.3 Impacts

Impacts to visual and aesthetic resources along the working alignments within Corridors A3S2, B3, and B4 would be somewhat different based on their location in the Study Area. Impacts would result from changes to the terrain, and natural and/or cultural features that would have a long-term impact on the visual environment.

3.18.3.1 Corridor A3S2

The working alignment within Corridor A3S2 begins in the upper northwest corner of the Study Area at the Bluff Road exit from I-55 and proceeds in a primarily southeast direction toward Indiana. The working alignment within Corridor A3S2 begins near existing industrial properties, crosses the Des Plaines River, and enters an area that is rapidly developing as a major intermodal transportation hub. The intermodal facilities include numerous warehouses and a new UPRR rail intermodal facility north of the working alignment. From there, the working alignment travels north of Elwood, Illinois, through agricultural land dotted with farm homes and rural housing development, bypassing Manhattan, Illinois, and Monee, Illinois, to the south before turning southeast and merging with the working alignment within Corridor B3 just east of State Line Road.

There are two design concepts for an interchange just north of Elwood. Design Concept 1 is proposed at IL-53, about a tenth of a mile north of West Noel Road, which is a residential street with homes abutting farmland. This portion of IL-53 is historic Alternate Route 66, which is listed on the NRHP. An interchange at this location would be visible to the nearby residents and users of IL-53. Design Concept 2 is proposed at South Rowell Road, 1 mile east of IL-53. This option is amid agricultural land and views would be similar for Design Concept 1, though less visible to residents and those motorists travelling on IL-53.

The visual impacts of this working alignment vary, based on location. From Elwood to Manhattan, the land is mostly flat and agricultural. However, there are pockets of rural residential development near the working alignment that would be have direct views of the alignment, given the generally flat and open terrain (Figure 3-49).

Figure 3-49. Rural Residential in Western Will County, Illinois, near the Working Alignment within Corridor A3S2



Source: Parsons Brinckerhoff, May 2012.

Near Monee, the working alignment within Corridor A3S2 would pass through existing residential lands found on either side of I-57. This area has some rolling hills and is close to a FPDWC facility and the Monee Reservoir, making it attractive for residential use and travelling visitors. Residents of the area would be negatively impacted by this working alignment.

Further east, the land flattens slightly and returns to agricultural use, with scattered residential developments very close or nearby to the working alignment within Corridor A3S2, especially near Beecher, Illinois. In this open terrain, views would be more extensive and the facility more apparent to local residents. As the working alignment merges with the working alignment within Corridor B3 just east of State Line Road, the ComEd transmission lines become visible.

Impacts in the section from State Line Road to I-65 would be most apparent to rural residents, particularly in the residential area adjacent to West Creek, near Lake Dalecarlia and along SR 55. The pockets of farmland between these areas would be less impacted given the dispersed number of residents and interrupted views from scattered woodlands and rolling terrain. In this area, the working alignment within Corridor A3S2 parallels an existing ComEd electric transmission line, though to a lesser extent than in Will County, Illinois. The working alignment within the corridor parallels the transmission line for 4 miles of the approximately 11 miles in Indiana. At the furthest point, the working alignment within the corridor is about 0.85 miles from the transmission lines.

3.18.3.2 Corridor B3

Corridor B3 would traverse the middle of the Study Area, which is primarily agricultural land. Other land uses include scattered rural housing, small lakes and streams, and natural areas that are most prominent at the west end of the corridor near Wilmington, Illinois, and in Lake County, Indiana, between the state line and I-65.

Visual impacts vary based on the location of the working alignment within Corridor B3. More substantial visual impacts would potentially result in the west end of the corridor. The proposed crossing of the Kankakee River would alter the viewshed in this location, although the working alignment within Corridor B3 follows an existing 345kV ComEd transmission line across the waterway, which means that the existing viewshed is already diminished. IL-53 and historic Alternate Route 66 would also be crossed by the working alignment within Corridor B3. The potential for adverse effect to these properties, and any that are potentially eligible for listing in the NRHP, will be evaluated as part of the Tier Two NEPA studies.

Proceeding east, three interchange options in the vicinity of historic Alternate Route 66 are being considered either for crossing or connecting to this state trunkline. Design Concept 1, which incorporates a full interchange at the intersection of the working alignment within Corridor B3, IL-53/historic Alternate Route 66 and River Road, would have the greatest visual impact. To accommodate the new interchange and additional traffic, IL-53 would need to be widened. Ramp terminals intersecting with historic

Alternate Route 66 would be required north and south of the overpass. Residential development near the southeast quadrant of the interchange would also be in close proximity to the facility.

Design Concept 2 would move the interchange further east approximately 2.5 miles, connecting with South Arsenal and Peotone roads. This option locates the interchange in active farmland, reducing visual impacts to motorists traveling historic Alternate Route 66 but in closer proximity to rural residences located along South Indian Trail. The new local road connector would terminate near an existing industrial facility at South Arsenal Road at the north and in the vicinity of farmland at Peotone Road.

Design Concept 3 would result in the least visual change of the design concepts being considered. This design concept would only require an overpass bridging the working alignment within Corridor B3 over IL-53 and historic Alternate Route 66.

Further east in central Will County, the land is mainly agricultural with scattered farmsteads and rural residences. The working alignment within Corridor B3 would create a visually apparent change in the setting in the immediate vicinity of the working alignment for nearby residents, while contrasting more substantially from the rural local roads that currently provide access through much of the area. Peotone, Illinois, which is outside of the working alignment within the corridor, would be visible from working alignment within Corridor B3, as the distances between the two is approximately 1.4 miles.

The working alignment within Corridor B3 would parallel the ComEd transmission line within 2,000 feet for over half its length (17 miles out of the approximately 35 miles) in Illinois, and within 2,250 feet for an additional 3.5 miles (Figure 3-50).

Figure 3-50. Approximate Location of Working Alignment within Corridor B3 in Eastern Will County, Illinois



Source: Parsons Brinckerhoff, May 2012.

The working alignment within Corridor B3 is the same as the working alignment within Corridor A3S2, just east of State Line Road. Impacts in the Indiana portion of this corridor were previously discussed as part of the working alignment within Corridor A3S2.

3.18.3.3 Corridor B4

The working alignment within Corridor B4 shares a large portion of its location with the working alignment within Corridor B3. The working alignment within Corridor B4 splits from the working alignment within Corridor B3 just east of South Cottage Grove. At that point, the working alignment within Corridor B4 leaves the working alignment within Corridor B3 and turns southeast, connecting to I-65 about one-half mile south of E 205th Avenue. This discussion focuses on the visual impacts from the separate working alignment within Corridor B4 from the split in eastern Will County, Illinois to I-65.

The area along the working alignment within Corridor B4 is more rural than any of those discussed previously. In Indiana, there are fewer continuous through-roads, resulting in larger fields. The southern portion of the alignment in Indiana also passes through remnants of the Grand Kankakee Marsh, where the land offers prime farming opportunities. Some roads are gravel, and agricultural and undeveloped land dominates the landscape. There is less residential development, reflecting the area's agricultural history, although there are scattered farm and non-farm homes along the roads or in small clusters.

The scattered farming and rural residents immediately adjacent to or near the working alignment would experience a greater impact than those located farther away from the working alignment, where the facility is generally located at grade. A more detailed assessment of potential impacts of the working alignment within the corridor(s) carried forward into Tier Two will be presented during the Tier Two NEPA studies.

3.18.3.4 Working Alignments Impact Summary

For the working alignment within Corridor A3S2, adverse impacts would be most apparent to existing residential property owners throughout the northern portion of the working alignment within the corridor in Illinois. The area is characterized by occasional development, though views are generally open and uninterrupted in absence of extensive relief or vegetation.

Most of the adverse visual impacts would occur in the Grand Prairie because of the more open terrain and the several public lands crossed in the western portion of the working alignment within Corridor B3. This landscape is less populated and seen by fewer residents, while views from the working alignment within would be seen in the context of existing transmission lines paralleling within one-half mile. With the working alignment within Corridor B4, adverse impacts would be more visible in the open and flat terrain, though experienced by fewer residents.

Measures to minimize impacts of the corridor to the visual quality of the Study Area would include several planned project design elements. Context sensitive solutions (CSS)/design would be applied to this project. In addition, mitigation approaches will be a part of the working alignments evaluated in the Tier Two NEPA studies.

3.18.4 Mitigation

Several design guidelines may be considered during project design and implementation, to mitigate as many visual impacts as possible. The guidelines include:

- Shaping the land at the edges of grading to smooth the transition to existing grades.
- Designing structures and interchanges with a unified appearance.
- For historic Alternate Route 66, markings, signage, pavement type, and color will fit with existing conditions.
- Developing a stormwater treatment system in both a functional and aesthetic manner.
- Re-vegetating the working alignment within corridor rights-of-way, including the use of native vegetation.
- Supporting the establishment of local land use and sign controls at interchanges.
- Maintaining a narrow median 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 other travelers.

These guidelines may be applied and specific design elements developed and refined as part of the Tier Two NEPA studies. Stakeholder input will continue as an important consideration in the development of such CSS design features.

3.18.4.1 Bridges and Interchanges

Given the dominance of the gently rolling/ flat and open terrain of the Study Area, bridges and interchanges would be the most visually apparent elements of the proposed project. These features would be designed and unified in appearance for motorists passing through the area, and for those viewing the road from lands adjoining the proposed project. These design features would be similar to existing bridges and interchanges in the Study Area, as seen in the west along I-55, in the central part of the Study Area along I-57, and to the east along I-65.

3.18.4.2 Landscape Enhancements

With any construction, the need to replace trees and other native vegetation is important. Policies established by the IDOT and INDOT will be followed to ensure that areas impacted by the working alignment will be mitigated per each departments' guidelines.