

General Impacts

During construction of the Project, the rural setting and the scenic integrity of visually sensitive sites near the line may be impacted due to increased construction-related traffic, noise, dust, brightly colored signage, and the increased number of people coming to the area. Large cranes and/or helicopters are typically used during the construction of transmission lines, creating an increased temporary disturbance in the visual, aesthetic, and peaceful nature of some areas; however, these are short-term disturbances and would cease when construction ends.

Over the long term, the transmission structures, and to a lesser extent the conductor, would become a new piece of industrial infrastructure added to the visual character of the area the line occupies. Any impacts to the overall character of the area would last for the life of the line and would vary by land type and viewer. The following section provides a discussion of the differences in potential visual impacts between the Alternative Routes.

Alternative Route Comparison

Segment I

The most visible portion of the Project in Segment I would be the crossing of the Mississippi River itself. Structures at the river would be significantly taller than structures anywhere else on the line in Illinois and would likely be lit to meet Federal Aviation Administration requirements. Although the river is lined by forest cover, the height and lighting of the structures would be visible above the tree line and likely visible for several miles. Because both Alternative Routes cross at the same location, neither would be any more or less visible at this location.

Alternative Routes A and B diverge immediately after the river crossing, heading eastward along two different but parallel paths separated by 0.5 mile. After approximately 5 miles, the two lines diverge, with Alternative Route B turning due south, while Alternative Route A follows along its original due east trajectory through the floodplain and into the bluffs. Just over a mile to the east of this divergence, Alternative Route A crosses over the existing Ameren 115 kV line, that runs from northwest to southeast parallel to U.S. 96, passing just over a half mile south of New Canton. Structures at the crossing of this existing transmission line will need to be tall enough to safely pass over the existing line and would therefore likely be more visible from the small community of New Canton. The town hosts one historic site, the Massie Variety Store, which is within 1 mile of this crossing location, but with relatively flat terrain and the many buildings in between the store and the crossing, it is not likely that the line would be viewable from this resource. Alternative Route A crosses the Great River Road just east of the Ameren 115 kV line crossing. Views from the road at this location are long and broad owing to the flat expanse westward and limited tree cover. However, views at this location are already impacted by the existing lattice Ameren line and would be transient as the viewer travels along the road.

Alternative Route B turns due south from the point of divergence from Alternative Route A continuing along that trajectory for 1.5 miles before turning due east and following along parcel boundaries to the bluffs approximately 3.5 miles to the east. The turn south along the west side of 220th street would result in the line being more conspicuous to travelers along the Great River Road at this location; however, the existing Ameren 115 kV lattice structures and line run roughly parallel to the road in this area and would be in the foreground of these views, limiting the overall impact of the new line on the current visual character. Alternative Route B heads due east along the north side of 230th Ave, continuing along parcel boundaries into the bluffs crossing over the Ameren 115 kV line approximately 0.4 mile before reaching the bluffs. Similar to Alternative Route A, structures at the crossing of this existing transmission line will be taller and therefore more visible to travelers on the Great River Road; however, Alternative Route B is much farther from the Town of New Canton, and this crossing point is 3 miles southeast of the town and would not likely be visible.

Both Alternative Route A and B cross into the forested bluffs above the floodplain roughly perpendicular to the toe of the bluff slope. Alternative Route A angles to the southeast upon entering the bluffs to parallel a small existing transmission line (wood “H” frame type) for approximately 1.8 miles, continues east across forest lands (not on existing parcel boundaries) for another 1.5 miles before turning due south to meet up with the Alternative Routes in Segment 2. Alternative Route A is close to several existing homes along this trajectory upon entering the bluffs, at the crossing of County Highway 13 and while paralleling the existing transmission line (however, current views include the existing line). In addition, Alternative Route A also crosses in proximity to a potential future home site along the bluff ridge line. This site was identified by a local landowner at the public meetings who had recently constructed a driveway to the site in the last year. Although the timing of construction of the home is not known at this time, the driveway up to the ridge was developed to ultimately support that purpose.

Alternative Route B continues along parcel boundaries due east to its connection point with the Alternative Routes in Segment 2. Its path comes close to two homes—the first at the toe of the bluff slope along Highway 96 and the second farther into the bluffs along 265th Street. In general, the residential density through this area is less than that farther north and near the Town of New Canton and forest cover and topography would limit viewshed impacts to small localized areas.

In summary, Alternative Route A is closer to New Canton and El Dara where it will require taller structures to cross the existing 115 kV line and has more homes in proximity (including a planned future home site) than Alternative Route B. Although Alternative Route B parallels Great River Road for a short distance, increasing the duration for recreational viewers, the presence of the existing line in the foreground would partially mitigate these impacts. Taken

together, the two routes would have similar impacts, but Alternative Route B would likely have less impact on visual resources than Alternative Route A.

Segment 2

Segment 2 begins in the more heavily forested hills and valleys indicative of the area between the Mississippi and Illinois Rivers, passes through the heavily farmed floodplains of the Illinois River, and grows steadily more agricultural as the route continues east toward I-55.

Alternative Routes through Segment 2 generally either follow: a northern path that runs just south of Pittsfield, north of Roodhouse, and just south of Virden (Alternative Route C); a southern path that runs south of White Hall, just north of Camp Bun, and south of Girard (Alternative Routes F and G), or a combination of the two (Alternative Routes D and E).

None of the Alternative Routes in Segment 2 are close to major public developed recreation resources, the lengths of the routes are generally similar, and none parallel existing infrastructure. The primary differences between the two routes, with respect to factors that relate to the potential for visual impacts, is their proximity to homes, proximity to small communities, relative land use proportion, and crossings of the designated scenic Route 66.

The Alternative Routes on the northern portion of Segment 2 have a greater proportion of agricultural lands, with more frequent, long and broad views that are more easily impacted by new vertical infrastructure (less visual absorption capacity). In contrast, Alternative Routes on the south have more variable topography and more contiguous forest areas both of which limit the length and breadth of views and provide natural screening. In these areas, the impact of the transmission line would be less visible and views would be more transient. Alternative Routes that are on the north for the first half of the segment have both more broad views and are near more small towns than those on the south. At the same time, the southernmost routes, Alternative Routes F and G, are close to more homes (11 within 500 feet) when compared to the northern routes, most notably the most northern route, Alternative Route C (8 residences within 500 feet). Thus, although the northern routes have more frequent long broad views and are generally closer to more communities, the southern routes are more frequently close to individual homes.

Several historic and potentially historic properties fall within the viewshed of the Alternative Routes to the south through this segment. The Scott Lyman House (listed on the National Register), on the outskirts of Summer Hill, is approximately 1 mile from Alternative Routes F and G. Given the distance, it is not anticipated that this would have a significant impact on the viewshed of the property. Farther to the east along these routes, the Project crosses U.S. Route 67 south of White Hall. There are potentially historic properties from the mid-1850s near this crossing that were identified in state historic data, during route reconnaissance, and at public meetings. Original alignments through this area were modified to have a lesser impact on the viewsheds of these properties; however, the addition of a new industrial element in

these pastoral views would alter the character of the landscape through this area. If determined historic, additional consultation and coordination with the Illinois State Historic Preservation Office would be required to determine the need for and type of any mitigation measures.

All of the Alternative Routes cross two different segments of historic/scenic Route 66. The western leg of Route 66 follows the historic path of the road along State Route 4 (and other smaller roads), while the eastern leg is a more contemporary scenic recreational route along I-55. Alternative Route C continues along a northern path through this portion of the segment, crossing the first segment of Route 66 just south of Virden, near Ameren's Pawnee-Virden 115 kV line and the Virden Substation. In this area, the existing visual character already includes an existing transmission line, distribution lines, a nearby cell tower, and a substation. Any additional impacts at this location would therefore be considered incremental with respect to the current visual character at the crossing. The remaining Alternative Routes through this segment cross the more historic alignment of Route 66 just south of Nilwood. Alternative Routes E, F, and G all pass through this area, which is flat and extensively cultivated. The crossing point includes grain bins and other farm associated infrastructure but generally has broad views save for a small line of trees to the east. Because the new line would be a noted change in the view through this area, it would unavoidably alter the character scene for viewers passing by this crossing.

The northern Alternative Routes cross the more contemporary scenic Route 66 route along I-55 through a flat landscape of extensive farmlands in northern Montgomery County. The landscape through this area offers broad, uninterrupted views of cultivated lands in all directions and the visual absorption the new line would be limited at this crossing. The crossing on the southern routes, however, passes on the northern side of a rest area for I-55. The line at this location would also be distinct and alter the character of the view, although the presence of the rest areas, parked vehicles, signs, and parking lot lighting would likely distract the viewer from focusing on the distinctness of the new line.

Taken together, the Routing Team considered no segment significantly better than another with respect to the potential for visual impacts. Although Alternative Routes on the south in the western portion of the segment had better screening and fewer towns in proximity, they had the greatest number of residences in proximity. Although the northern routes had better crossings of scenic roads and avoided potentially historic viewsheds, they passed by a greater number of towns and had a greater proportion of cultivated land use potentially providing more long distance views of the line.

Segment 3

The Alternative Routes through Segment 3 begin just east of I-55 in the flat, extensively farmed landscape of southern Christian County and northern Montgomery County. Few visually

sensitive resources are found in this area, and residential density is generally low. However, long, uninterrupted views would allow for the new line to be more visible through this area for both northern (Alternative Routes H, I, J, and K) and southern routes (Alternative Routes L, M, N, and O). The southern routes pass within 1 mile of eight small communities, as compared to four for the northern routes. The southern routes pass just north of Nokomis, the largest community in this segment, adjacent to an existing quarry. The alignment through this area was developed adjacent to the quarry and along 22nd Avenue to take into consideration future quarry plans for expansion. As a result, the line will be placed adjacent to, and ultimately surrounded by, the quarry and its associated crane booms and infrastructure likely minimizing the overall visual contrast of the line through this area. Taken together, both the northern and southern routes pass through areas with little existing infrastructure and have relatively few residences in close proximity; however, Alternative Routes L, M, N, and O pass in close proximity to more communities than Alternative Routes H, I, J, and K and would likely have a greater overall impact on area aesthetics.

South and east of Pana, the proportion of forest cover increases as the routes pass through the headwater tributaries of the Kaskaskia and Little Wabash Rivers in Shelby County toward Neoga. Existing transmission lines cross the segment heading toward Neoga and Greenup from Pana in southern Shelby County and the Ramsey Substation in northern Fayette County. Those routes that stay along the north side of the Study Area through this portion of the segment (Alternative Routes H, I, L, and M) pass just south of Pana, while heading east to parallel the Neoga–Shelbyville 138 kV line. Routes through this area require many small shifts and turns to avoid more frequent residences along the eastward path to reach the 138 kV line, likely adding to the overall visual disturbance for the larger density of local landowners. Once the northern Alternative Routes reach the existing Neoga–Shelbyville 138 kV line, however, the overall impact of the new line is diminished as a result of the existing line and its current effect on the visual character in the area immediately surrounding it. A historic site, the Clarksburg Schoolhouse, is roughly 0.5 mile from the routes along this parallel alignment. It is not anticipated that any additional impact of the new line would significantly alter the historic context of the school house given the presence of the existing line. Farther east, the Hidden Springs State Forest is crossed along the existing 138 kV line. Although visual impacts at this location would be muted by the presence of the existing line, the additional clearing and opening of the forest canopy along the Richland Creek valley will be notable for those hiking trails on the forest to the north.

The southern alternatives in the central portion of Segment 3 (Alternative Routes J, K, N, and O) follow closely along parcel boundaries through areas of lower residential density close to the southern boundary of Shelby County. Topographic variability and vegetative screening are limited in this portion of the segment, though residential density, public recreational use, and the availability of major transportation routes is low, limiting the number of viewers that would see the change in visual character. The routes pass north of the Village of Cowden, where

visual accessibility would likely be greatest, and continue eastward along the southern edge of a large contiguous forest area along Richland Creek and the forested riparian areas of Bruch Creek drainage. Topographic variability and forest cover increase making potential views of the new line less frequent and more transient east of Cowden.

Summarizing the comparisons in the central portion of Segment 3 suggests that the southern routes would have a lesser overall impact on visually sensitive resources. The northern routes (Alternative Routes H, I, L, and M) impact more residences and pass near more communities while only having a portion of the visual impacts reduced by the presence of an existing line. In contrast, the southern routes in the central portion of Segment 3 (Alternative Routes J, K, N, and O) pass through areas of generally lower residential density, have fewer homes in close proximity, and east of Cowden have terrain and vegetative screening that will help to reduce the contrast and visual frequency of views of the line.

The northern and southern Alternative Routes converge in the eastern third of Segment 3. The northern routes divert south from a parallel alignment due to a number of homes immediately adjacent to the existing 345/138 kV corridor (the Neoga–Casey 345 kV and Hutsonville–Neoga 138 kV lines). Through this stretch of Segment 3, the northern and southern routes follow along parallel alignments separated by just over a mile. The area is extensively cultivated with several large specialty producers of seed and landscaping vegetation. Both alignments through this area would alter the visual character of its immediate area; however, the network of existing transmission converging on the Neoga Substation (located halfway between Neoga and Sigel) would lessen the overall contrast of the new line in the area landscape.

The northern (Alternative Routes H, J, L, and N) and southern routes (Alternative Routes I, K, M, and O) of the easternmost one-third of Segment 3 diverge from one another passing on either side (north/south) of Greenup. The scenic National Historic Road passes through the area from southwest to northeast. Both the northern and southern routes are aligned adjacent to existing lines through this area to avoid creating a new crossing of industrial infrastructure along the national scenic road. The northern routes also cross the Lincoln Trail Motorsports facility, a motorcycle and ATV riding park. Given the presence of the existing line through the facility and non-natural setting of the recreational activity, the new line would not likely have significant impacts on the scenic integrity of the site. The northern routes continue east in a predominately parallel alignment along the existing transmission line, diverting three times to avoid homes and planned expansion of an existing quarry. In general, the visual impacts of the new line would be considered reduced when compared to a non-parallel alignment, given the impacts of the existing line. The southern routes beyond Greenup, head east along a largely contiguous parcel boundary alignment that begins in predominately agricultural lands and gets progressively more forested moving eastward. The area has generally low population and residential density, but the long, broad views of the line will be in contrast to the current visual

character in agricultural area, with periodic areas of lesser visibility through forested drainages farther east.

Segment 4

The Alternative Routes of Segment 4 begin approximately 7 miles due west of the proposed converter station location. The northern route, Alternative Route P, follows along the southern side of Ameren's Casey-Breed 345 kV line, along a tight, consistent parallel all the way to the converter station. At the converter station, the line switches to the northern side of the existing line and crosses the Wabash River floodplain. Even though four houses are close to the existing line along Alternative Route P, these residences are already in view of the existing line. Thus, visual impacts of the new line along this alignment are anticipated to be minor given the effects of the existing line.

In contrast, the southern route, Alternative Route Q, follows a parallel path less than a mile to the south of the existing line along predominately parcel boundaries to the converter station. Few residences are in proximity to the line in this segment and forest vegetation provides some level of screening; however, several cultivated areas would allow for broad views of the line. Some of these views may include the existing line farther in the background, but others will be completely new views in the landscape. Farther east in the Wabash River floodplain, several pivots will require taller structures to avoid impacts to their operation. These structures would be more visible and be in contrast to the regularity of the structures of the existing line increasing visibility.

Although in general visual impacts in this area should be relatively similar, given the proximity of both routes to each other and the existing 345 kV line, the overall visual impacts of Alternative Route P are likely to be less than those of Alternative Route Q.

5.2.4 Cultural Resources

Archaeological Resources

The Routing Team reviewed site-specific and locational data, received from the Illinois State Museum, for archaeological sites, architectural resources, and historic properties listed on the National Register. Prehistoric development within Illinois was heavily influenced by the variation in the natural environment, resource distribution, and the challenges presented by the ever changing social environment. Archaeologists have divided the pre-European history of human occupation of Illinois into five major periods: Paleoindian Period (circa 12,000 to 8,000 years Before Christ [B.C.]); Archaic Period (circa 8,000 to 1,000 B.C.); Woodland Period (circa 1,000 B.C. to 900 Anno Domini [A.D.]); Mississippian Period (900 to 1450 A.D.); and Late Prehistoric Period (1450 to post-1700 A.D.).

A majority of Paleoindian sites in Illinois represent shortly occupied camps; people from this period are generally believed to have lived in small, highly mobile groups. The Woodland Period in Illinois is marked by plant domestication, population increase and the invention of pottery and the bow and arrow. People gradually became more sedentary, formed organized villages and concentrated settlements within major river valleys. Woodland Period sites include elaborate grave offerings placed within mound and village burials. During the Mississippian Period, hierarchical societies formed within various river valleys and held considerable regional influence. A continued reliance on maize agriculture made it more feasible to settle in one location year-round. Farmsteads and hamlets surrounded and provided food for centralized cities, many of which were fortified and contained large earthen structures. Widespread site abandonment and population migration marks the end of the Mississippian Period. Settlements were much smaller and large areas of land once inhabited remained unoccupied for centuries.

In the 17th century, Europeans came into contact with two ethnic groups in Illinois: the Illinois, a collection of twelve tribes, and the Miami tribe. It wasn't until the 18th century that the Fox, Ioway, Kickapoo, Mascouten, Piankashaw, Potawatomi, Sauk, Shawnee, Wea and Winnebago tribes migrated into Illinois. Starting in the 19th century, following failed French and British occupations, heavy European immigration transformed Illinois into an agricultural and manufacturing center.

Two archaeological sites have been previously identified within the ROW of the Alternative Routes in Segment I of the Project. These sites consist of a Late Archaic Period site and a Woodland Period habitation site. Approximately 16 previously identified archaeological sites have been identified within 1,000 feet of Segment I. These sites are predominantly prehistoric habitation sites. One previously identified prehistoric site within Segment I also contains human remains and/or grave goods associated with unmarked burials. The proximity of the Mississippi River suggests the potential for Paleoindian Period and deeply buried deposits. One historic archaeological site is located within the vicinity of Segment I; it is a habitation site of an unknown occupation period.

A total of 12 archaeological sites have been previously identified within the ROW of the Alternative Routes in Segment 2 of the Project. These sites consist predominantly of prehistoric habitation sites and Woodland Period mound sites. The three mound sites and three multicomponent prehistoric/historic sites contain human remains and/or grave goods associated with unmarked burials. Approximately 60 archaeological sites have been identified within 1,000 feet of Segment 2. These sites consist of nearly six prehistoric sites for every historic site. Roughly half of the prehistoric sites could not be identified with a period of occupation.

The prehistoric sites mainly consist of habitation sites and there are 14 mound sites, 12 of which are associated with the Woodland Period. All of the mound sites and three

multicomponent prehistoric/historic sites contain human remains and/or grave goods associated with unmarked burials. Roughly a sixth of the prehistoric sites are of an unknown site type and 11 sites are isolated finds. The proximity of the Mississippi River suggests the potential for Paleoindian Period and deeply buried deposits. The historic archaeological sites identified within the vicinity of Segment 2 consist of Pioneer, Frontier, Early Industrial and Urban Industrial habitation and commercial sites. Roughly one-third of the historic archaeological sites could not be identified with a period of occupation.

A total of 4 archaeological sites have been previously identified within the ROW of the Alternative Routes in Segment 3 of the Project. These sites consist entirely of prehistoric habitation and mound sites. All four of the mound sites contain human remains and/or grave goods associated with unmarked burials. Approximately 18 archaeological sites have been identified within 1,000 feet of Segment 3. These sites consist of nearly 4 prehistoric sites for every historic site. Roughly half of the prehistoric sites could not be identified with a period of occupation.

A plurality of prehistoric sites are habitation sites and there are 8 mound sites, none of which can be attributed to an occupation period. All 8 of the mound sites contain human remains and/or grave goods associated with unmarked burials. Roughly a fifth of the prehistoric sites are of an unknown site type and 8 sites are isolated finds. Numerous rivers intersecting the Project ROW suggests the potential for Paleoindian Period and deeply buried deposits. The historic archaeological sites identified within the vicinity of Segment 3 consist of Early Industrial habitation sites. Roughly three-fourths of the historical archaeological sites could not be identified with a period of occupation.

One archaeological sites has been previously identified within the ROW of the Alternative Routes in Segment 4 of the Project. The site consists of Late Woodland and Mississippian period occupations and is a multipurpose mound and habitation site. It also contains human remains and/or grave goods associated with unmarked burials. Approximately 7 archaeological sites have been identified within 1,000 feet of Segment 4. These sites are predominately prehistoric sites and one is a historic Native American site. Two prehistoric sites consist of Paleo-Indian Period deposits and two sites could not be identified with a period of occupation. Roughly half of the prehistoric sites consist of habitation sites. There are two prehistoric cemeteries and two prehistoric mound sites, all of which contain human remains and/or grave goods associated with unmarked burials. The proximity of the Wabash River suggests the potential for additional Paleoindian Period and deeply buried deposits. The historic Native American site is a cemetery and consists of human remains and/or grave goods associated with unmarked burials.

Architectural Resources

Segment 1 of the Project running through the northwest corner of Pike County has few known architectural resources (**Figure 5-6A**). A general store in the Town of New Canton is the only architectural resource identified (**Table 5-16**). The broad flood plain of the Mississippi River contains numerous farmsteads and likely rural residences. New Canton and El Dara are the only towns located near Segment 1 (**Table 5-11**).

Segment 2 consists of the eastern half of Pike County, Scott, Greene, Macoupin, and Montgomery Counties (**Figure 5-6A**). These counties include rural farmsteads, residences, commercial buildings, cemeteries, churches, bridges, and schools. The early settlement of the area is reflected in the domestic architectural styles such as Greek Revival, Second Empire, Italianate and Queen Anne and common vernacular forms including gabled-ell and I-house. Rural schools and churches are generally frame construction. The farmsteads within the Study Area also follow folk types and styles. There are numerous known sites located in the Study Area including bridges and residences in both rural and urban settings (**Table 5-16**). The towns located near or within Segment 2 are shown in **Table 5-12**.

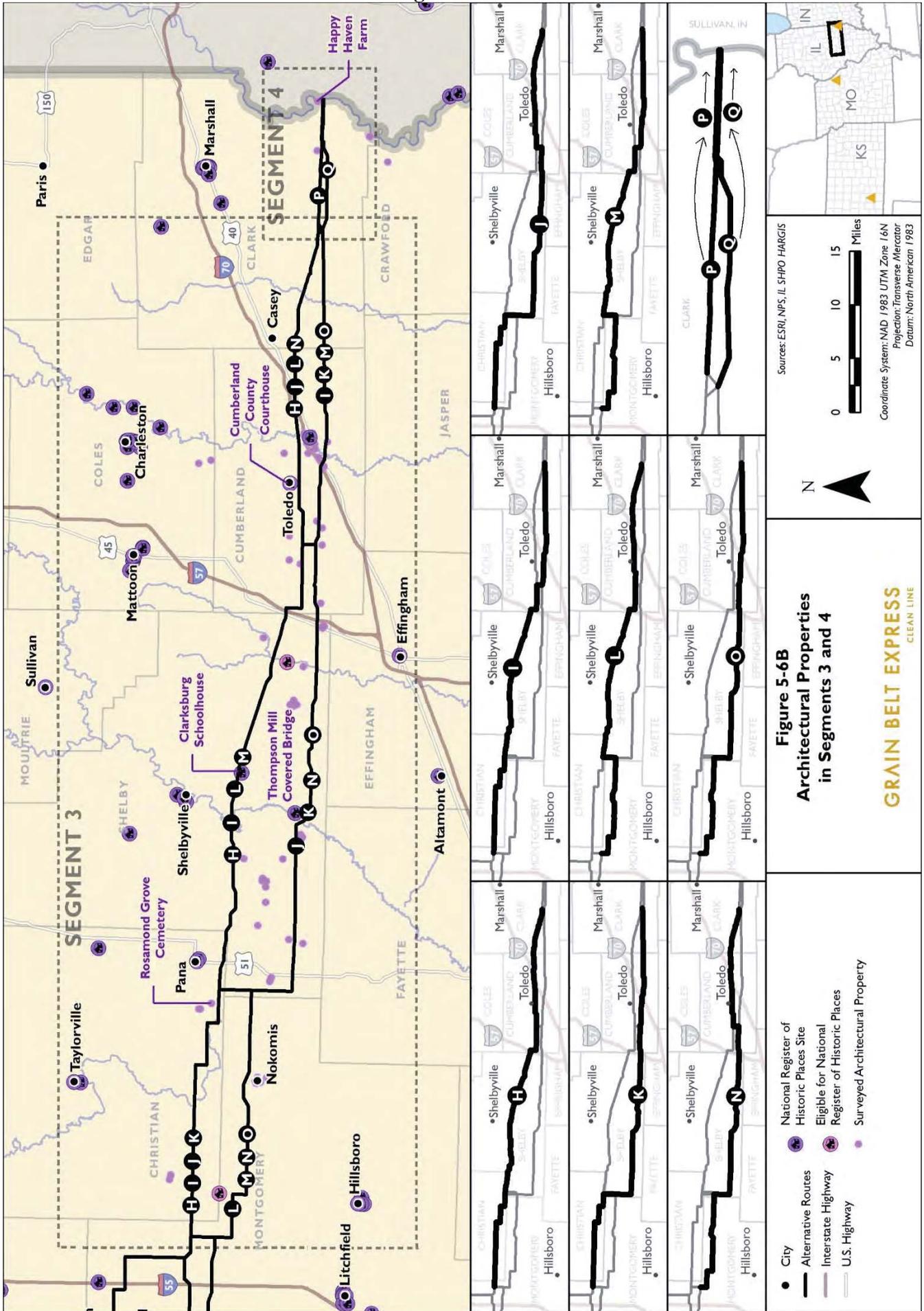
Segment 3 consists of Montgomery, Christian, Shelby, Cumberland, and Clark Counties (**Figure 5-6B**). These counties have rural resource types similar to those found in Segment 2. Domestic resources in this segment are also characterized by vernacular forms such as the gabled-ell, I-house, and double pile. The farmsteads within the Study Area also follow folk types and styles. U.S. Highway 40 (National Road) is located within this segment. Numerous known sites are located in the Study Area including bridges and residences in both rural and urban settings (**Table 5-16**). The towns located near or within Segment 3 are shown in **Table 5-13**.

Segment 4 is entirely within Clark County (**Figure 5-6B**). There are only two known sites located within the Study Area including a farmstead and a rural school (**Table 5-16**). The floodplain of the Wabash River contains many farmsteads, which follow the folk types and styles of Segments 2 and 3. The towns located near or within Segment 4 are shown in **Table 5-14**.

Table 5-16. Cultural Resources

Archeological	Alternative Routes																			
	Segment 1					Segment 2					Segment 3					Segment 4				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q			
Resources within the ROW	1	1	7	8	8	5	5	1	2	0	1	3	4	2	3	1	1			
Resources within 1,000 feet	9	10	33	39	42	23	26	10	11	6	7	11	12	7	8	7	4			
	Alternative Routes (distance in feet)																			
Architectural ¹	Segment 1					Segment 2					Segment 3					Segment 4				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q			
	5,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Scott Lyman House (NR Listed)	-	-	-	-	-	5,240	5,240	-	-	-	-	-	-	-	-	-	-			
Thompson Mill Covered Bridge (NR Listed)	-	-	-	-	-	-	-	-	-	5,130	5,130	-	-	5,130	5,130	-	-			
Clarksburg Schoolhouse (NR Listed)	-	-	-	-	-	-	-	1,530	1,530	-	1,530	1,530	1,530	-	-	-	-			
Cumberland County Courthouse (NR Listed)	-	-	-	-	-	-	-	4,480	4,480	4,480	4,480	4,480	-	4,480	-	-	-			
Bridge over Little Sandy Branch (NR Eligible)	-	-	990	990	990	-	-	-	-	-	-	-	-	-	-	-	-			
Bridge over Apple Creek (NR Eligible)	-	-	1,370	1,370	1,370	-	-	-	-	-	-	-	-	-	-	-	-			

¹ Resources are measured from centerline of the Alternative Routes.



General Impacts and Mitigation

Transmission lines tend not to have significant direct impacts on archaeological resources, which are usually located entirely below the ground surface. However, some sites have surface expression, such as burial mounds, effigies and intaglios, stone circles or alignments, foundations and walls, and cemeteries. The new transmission structures might detract from the setting or feeling of a site, particularly if the significance of the site relates in part to a sense of wildness, openness, primitiveness, or sacredness. Whenever possible, adverse impacts on identified sites would be avoided by strategically locating access roads, staging areas, and structures.

Impacts on archaeological properties may be physical and/or visual, depending on the type of site. Visual impacts, such as those described for architectural historic properties, can occur where the physical setting, location, or feeling contributes to the significance of the resource. Frontier military posts or homesteads, battlefields, historic trails, cemeteries, burial mounds, or landforms that are identified as sacred places are some examples. Adverse physical impacts can include ground disturbance by excavation to construct transmission line support structures and substations, compression and/or rutting by heavy machinery, grading/constructing access roads, pulling stumps, material storage, or surface collection of artifacts by construction crews.

Impacts on architectural historic properties would be primarily visual, created by the construction of new structures where none exist, the addition of a second transmission line next to an existing transmission line corridor (generally a lesser impact), and clearing of forested land. Impacts would vary based on local relief, height of existing vegetation, and any intervening recent development. Any physical impacts on architectural historic properties would be avoided, where possible, by strategically locating access roads, staging areas, and structures.

Alternative Route Comparison

A review of archaeological resources within the Illinois Inventory of Archaeological Sites provided by the Illinois State Museum identified a total of 19 recorded archaeological sites along one or more of the Alternative Routes. Generally, archaeological resources are only a concern when located within the ROW and can usually be spanned or avoided, eliminating any impacts.

A review of the National Register and the Illinois Inventory of Archaeological Sites was completed for each segment. Spatial information was collected on all previously identified architectural and archaeological resources within 0.25 and 0.5 mile of each Alternative Route. A review of the archaeological resources provided by the Illinois State Museum identified no National Register-listed archaeological properties within 0.5 mile of the Alternative Routes.

Segment I

Alternative Routes A and B each have one archaeological resource within the ROW and nine and ten, respectively, archaeological resources within 1,000 feet (see **Table 5-16**). Very little

of the Project ROW for this segment has been previously surveyed either intensively or systematically. In addition, a majority of the Project ROW for both Alternative Routes, according to information from the Inventory of Illinois Archaeological Sites, overlap areas of high archaeological resource potential. Portions of Segment I, therefore, may contain additional resources that have not yet been identified.

The National Register-listed Massie Variety Store in New Canton was identified approximately 1 mile from Alternative Route A. Alternative Route B does not have any known resources within 1 mile of centerline.

Segment 2

Alternative Routes D and E have the greatest number of previously identified archaeological resources located within the ROW, with 8 each, but the overall variance among all of the Alternative Routes is not high (see **Table 5-16**). Each of the Alternative Routes, according to information from the Inventory of Illinois Archaeological Sites, only intermittently crosses areas of high archaeological resource potential, typically land along rivers or tributaries.

The high frequency of archaeological resources identified by surveys conducted previously by other entities within the Project ROW and/or land adjacent to it for all of the Alternative Routes, however, suggests that the large portions of the Project ROW not previously surveyed may contain unidentified resources. Alternative Routes C, D and E cross an archaeological site containing 15 individual mounds and protected archaeological resources. The site is crossed by five existing pipelines and has been surveyed extensively; however the surrounding areas have not been entirely surveyed, suggesting that this site may be more extensive than currently recorded. In addition, there is a 5,000-foot portion within both Alternative Routes E and G that has five relatively large archaeological sites within 1,000 feet of the Project ROW and is situated in an area that has not been extensively or systematically surveyed. Grain Belt Express will consult with the Illinois Historic Preservation Agency to determine protection measures necessary to avoid or minimize impacts to known or undiscovered archaeological resources.

One National Register-listed site is located within 1 mile of Alternative Routes F and G (**Table 5-16**). The National Register-listed Scott Lyman House is approximately 5,240 feet from Alternative Routes F and G. The recorded sites include three bridges, a bandstand in the Village of Time, and two rural residences within 0.50 mile of Alternative Routes C, D, and E (**Table 5-16**). Alternative routes C, D, and E pass within 1,000 feet of the Bridge over Little Sandy Branch and within 1,500 feet of the Bridge over Apple Creek, both National Register-listed. Six additional recorded resources in the Village of Virden are between 0.50 mile and 1 mile of Alternative Route C. Three recorded rural residences are within 0.50 mile of Alternative Routes F and G.

Segment 3

A total of 4 archaeological resources are located within the ROW for Alternative Routes in Segment 3 (see **Table 5-16**). Alternative Route M has the greatest number of previously identified archaeological resources, with 4, but the overall variance among all of the Alternative Routes is not high. All of the Alternative Routes, according to information from the Inventory of Illinois Archaeological Sites, only intermittently cross areas of high archaeological resource potential, typically rivers or tributaries. Like Segment 2, numerous long linear surveys that intersect or are within a half mile of the Project ROW have been conducted previously by other entities.

Most of the Project ROW, however, has not been surveyed and therefore unidentified archaeological resources could occur within the Project area. An archaeological site, consisting of 17 small mounds atop a bluff, is bisected and oriented in the same east-west direction as a portion of the Project centerline within Alternative Routes I, K, M, and O that spans approximately 3,000 feet. In addition, five archaeological sites are located within 1,000 feet of a 1,500-foot portion of the Project ROW within Alternative Routes H, I, L and M. Although this entire portion of the Project ROW was extensively surveyed in the past, only the ground surface was surveyed and there is potential for the presence of undisturbed subsurface archaeological resources. Grain Belt Express will consult with the Illinois Historic Preservation Agency to determine protection measures necessary to avoid or minimize impacts to known or undiscovered archaeological resources.

Segment 3 has three National Register-listed resources located within 1 mile of the Alternative Routes (**Table 5-16**): the Clarksburg Schoolhouse is located just over 0.50 mile from Alternative Routes H, I, L, and M; the Cumberland County Courthouse is within 1 mile of Alternative Routes H, J, L, and N; and the Thompson Mill Covered Bridge is located within 1 mile of Alternative Routes J, K, N, and O. Numerous recorded resources are located within 0.25 mile of Alternative Routes I, K, M, and O. Alternative Routes H and L have one previously recorded resource within 0.25 mile. The Rosamond Grove Cemetery is located within 1 mile of Alternative Routes H, I, J, and K. The cemetery also contains a Civil War-era cannon and Statue of Lincoln. However, very few of these sites have been evaluated with respect to National Register criteria.

Segment 4

Alternative Routes P and Q each have one archaeological resource within the ROW and 14 archaeological resources within 1,000 feet (see **Table 5-16**). The entire Project ROW for this segment has not been previously systematically surveyed and, according to information from the Inventory of Illinois Archaeological Sites, it is within an area of high archaeological resource potential. Portions of Segment 4, therefore, may contain additional resources that have not yet been identified. As stated previously, Grain Belt Express will consult with the Illinois Historic

Preservation Agency to determine protection measures necessary to avoid or minimize impacts to known or undiscovered archaeological resources.

No National Register-listed resources are located within 1 mile of Alternative Routes P and Q. Only one previously recorded resource, the Happy Haven Farm, is located within 0.50 mile of Alternative Routes P and Q. However, the farm was not evaluated with respect to National Register criteria.

5.2.5 Built Environment Summary

Segment 1

In Segment 1, Alternative Route B would have less impact on the built environment than Alternative Route A. Both Alternative Routes will result in similar impacts to developed land, agricultural land, the existing viewshed and cultural resources. However, Alternative Route B avoids passing within 250 feet of any residences, runs along parcel boundaries for a greater distance, and avoids bisecting several large farms with significant pivot irrigation infrastructure.

Segment 2

In Segment 2, Alternative Route C will impact the built environment less than the remaining four Alternative Routes. Alternative Route C is slightly shorter than the other Alternative Routes, crosses the Illinois River adjacent to an existing pipeline, and has fewer residences within 500 feet. Alternative C is anticipated to result in similar impacts to agricultural land, the existing viewshed, and cultural resources compared to the remaining Alternative Routes.

Segment 3

Based on evaluating the eight Segment 3 Alternative Routes, Alternative Route K will impact the built environment less than the remaining Alternative Routes. Alternative Route K avoids crossing the incorporated boundaries of any municipalities, runs along parcel boundaries for the greatest distance (54 percent of its route), has the fewest residences within 250 and 500 feet, and crosses fewer small parcels. Alternative Route K would have less of an impact than the other Alternative Routes on agriculture because it minimizes bisecting farms by running along parcel boundaries. Alternative Route K also avoids crossing an environmentally sensitive area on public lands and is expected to result in similar impacts to cultural resources compared to other Alternative Routes.

Segment 4

Based on evaluating the two Segment 4 Alternative Routes, Alternative Route P would impact the built environment less than Alternative Route Q. Alternative Route P is slightly shorter than Alternative Route Q, parallels an existing transmission line for 100 percent of its route, and passes within 500 feet of only a few residences that are also already near the existing line. From an agricultural perspective, Alternative Route P crosses fewer acres that employ center

pivot irrigation, and would not impact the operation of those pivots crossed. Alternative Route P would result in similar impacts to cultural resources compared to Alternative Route Q.

5.3 Engineering and Constructability Impacts

Constructability is a term used to describe the feasibility of a proposed transmission line as it relates to engineering and construction concerns. Constructability evaluates the use of existing transmission corridors, engineering challenges, and accessibility issues of a Proposed Route. Major factors that affect constructability include, but are not limited to, steep topography, condensed ROWs, high angles, proximity to major highways, accessibility, and cost. Additional issues to consider when evaluating constructability are: ease of moving equipment, materials, and workers to the construction sites; relative ease of ensuring public and worker safety; logistical difficulties associated with obtaining the required easements for the transmission line; and the actual amount of time and materials needed for construction, which can correlate to the total length of the corridor (i.e., longer lines require more materials and, often, a longer construction period). A comparison of the engineering and construction considerations for the Alternative Routes is presented in **Table 5-17**.

Table 5-17. Engineering and Constructability

Engineering	Alternative Routes																		
	Segment 1			Segment 2					Segment 3							Segment 4			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q		
Length	12.9	13.0	83.3	85.9	86.0	85.0	85.1	93.6	94.7	99.8	98.5	97.5	98.7	97.8	96.5	11.0	11.7		
Parallels Transmission (miles)	1.8 (14%)	-	0.2 (<1%)	0.2 (<1%)	0.2 (<1%)	-	-	35.1 (38%)	17.5 (18%)	20.2 (20%)	2.6 (3%)	35.1 (36%)	17.5 (18%)	20.2 (21%)	2.6 (3%)	11.0 (100%)	3.6 (31%)		
Parallels Road/Railroad (miles)	0.4	2.8	2.3	6.8	6.8	5.5	5.5	0.7	2.2	1.3	2.8	1.5	3.0	2.1	3.7	-	-		
Sited Along Parcel Boundaries (miles) ¹	3.9 (30%)	2.8 (21%)	40.5 (49%)	39.3 (46%)	37.5 (44%)	34.0 (40%)	32.1 (38%)	35.2 (38%)	46.7 (49%)	43.2 (43%)	52.6 (53%)	34.9 (36%)	46.3 (47%)	39.9 (41%)	49.3 (51%)	-	2.2 (19%)		
Angled Structures (#)	6	7	45	53	53	60	60	51	47	45	37	59	55	51	43	2	7		
Karst Topography (miles)	12.9	13	33.5	33.5	33.5	41.9	41.9	-	-	-	-	-	-	-	-	-	-		
Steep Slopes 15-20% (feet)	1,160	1,160	5,490	6,010	6,010	9,780	9,780	1,320	1,460	960	1,090	1,380	1,520	1,020	1,150	510	60		
Steep Slopes >20% (feet)	960	600	2,180	2,210	2,210	3,560	3,560	490	400	230	140	490	400	230	140	90	60		
Inactive Mines Crossed (miles)	-	-	6.3	0.1	0.1	-	-	2.3	2.3	1.3	1.3	3.7	3.7	1.2	1.2	-	-		

¹In many cases, a single landowner owns one or more contiguous parcels. In these cases, the contiguous parcels were counted as a single parcel when calculating the distance sited along parcel boundaries.

5.3.1 Paralleling and Crossing Existing Linear Features

Where feasible and logical, significant efforts were made to align Alternative Routes parallel to the existing transmission network and pipelines, and to run along parcel boundaries (discussed in Section 5.2). The Routing Team also attempted to avoid sharp angles and circuitous alignments in order to reduce overall cost of construction. Paralleling existing linear utilities consolidates utility corridors, logically placing a new land use feature in close alignment with an existing similar land use feature, thereby avoiding the fragmentation of existing land uses and sensitive habitats throughout an area. In addition, paralleling existing transmission lines can reduce the overall impact of the new transmission line on visually sensitive areas (e.g., historic sites and outdoor recreational areas) and airfield flight zones, since any impacts of the new line are considered in the context of the impacts of the existing line. In these areas, the impacts of the new line are considered incremental to the existing impacts, rather than completely new impacts in otherwise unaffected areas.

Existing infrastructure paralleled throughout the Study Area includes:

- Ameren Illinois Shelbyville-Pana 138 kV transmission line
- Ameren Illinois Neoga-Shelbyville 138 kV transmission Line
- Ameren Illinois Hutsonville-Neoga 138 kV transmission Line
- Ameren Illinois Neoga-Casey 345 kV transmission line
- Ameren Illinois Casey-Breed 345 kV transmission line
- Ameren Illinois 115 kV transmission line
- Ameren Illinois Neoga-Effingham 138 kV transmission line
- Prairie Power, Inc. 138 kV transmission line in Pike County

General Best Management Practices

A few construction and engineering issues should be considered when paralleling existing infrastructure. During construction, outages may be required in specific situations when crossing other major lines. Outages are often difficult to schedule due to peak use seasons (summer and winter) when utilities are unable to take lines out of service. In addition, there are areas where existing transmission lines will be crossed. The proposed line will be constructed over the top of existing transmission lines and will require taller structures to provide for adequate clearance between the conductors.

Existing pipelines are similar to existing transmission lines in terms of ROWs. The utilities can abut ROWs but not overlap them. Subsurface surveying may be required to determine the exact location of the pipelines prior to construction. Steel plating or matting may also be

required when crossing over the top of pipelines to protect them from large construction vehicles.

Alternative Route Comparison

Segment 1

Both Alternative Routes A and B run along parcel boundaries for a portion of their routes (**Table 5-17**). However, Alternative Route A also parallels 1.8 miles of existing transmission line. In total, Alternative Route A parallels existing transmission and runs along parcel boundaries for more than 6 miles (47 percent of its total length) and Alternative Route B parallels existing transmission and runs along parcel boundaries for just under 6 miles (43 percent of its total length).

The number of transmission and pipeline crossings for the Alternative Routes in Segment 1 is shown in **Table 5-18**. Both Alternative Routes cross the same number of 115 kV transmission lines and pipelines. Alternative Route A crosses one additional 69 kV transmission line. The pipeline corridor will likely be able to be crossed by a single span at the crossing location. The impacts from either Alternative Route are comparable. Although Alternative Route A parallels a short distance of existing transmission line, it does so by traversing a greater distance through the Mississippi River bluffs.

Segment 2

Alternative Routes C, D, and E parallel existing transmission lines for a short distance along the length of the route in Segment 2 (**Table 5-17**). Each parallels the Tap–Aalsey 115 kV transmission line for about 0.2 mile. None of the routes parallel gas pipelines for a significant distance although Alternative Routes C, D, and E cross the Illinois River adjacent to a pipeline corridor containing five pipelines. Alternative Routes F and G do not parallel pipelines or transmission lines. Alternative Routes C, D, and E have the most total length along parcel ownership boundaries (49, 46, and 44 percent, respectively). Alternative Routes F and G run along parcel ownership boundaries for only 40 and 38 percent, respectively, of their length.

While Alternative Routes C, D, and E parallel existing transmission lines, there is less than a 1 percent total length of parallel for each, so the difference between each route for transmission line parallel is minimal. Additionally, Alternative Route C has the shortest length, which would affect less land overall and decrease impacts due to construction.

Each of the Alternative Routes require multiple crossings of existing transmission lines and existing or planned pipelines. Overall, engineering challenges associated with any Alternative Routes would be comparable, given similar numbers of lower voltage transmission line and pipeline corridors crossed. While none of the Alternative Routes parallel a significant distance of existing transmission line, Alternative Routes C, D, and E avoid crossing the Illinois River where no utilities are currently present.

Segment 3

Segment 3 Alternative Routes range from 93.6 miles to 99.8 miles long. Alternative Routes H and L parallel existing transmission lines for the greatest length—each paralleling existing transmission lines for more than 35 miles. Alternative Routes K and O have the least amount of parallel siting to existing transmission lines, at 2.6 miles each. Routes that run along parcel boundaries for the greatest length are Alternative Route K (52.6 miles), Alternative Route O (49.3 miles), and Alternative Route I (46.7 miles). Collectively, the routes that have the greatest percentage of siting parallel to existing transmission lines and along parcel boundaries per total length are Alternative Route H (76 percent), Alternative Route L (73 percent), and Alternative Route I (70 percent).

Alternative Route L has the most length of existing ROW paralleled, yet it is longer and more circuitous, creating more impact to land overall during construction. The circuitry of the route results in more angles, which will require larger, lattice structures, slightly increasing land use impacts. Route K follows parcel boundaries the most; however, the total length of the route is approximately 4.9 miles longer compared to the shortest Alternative Route. However, Route K would result in lesser impacts for farmers who farm several contiguous plots of land because the route is sited to avoid division of land owned or operated by the same individual, and has fewer angles.

Each of the Segment 3 Alternative Routes crosses several existing transmission lines and pipelines. Alternative Routes H and J have the most total transmission line crossings, 5 of which are of 345 kV transmission lines. Alternative Routes N and L also have 5 crossings of 345kV transmission lines. Although engineering challenges still exist when crossing any transmission line, crossing lower voltage lines is typically less of a challenge. Alternative Routes H and L parallel existing transmission for a significant distance, which could provide opportunities to use existing access roads.

Segment 4

Alternative Route P is about 11 miles long and Alternative Route Q is nearly 12 miles long (**Table 5-17**). Alternative Route P parallels existing transmission lines for 100 percent of its length. Alternative Route Q is parallel to about 3.6 miles of existing transmission lines (31 percent) and has about 19 percent of its length sited along parcel boundaries, which is slightly more than 2 miles of its total length. The total percent of Alternative Route Q that runs parallel to existing ROW is 50 percent, half that of Alternative Route P.

Both Alternative Routes cross the Kansas–Hutsonville 138 kV transmission line west of Angling Road. As it exits the proposed converter site location, Alternative Route P also crosses the Casey–Breed 345 kV transmission line.

Table 5-18. Transmission and Pipeline Crossings for Alternative Routes

Transmission Lines Crossed	Alternative Routes																			
	Segment 1					Segment 2					Segment 3					Segment 4				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q			
<115 kV	1	-	5	5	5	6	6	4	3	4	3	3	2	3	2	-	-			
115 kV or 138 kV	1	1	4	4	4	2	2	4	4	4	4	4	4	4	4	1	1			
345 kV	-	-	-	-	-	-	5	3	5	3	5	3	3	5	3	1	-			
Pipelines crossed ¹	1	1	9	9	10	7	8	22	22	23	23	21	21	22	22	-	-			
Total Crossings	3	2	18	18	19	15	16	35	32	36	33	33	30	34	31	2	1			

¹ The accuracy and completeness of this data could only be verified at locations which pipeline markers could be observed along public roads. Further coordination with pipeline companies may be required to determine precise locations of pipelines and their associated ROW.

Alternative Route Q remains south of the existing 345 kV line for its entire length. Alternative Route P would result in less impact than Alternative Route Q due to a number of factors. The total length of Alternative Route P is slightly shorter and less circuitous, and following the existing ROW may allow existing access roads to be used through forested areas. In addition, Alternative Route P crosses one more 345 kV transmission line compared to Alternative Route Q.

5.3.2 Transportation Network Crossings

Township and county roads are the dominant mode of transportation within the majority of the predominately rural Study Area. Major highways provide some connections between larger towns or cross through the Study Area to connect larger cities. Major transportation routes include I-55, I-57, and I-70; and U.S. Highways 40, 45, 51, 54, and 67.

Also, several private and public airfields are used for municipal, agricultural, and recreational activities. The Routing Team avoided routes crossing directly over public and private airfields; however, several Alternative Routes do fall within an estimated obstruction zone. The estimated obstruction zones were calculated using the same requirements as the Federal Aviation Administration (FAA) approximated notification zone requirements (Code of Federal Regulations, Title 14, Part 77 Subpart B). Many of the larger towns and cities in the Study Area are connected by railroads, several of which are crossed by Alternative Routes in each segment.

General Impacts and Best Management Practices

Numerous U.S. highways, state highways, and county and local roads transect the Study Area. Highways and roadways can be spanned by the transmission line and impacts are generally minimal. During construction it may be necessary to close portions of roads to allow the stringing of the conductor over the road. Coordination with the Illinois Department of Transportation will occur for all highway crossings associated with the Project. Similarly, the crossing of rail lines results in minimal impacts, although coordination with railway operators will be necessary during construction of the railway crossings.

Generalized notification zones for public and military airports and heliports are determined per FAA regulations (Code of Federal Regulations, Title 14, Part 77, Subpart B). The notification zone are designed to identify potential flight obstructions and are based on the projected height of structures and the airport runway length. Once notified of the potential obstruction (FAA form 7460-1), the FAA conducts an aeronautical analysis to determine if any adverse impacts may be created to the safe and efficient use of navigable airspace. Impacts from structures located within a notification zone can be mitigated by lighting or marking the structure or by situating the new structure adjacent to an existing obstruction (such as an existing transmission line or tree line). Similar generalized notification zone buffers were considered around verified

private airfields to avoid negatively impacting their operations, even though these regulations do not apply to private airfields.

Alternative Route Comparison

Segment 1

Both of the Alternative Routes in Segment 1 cross State Highway 96, also known as Great River Road, which is a scenic road for portions of the route in Illinois (**Table 5-19**). State Highway 1 runs along the bluffs at the edge of the Mississippi River floodplain and will be crossed roughly perpendicularly by each route. No public or private airfields are located close to either of the Alternative Routes in Segment 1 (**Figure 5-7A**). No significant impacts to transportation are expected from either of the Alternative Routes in Segment 1.

Segment 2

All of the Alternative Routes in Segment 2 cross I-55 and U.S. Highways 54 and 67. **Table 5-19** lists the number of times each Alternative Route crosses highways and other transportation infrastructure. Alternative Routes C, D, and E cross the most state highways (five), while Alternative Routes F and G cross four different state highways. None of the routes have more than one crossing of any individual highway.

Two public airfields (Pittsfield Penstone Municipal and Zelmer Memorial Airpark) are relatively close to the Alternative Routes in Segment 2 (**Figure 5-7A**), although none of the Alternative Routes cross the obstruction zone of either airfield (**Table 5-20**). Alternative Routes D, E, F, and G cross the estimated obstruction zone of two private airstrips, Ribble Airport and Killam Flying Service in Macoupin County. The Alternative Routes are approximately 6,650 feet from the northern end of Ribble Airport runway and 5,400 feet from the northern end of the Killam Flying Service runway. Because of the distance of the Alternative Routes to the end of the runways and the presence of significant tree cover between the end of each runway and the Alternative Routes, impacts to the operation of either airfield are not anticipated.

Segment 3

All of the Alternative Routes in Segment 3 cross I-57 and I-70. **Table 5-19** lists the number of times U.S. highways and state highways are crossed by each Alternative Route. Alternative Routes H, J, L, and N cross the most U.S. and state highways (three crossings of U.S. highways and seven crossings of state highways), while Alternative Routes I, K, M, and O all cross three different U.S. highways and six state highways. The Alternative Routes cross five (J and K), six (H, I, N, and O), or seven (L and M) railroads.

Table 5-19. Transportation Infrastructure Crossed by Alternative Routes

Categories	Alternative Routes																
	Segment 1				Segment 2				Segment 3				Segment 4				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Public airfields (miles of FAA Notification Zones crossed)	-	-	-	-	-	-	-	2.8	-	2.8	-	2.8	-	2.8	-	-	-
Private airfields (miles of estimated obstruction zone crossed)	-	-	-	2.9	2.9	2.9	2.9	2.7	2.7	3.3	2.7	2.7	2.7	3.3	3.3	-	-
Railroad crossings	-	-	5	3	3	4	4	6	6	5	7	7	7	6	6	-	-
Interstate crossings	-	-	1	1	1	1	1	2	2	2	2	2	2	2	2	-	-
U.S. highway crossings	-	-	2	2	2	2	2	3	3	3	3	3	3	3	3	-	-
State highway crossings	1	1	5	5	5	4	4	7	6	7	7	6	6	7	6	1	1