

7.0 ENVIRONMENTAL INFORMATION: ASSOCIATED FACILITIES FOR ROUTE A AND ROUTE B AND CONNECTOR SEGMENTS

The Project includes construction of various associated facilities that are necessary for the operation of the Project. This section describes the environmental setting of the existing Lakefield Junction Substation that requires expansion, the existing Winnebago Junction Substation which would be decommissioned, the new Huntley Substation which would replace the Winnebago Junction Substation, and the area to be traversed by the reconfiguration of the 161 kV lines that currently terminate at Winnebago Junction Substation but would be relocated to connect with the new Huntley Substation.

ITC Midwest developed several connector segments along the Project, as discussed in **Section 5.4**. Three connector segments discussed in **Section 5.4** are locations where Route A and Route B share a location. Environmental information on the five other connector segments (two near Jackson Municipal Airport, one near Fox Lake, and two near the Pilot Grove Lake WPA) is provided in this chapter. Detailed maps of the connector segments are available in **Appendix D**. Detailed information on the impacts associated with the connector segments is available in **Appendix H**.

ITC Midwest reviewed environmental information in its analysis of the Study Area and compared the existing environmental conditions with the Project impacts associated with each segment of the Project. Detailed figures of the associated facilities are provided in **Appendix F**. Detailed information on the impacts associated with the 161 kV associated facilities is available in **Appendix H**. The following summarizes the existing conditions surrounding the associated facilities, potential project-related impacts associated with them, and appropriate mitigation measures to minimize these impacts.

7.1 LAKEFIELD JUNCTION SUBSTATION

The existing Lakefield Junction Substation will need to be expanded to accommodate this Project. ITC Midwest intends to acquire approximately three acres, which it believes is a sufficient size to accommodate the necessary additional substation equipment for the Project and to provide a buffer between neighboring landowners.

7.1.1 Description of Environmental Setting

The Lakefield Junction Substation is located in Jackson County, Section 3 of Hunter Township. It is within the Western Corn Belt Plains ecoregion of Minnesota as defined by the USGS. This ecoregion is typically flat with gently rolling topography, with an average elevation of 1,500 feet above sea level, and averages 24 to 36 inches of precipitation annually. Agricultural land accounts for the vast majority of this ecoregion, with typical crops including corn, soybeans, wheat, and alfalfa. The USGS National Land Cover Database (“NLCD”) lists two land cover types (Developed, Medium Intensity and Cultivated Crops) for the area around Lakefield Junction Substation. The substation is surrounded on all sides, with the exception of the access driveway, by cropland.

The Lakefield Junction Substation area is dominated by Canisteo, Clarion, Crippin, and Nicollet soil units (**Appendix M**). These soil units are typically considered to be loamy or a clay loam, are typically used for agricultural purposes, are moderately well drained to poorly drained, and are considered prime farmland according to the NRCS.

The Lakefield Junction Substation area lies within the Lower Mississippi River Basin watershed. The nearest perennial waterway is the Des Moines River, approximately five miles east of the Lakefield Junction Substation. There are various unnamed tributaries/drainages in addition to three nearby lakes (Boot, Heron, and Clear). The Des Moines River and all three lakes are listed as MnDNR PWIs.

Commonly associated agricultural vegetation of southern Minnesota includes corn, soybean, alfalfa, and winter wheat. Typical prairie vegetation of southern Minnesota includes big bluestem, little bluestem, indiangrass, sideoats grama, prairie june-grass, and sun sedge.

According to the MnDNR’s NHIS, no federally- or State-listed threatened or endangered species are known to occur within two miles of the Lakefield Junction Substation expansion area (MnDNR 2012i). The nearest sighting of a State-listed species occurred over two miles away (Henslow’s sparrow). In addition, no State-listed species of concern are known to occur within the Lakefield Junction Substation study area. According to USFWS, one federally-listed threatened species, prairie bush-clover may occur within Jackson County but it has not been recorded within two miles of the substation. The Lakefield Junction Substation is approximately 1.5 miles west of the Toe WMA, an area

containing a complex of wetlands and upland areas where upland sandpiper have been recorded. Based on NWI maps, no wetlands occur in the Lakefield Junction Substation area. The nearest wetland (a freshwater emergent wetland approximately 0.2 acres in size) is located approximately 0.5 mile southwest of the Lakefield Junction Substation expansion area (**Appendix D, Appendix F, and Appendix O**).

Although generally a rural agricultural area, the Lakefield Junction Substation lies on the western edge of a commercial wind farm. It is bounded by 820th Street to the north, 460th Avenue to the east, 810th Street to the south, and 480th Street to the east. All of these county roads, primarily gravel surface around the substation, contain numerous rural residences, farmsteads, and agriculture-related facilities such as barns, shops, and grain bins. Numerous existing transmission lines connect with the Lakefield Substation, including 345 kV, 161 kV and 69 kV lines. These include the existing 161 kV Fox Lake – Lakefield Junction line segment of the Lakefield to Border 161 kV Transmission Line under consideration for double-circuiting with the proposed new 345 kV line for Route A.

7.1.2 Human Settlement

The human settlement specific to Jackson County discussed in **Section 6.5** would generally be applicable to the proposed Lakefield Junction Substation expansion. There are a number of structures within 0.5 mile of the expansion area, with the closest structures approximately 780 feet northwest of the Lakefield Junction Substation. The structures within 0.5 mile are identified in **Table 42. Appendix F** shows residences near the Lakefield Junction Substation.

Table 42. Structures Located within 0.5 Mile of the Lakefield Junction Substation

Structure	Approximate Proximity to Lakefield Junction Substation
Outbuilding	780 feet from NW corner
Outbuilding	780 feet from NW corner
Outbuilding	890 feet from NW corner
Outbuilding	950 feet from NW corner
House	980 feet from NW corner
Wind Turbine	1,030 feet from Expanded SE corner
Outbuilding	1,160 feet from SW corner
Outbuilding	1,400 feet from NW corner
Outbuilding	1,400 feet from NW corner
House	1,420 feet from Expanded NE corner
House	1,440 feet from NW corner
Outbuilding	1,440 feet from NW corner
Outbuilding	1,500 feet from NW corner
Outbuilding	1,530 feet from Expanded NE corner
Outbuilding	1,570 feet from NW corner
Outbuilding	1,910 feet from Expanded NE corner
Wind Turbine	1,920 feet from Expanded NE corner
Wind Turbine	1,940 feet from SW corner
Outbuilding	2,000 feet from NW corner
Outbuilding	2,050 feet from Expanded NE corner
Outbuilding	2,070 feet from Expanded NE corner
Outbuilding	2,070 feet from NW corner
Outbuilding	2,110 feet from NW corner
House	2,140 feet from Expanded NE corner
Grain Bins	2,180 feet from Expanded NE corner
Wind Turbine	2,220 feet from Expanded NE
Wind Turbine	2,230 feet from SW corner
Grain Bins	2,240 feet from SW corner
Outbuilding	2,260 feet from SW corner
Outbuilding	2,290 feet from SW corner
Wind Turbine	2,400 feet from NW corner
House	2,460 feet from SW corner

7.1.3 Substation Noise

Substations generate noise due to a phenomenon known as magnetostriction. Magnetostriction is simply the magnetization and return to normal of the metal inside a transformer under an alternating voltage and current. This process causes expansion and contraction of the metal, which leads to vibrations that are perceived as audible noise. Transformers also generally have cooling fans or pumps to keep the units at the proper operating temperature. The cooling equipment generates noise in addition to the magnetostriction. Most of the other equipment at a substation is either silent, or generates minimal noise in comparison to the transformers.

The Project will connect to the existing Lakefield Junction Substation. This substation currently contains transformers and other electrical equipment. A new 345 kV bay, using one position, and a future bay position to allow for three future connections will be installed as part of the Project. No additional transformers will be added at the Lakefield Substation as part of the proposed substation expansion. No changes in noise levels around the substation will occur. Residences in the vicinity of the substation, the closest of which is located 980 feet from the northeast corner of the expanded Lakefield Junction Substation, would not experience any changes in noise levels from the operation of the expanded substation.

7.1.4 Land Based Economies

The land based economies specific to Jackson County discussed in **Section 6.6** would generally be applicable to the proposed Lakefield Junction Substation expansion.

7.1.5 Archaeological and Historic Resources

Background research on known cultural resources in the Study Area was conducted in July 2012 in the SHPO Archaeology Inventory and the Standing Structures Inventory in St. Paul, Minnesota. This initial investigation was based on the Study Area for the Project, within which alternative routes would be developed. In January 2013, the data were further analyzed based on specific routes retained for further analysis and additional research was conducted in public online records. A buffer of three miles was investigated at the Lakefield Junction Substation. Archaeological sites and historic properties and resources were included in this analysis.

There are 43 NRHP listed sites, structures, properties, or districts in Jackson County. Historic properties of various types may be designated as location-restricted, for reasons of preservation, protection, or privacy.

The Lakefield Junction Substation is an existing substation located approximately one mile east of the City of Lakefield in Jackson County, Minnesota. No historic architectural structures are recorded within the three-mile buffer previously identified around the substation site. Immanuel Cemetery, a cultural resource, is located approximately 2.25 miles northwest of the Lakefield Junction Substation. There are also no cultural resources recorded within 1,000 feet of the Lakefield Junction Substation. One recorded archaeological site is located on the boundary of the three-mile buffer. A summary of Archaeological Resources is available in **Table 43**.

Table 43. Archaeological Resources Near the Lakefield Junction Substation

Site Type	Within 3-mile Buffer	Within 1,000 feet	Eligible or Listed
Lithic Scatter	1	0	0
Total	1	0	0

Source: SHPO Archaeology Inventory and Standing Structures Inventory

7.1.6 Natural Environment

As defined by the USGS, the Lakefield Junction Substation is located in the Upper Mississippi – Region 7 water resource region and the Des Moines Headwaters (HUC 07100001) watershed.

No FEMA-designated 100-year floodplains, intermittent or perennial streams (including PWI waters and 303(d)-listed waters), navigable waters, trout streams, PWI and non-PWI lakes, State-protected calcareous fens, or NWI and PWI wetlands are located within the proposed Lakefield Junction Substation expansion area. Additionally, the expansion area is not located on any USDA WRP or USFWS WPA lands.

Of the groundwater provinces in the State of Minnesota, the Lakefield Junction Substation and proposed expansion area is located in the Western Province. According to the County Well Index, managed by the Minnesota Department of Health, no groundwater wells or wellhead protection areas are located in the

proposed substation expansion area. Details regarding the Western Province and the County Well Index were previously provided in **Section 6.8.6**.

(a) *Flora*

The general flora description previously provided in **Section 6.8.8** would be applicable to the proposed Lakefield Junction Substation expansion area. Based on aerial photography and USGS land cover data, the land parcel to be used for the expansion area is currently used for crop production. The substation site is not located on any MCBS or RIM lands.

(b) *Fauna*

The general fauna description previously provided in **Section 6.8.9** would be applicable to the proposed Lakefield Junction Substation expansion area. This area is not located on any USFWS- or MnDNR-protected game refuge, WPAs, or WMA lands.

7.1.7 Rare and Unique Natural Resources

The protected species discussed in **Section 6.9** would be applicable to the proposed Lakefield Junction Substation expansion. No federally- or State-listed threatened or endangered species are known to occur within two miles of the Lakefield Junction Substation. The nearest sighting of a State-listed species was recorded over two miles away (Henslow's Sparrow, endangered).

7.1.8 Impacts and Mitigation

The primary impact from expansion of the Lakefield Junction Substation would be the conversion of three acres of cropland to substation. The expanded substation area that would be graveled and contain equipment and the additional area fenced around the substation. As the area is generally flat and contains no established drainages, wetlands, or floodplains, erosion during site preparation and grading is not anticipated. Following site grading and placement of gravel, soil disturbance and exposure would generally cease, minimizing any potential for erosion. No tree clearing would be required for substation expansion and no residences or other structures would be affected. The larger substation would slightly alter the viewshed of the area but not significantly as the viewshed is currently dominated by numerous transmission lines, communications towers and wind turbines.

During construction of a new substation, avoidance is the primary form of mitigation and is often developed during the Project planning process. Avoidance of resources, historic or prehistoric, may include minor adjustments to the Project design. Certain areas may also be identified as environmentally sensitive areas to be left undisturbed by the Project. At this time, no mitigation measures are anticipated to be required for the expansion of the Lakefield Junction Substation related to wetlands, rare and unique natural resources, or architectural, archaeological, historic, or cultural resources. Construction of the Lakefield Junction Substation expansion would not proceed until a SWPPP was developed and an NPDES permit was obtained from the MPCA. In the event that cultural resources would be discovered during construction, activity on the site would be halted and the SHPO and its State Archaeologist would be notified. Appropriate measures would be implemented to protect any discovered resources before construction would proceed at the site. If any unmarked burials, human remains, or grave good are discovered during expansion of the Lakefield Junction Substation, the State Archaeologist would be notified before any further construction activities would be allowed to proceed on the site.

7.2 HUNTLEY SUBSTATION

ITC Midwest proposes to construct a new substation approximately 1.3 miles south of its existing Winnebago Junction Substation to accommodate the necessary facilities for the Project. Although an expansion of the Winnebago Junction Substation was initially contemplated for the Project, after completing further engineering and land use analysis, ITC Midwest determined that expansion at this location was not feasible. The existing Winnebago Junction Substation is constrained due to its proximity to the Blue Earth River and US Highway 169. In response to these constraints, ITC Midwest concluded that a new site would be necessary to accommodate the additional 345 kV equipment for the proposed Project. Additionally, the new Huntley Substation would be constructed to accommodate 161 kV and 69 kV facilities from the Winnebago Junction Substation for the local electrical system in the area. In December 2012, ITC Midwest purchased a parcel of approximately 40 acres that it proposes to use for the Huntley Substation.

7.2.1 Description of Environmental Setting

The proposed Huntley Substation is located in Faribault County, Section 14 of Verona Township. This area is situated within the Western Corn Belt Plains ecoregion of Minnesota as defined by the USGS. This ecoregion is typically flat

with gently rolling topography, with an average elevation of 1,500 feet above sea level, and averages 24 to 36 inches of precipitation annually. Agricultural land accounts for the vast majority of this ecoregion, with typical crops including corn, soybeans, wheat, and alfalfa. The USGS NLCD lists two land cover types (Developed, Medium Intensity and Cultivated Crops) for the proposed Huntley Substation area. The site of the proposed Huntley Substation is currently a cropfield. The existing Lakefield to Border 161 kV Transmission Line extends along the substation site, un-maintained portions of 160th Street bound the south side of the substation, and a dirt and sand operation is located to the east. The terrain slopes away from the site to the west and north, with riparian woodland and the Blue Earth River located to the east. Cropland and Blue Earth River floodplain occur to the north.

The proposed Huntley Substation area is dominated by Shorewood and Minnetonka soil units (**Appendix M**). These soils units are typically considered to be a silty clay loam, are typically used for agricultural purposes, are moderately well drained to poorly drained, and are considered prime farmland according to the NRCS.

The proposed Huntley Substation lies within the Minnesota River Basin watershed. The nearest perennial waterways are the Blue Earth River and South Creek, approximately 260 feet southeast and 0.5 mile south respectively, of the proposed Huntley Substation. Both the Blue Earth River and South Creek are listed as PWIs.

Commonly associated agricultural vegetation of southern Minnesota includes corn, soybean, alfalfa, and winter wheat. Typical prairie vegetation of southern Minnesota includes big bluestem, little bluestem, indiangrass, sideoats grama, prairie june-grass, and sun sedge.

According to the MnDNR's NHIS, no federally- or State-listed threatened or endangered species are known to occur within one mile of the proposed Huntley Substation (MnDNR 2012i). In addition, no State-listed species of concern are known to occur within the proposed Huntley Substation site. The nearest State-listed species occurs within two miles of the proposed Huntley Substation site. NHIS lists two State-listed threatened species, round pigtoe (*Pleurobema sintoxia*) and mucket (*Actinonaias ligamentina*) mussels and three State-listed mussel species of concern, fluted-shell (*Lasmigona costata*), creek heelsplitter (*Lasmigona compressa*), and black sandshell (*Ligumia recta*) are known to occur between one and two miles from the substation. No federally protected species are noted as

potentially occurring in Faribault County according to USFWS. Based on NWI maps, no wetlands occur at the proposed Huntley Substation site. Most wetlands in the area are associated with the nearby streams and rivers. The nearest wetland is located approximately 200 feet southeast of the Huntley Substation site. It is associated with the Blue Earth River and is classified as a PFO wetland.

The location of the proposed Huntley Substation near the meandering Blue Earth River and associated floodplain make this area more inaccessible than other areas in the region as a result of few roads and limited bridges over the river. Most of the lands in the vicinity of the substation are farmed with wooded riparian areas adjacent to the river and creek. Only three residences and a hunting cabin occur within 0.5 mile of the substation site, with two of the residences located on the opposite side of the Blue Earth River.

7.2.2 Human Settlement

The human settlement information specific to Faribault County discussed in **Section 6.5** would generally be applicable to the proposed Huntley Substation.

There are a number of structures located within 0.5 mile of the Huntley Substation site. These structures are summarized in **Table 44**. The distances listed in the table were measured from the parcel boundary as no design layout for the substation is yet available. It is likely, therefore, that the structures will be located a greater distance from the substation as only nine acres of the 40-acre parcel will be used for the Huntley Substation. **Appendix F** shows residences near the Huntley Substation site.

Table 44. Structures Located Within 0.5 Mile of the Huntley Substation

Structure	Approximate Proximity to Huntley Substation Site
Hunting Cabin	460 feet from SW corner
Outbuilding	1,560 feet from SE corner
House	1,650 feet from SE corner
House	2,080 feet from NW corner
Outbuilding	2,160 feet from NW corner
Outbuilding	2,190 feet from NW corner
Outbuilding	2,240 feet from SE corner
Outbuilding	2,330 feet from SE corner
House	2,420 feet from SE corner
Outbuilding	2,610 feet from SW corner

*Several of these structures are also included in the discussion in **Section 7.3.5** regarding interconnections between Winnebago Junction Substation and the new Huntley Substation

7.2.3 Substation Noise

The construction of the Project will require one new transformer to be installed at the new Huntley Substation. The new transformer and associated equipment would create a new noise source for the surrounding area. To estimate these new noise levels, acoustical modeling was performed using case data and methodology prescribed in ISO 9613-2, Attenuation of sound during propagation outdoors - Part 2: General method of calculation (ISO 1996).

For the Project, ITC Midwest proposes to install a 345 kV/161 kV transformer with a rating of 450 megavolt-ampere (“MVA”). The sound pressure profile for the transformer was calculated using the equations from the Electric Power Plan Environmental Noise Guide such that the transformer would, conservatively, emit a sound pressure level of 86 dBA per the methodology listed in IEEE C57.12.90-1999, Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers (EEI 1984). The expected sound power profile created and modeled for the transformer is shown below in **Table 45**. Transformer noise calculations are generally conservative, often producing numbers higher than actual noise conditions. It is likely that the normal operation of the transformer at the Huntley Substation will result in noise levels lower than those in calculations.

Although two 161 kV/69 kV transformers will also be installed at the Huntley Substation, the 345 kV/161 kV transformer would be the dominant noise source at the substation. Noise generated by the 161 kV/69 kV transformers was considered, but calculations would not result in increased noise levels above those generated by the 345 kV/161 kV transformer.

Table 45. Expected Transformer Sound Profile

Source	Maximum Transformer Rating (MVA)	Transformer Sound Power Level (Lw) at Octave Band Frequency (Hz) (dB)									Overall Sound Level (dBA)
		31.5	63	125	250	500	1000	2000	4000	8000	
Transformer	450	103.2	109.2	111.2	106.2	106.2	100.2	95.2	90.2	83.2	106.6

Noise levels were modeled for the closest residences and also for the nearest structure, a hunting cabin. The modeled sound pressure levels for each receptor are shown in **Table 46** along with the applicable MPCA nighttime noise limits, which are the most restrictive. The distances provided are from the boundaries of the 40-acre Huntley Substation site because ITC Midwest has not determined where the nine-acre fenced area will be located on the parcel. Distances between the receivers and the transformer will likely be greater than those estimated because the transformer will be situated within the nine-acre fenced substation that will be placed on the 40-acre parcel.

Table 46. Expected Sound Levels Assuming Maximum Transformer Noise Output at Huntley Substation

Receiver	NAC	Sound Pressure Level (dBA)	Limit L ₅₀ /L ₁₀ (dBA)
Hunting cabin at 460 feet	3	51.1	75/80
Residence at 1,650 feet	1	34.7	50/55
Residence at 2,080 feet	1	34.5	50/55
Residence at 2,420 feet	1	34.2	50/55

The model-predicted sound levels are L_{eq} (1-hour equivalent) values. Due to the nature of transformer noise, the L_{eq} value is equivalent to the L₅₀ and L₁₀ sound levels since the sound from a transformer is constant and does not change with time. The noise levels emitted from the operation of the transformer at the Huntley Substation are predicted not to exceed the MPCA Noise Limits for

applicable NACs. At the time of this Application, the transformer for the Huntley Substation has not been ordered, so all calculations have been performed based on the MVA rating. When ITC Midwest orders transformers for this substation, ITC Midwest will require that the transformers be tested for audible noise at the factory to ensure that actual audible noise will be within the MPCA standards.

7.2.4 Land Based Economies

The land based economies specific to Faribault County discussed in **Section 6.6** would generally be applicable to the proposed Huntley Substation site. A portion of the site is agricultural and a portion was formerly used for mining activities. After construction of the Huntley Substation is complete, if the owned site is approved, ITC Midwest intends to lease out the unfenced area for farming activities.

7.2.5 Archaeological and Historic Resources

Background research on known cultural resources in the area of the Huntley Substation was conducted in July 2012 in the SHPO Archaeology Inventory and in the Standing Structures Inventory in St. Paul, Minnesota. A buffer of three miles was investigated around the Huntley Substation site. Archaeological sites and historic structures or properties were included in the analysis.

There are 13 NRHP-listed sites, structures, properties, or districts in Faribault County. Historic properties of various types may be designated as location-restricted, for reasons of preservation, protection, or privacy.

An archaeological district is located over one mile from the Huntley Substation. The whole district lies within three miles of the proposed Huntley Substation site. The discussion related to regulations by State and federal agencies provided in **Section 6.7** are generally applicable to the proposed Huntley Substation site.

The proposed Huntley Substation is to be constructed in Faribault County, approximately 2.8 miles south of Winnebago, Minnesota. There are 41 archaeological resources within three miles of the proposed substation. These are summarized in **Table 47**. No known archaeological or historic resources are known to exist at the Huntley Substation site.

Table 47. Archaeological Resources Within Three Miles of the Huntley Substation Site

Site Type	Within 3-mile Buffer	Within 1,000 feet	Eligible or Listed
NRHP District	1	0	1
Artifact Scatter	22	1	8
Artifact Scatter & Cemetery	1	0	1
Lithic Scatter	14	1	0
Single Artifact	1	0	0
Type-no data	1	0	0
Historic Data - Mill	1	0	0
Total	41	2	10

Source: SHPO Archaeology Inventory and Standing Structures Inventory

Three historic architectural resources are located within the three-mile buffer around the proposed Huntley Substation Site: two bridges and a school. The unevaluated historic school is located approximately 0.8 mile northeast of the Huntley Substation site. A review was conducted in 1979 by the Winnebago Historical Society. At that time, the building was in good condition and was used as a residence. The Inventory Form contains no other information pertaining to the date the school was constructed, historical uses, or local significance.

There are two bridges within three miles of the Huntley Substation: Bridge Number 4752, on County Highway 10, approximately two miles to the northwest of the Huntley Substation Site; and Bridge Number L5293 on Township Road 92, approximately 0.8 mile to the southeast of the Huntley Substation Site. A review of Bridge No. 4752 was conducted in 1979 by the Winnebago Historical Society. At that time, the bridge was in good condition and was in use. However, the bridge has not been evaluated for NRHP. This bridge was constructed in 1923. The Minnesota Historic Properties Inventory Form contains no other information pertaining to the construction, architecture, or significance of this bridge.

Bridge No. L5293 was reviewed by the Faribault County Historical Society in 1979. It was in good/fair condition and was in use at that time. However, the bridge has not been evaluated for NRHP. In 1978, the MnDOT assessed the bridge for a variety of conditions. This assessment indicated that the steel H-truss bridge, with a 90 foot span, was constructed in 1900. The timber deck was

assessed to be 94 percent sound at that time. These forms contain no other information pertaining to the significance of this bridge.

A summary of the historic architectural resources in this area are provided in Table 48.

Table 48. Historic Architectural Resources Within Three Miles of the Huntley Substation Site

Resource Type	Within 3-mile Buffer	Within 1,000 feet	Eligible or Listed
Bridge	2	0	0
School	1	0	0
Total	3	0	0

Source: SHPO Archaeology Inventory and Standing Structures Inventory

7.2.6 Natural Environment

As defined by the USGS, the proposed Huntley Substation is located in the Upper Mississippi – Region 7 water resource region and the Blue Earth (HUC 07020009) watershed.

No intermittent or perennial streams (including PWI waters and 303(d)-listed waters), navigable waters, trout streams, PWI and non-PWI lakes, State-protected calcareous fens, or NWI and PWI wetlands are located on the proposed Huntley Substation site (**Appendix D** and **Appendix F**). Although the Huntley Substation Site does not lie within the Blue Earth River 100-year floodplain (**Appendix F**), the northwest corner of the site does border the 100-year floodplain of the Blue Earth River. Additionally, the proposed site is not located on any USDA Wetland Reserve Program or WPA lands.

The proposed Huntley Substation is located in the South-Central groundwater province. According to the County Well Index, no groundwater wells or wellhead protection areas are located on the substation site. Details regarding the South-Central Province and the County Well Index were previously provided in **Section 6.8.6**.

(a) Flora

The general flora description previously provided in **Section 6.8.8** would be applicable to the proposed Huntley Substation. Based on aerial photography,

USGS land cover data, and site investigation, the land parcel to be used for the substation is currently used for crop production. ITC Midwest intends to rent out the site for continued crop production until the Project is constructed. The substation site is not located on any MCBS lands; however, the northwest corner of the site does border a RIM land parcel.

(b) *Fauna*

The general fauna description previously provided in **Section 6.8.9** would be applicable to the proposed Huntley Substation site. This area is not located on any USFWS- or MnDNR-protected game refuges, WPAs, or WMA lands.

7.2.7 Rare and Unique Natural Resources

The proposed Huntley Substation would be located entirely in Faribault County which is not known to contain any federally-listed threatened or endangered species. According to the MnDNR's NHIS, no federally- or State-listed threatened or endangered species or State-listed species of special concern are known to occur within one mile of the proposed Huntley Substation site.

7.2.8 Impacts and Mitigation

The impacts and mitigation measures discussed in **Section 7.1.8** for the Lakefield Junction Substation expansion would generally be the same as those for the new Huntley Substation. The primary impact from substation construction would be the conversion of cropland to substation property. A total of approximately nine acres would be taken out of agricultural production, including the new substation area that would be graded and covered with rock and would contain equipment within the area fenced around the substation. ITC Midwest intends to allow the remaining tillable acres of the parcel to be farmed after construction of the Project is completed. As the area is generally flat and contains no established drainages, wetlands, or floodplains, erosion during site preparation and grading is not anticipated. BMPs will be implemented to ensure there is no runoff from the site. Following site grading and placement of gravel, soil disturbance and exposure would generally cease, minimizing any potential for erosion. No tree clearing on the site would be required.

The new substation would slightly alter the viewshed of the area but not significantly as the viewshed currently contains transmission lines and is a considerable distance from any residences, all of which are screened by

vegetation from a view of the substation. Some improvements to 160th Street, which accesses the substation, may be necessary. The street generally ends at the substation location where it is a minimum maintenance road. It does not access any residences but would likely need to be improved to accommodate heavy truck traffic and delivery of equipment. ITC Midwest will work with the township to obtain permissions necessary to upgrade 160th St.

During construction of a new substation, avoidance is the primary form of mitigation and is often developed during the Project planning process. Avoidance of resources, historic or prehistoric, may include minor adjustments to the Project design. Certain areas may also be identified as environmentally sensitive areas to be left undisturbed by the Project. At this time, no mitigation measures are anticipated to be required for the construction of the Huntley Substation related to wetlands, rare and unique natural resources, or architectural, archaeological, historic, or cultural resources. Construction of the Huntley Substation would not proceed until a SWPPP was developed and an NPDES permit was obtained from the MPCA. In the event that cultural resources would be discovered during construction, activity on the site would be halted and the SHPO and its State Archaeologist would be notified. Appropriate measures would be implemented to protect any discovered resources before construction would proceed at the site. If any unmarked burials, human remains, or grave good are discovered during construction of the Huntley Substation, the State Archaeologist would be notified before any further construction activities would be allowed to proceed on the site.

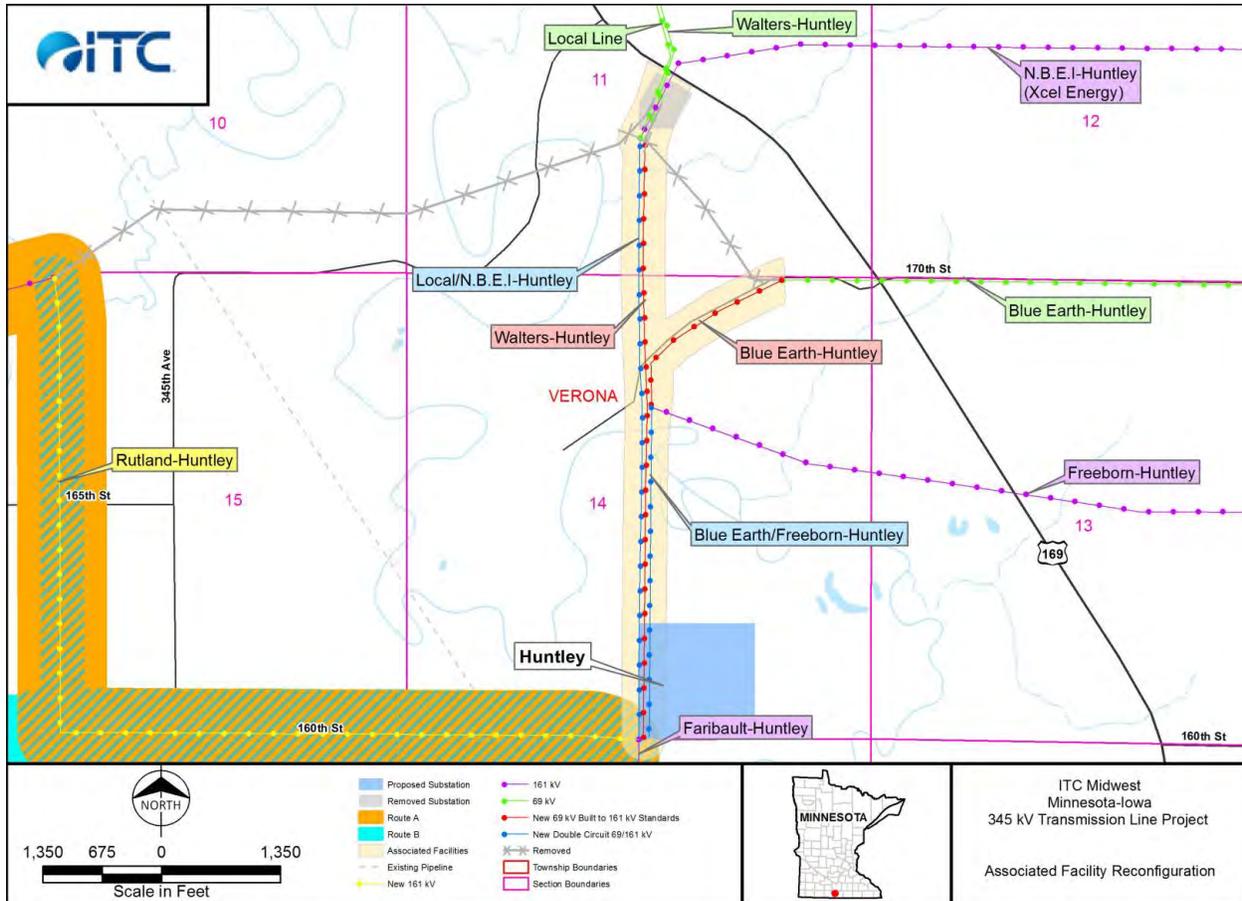
7.3 161 kV INTERCONNECTIONS AT HUNTLEY SUBSTATION

ITC Midwest proposes to reconfigure the terminations of the 161 kV and 69 kV transmission lines at the Winnebago Junction Substation to the Huntley Substation. The Winnebago Junction Substation is due for major upgrades, including a new transformer because of the age of the existing equipment. As a result of this requirement for major re-construction and limited space to expand the Winnebago Junction Substation to accommodate the new 345 kV equipment, ITC Midwest determined it would be appropriate to effectively move the Winnebago Junction Substation equipment to the Huntley Substation, rather than having two substations only 1.3 miles apart.

The new Huntley Substation would be constructed as a 345/161/69 kV substation and the Winnebago Junction Substation decommissioned. The 161 kV and 69 kV systems would still need to be maintained. These lines would be

reconfigured to terminate into the Huntley Substation, rather than the Winnebago Junction Substation (**Figure 34**). The portions of the Blue Earth and Walters 69 kV lines that need to be reconfigured for this new termination point are proposed to be constructed to 161 kV standards but operated at 69 kV, as indicated on the map.

Figure 34. Proposed Reconfiguration of Transmission Lines Near the Huntley Substation



Lines approaching the Winnebago Junction Substation from the south would end at the Huntley Substation. Lines connecting to Winnebago Junction Substation from the north would extend south, primarily along the existing rights-of-way no longer needed by the lines originating from the south that would terminate at the Huntley Substation. Several existing lines would be co-located to reduce the need for additional right-of-way.

This change to the overall system in this area would require that the 161 kV and 69 kV transmission lines that currently terminate at the Winnebago Junction

Substation would need to be reconfigured to terminate at the Huntley Substation. Detailed figures showing the reconfiguration of the existing lines are provided in **Appendix F**.

Along 170th Street, a right-of-way of 150 feet would be needed for the Blue Earth line. South of 170th Street to the Huntley Substation, the right-of-way currently occupied by the Faribault – Winnebago Junction 161 kV line would be expanded to 350 feet for the parallel construction of the Local/N.B.E.I., Walters, and Blue Earth/Freeborn lines. North of 170th Street, the existing right-of-way would be expanded to 200 feet for the parallel construction of the Local/N.B.E.I. and Walters lines.

7.3.1 Description of Environmental Setting

The Huntley Substation site is wholly in the Minnesota River Prairie Subsection, where loamy ground moraine is the dominant landform and the topography is level to gently rolling. The area is heavily influenced by the presence of the Blue Earth River which meanders south through Faribault County. While much of this area is farmed, wooded riparian corridors occur along the river and its larger tributaries and in adjacent floodplain areas. Rural residences and farmsteads are scattered throughout the area with residences generally concentrated along U.S. Highway 169.

7.3.2 Human Settlement

The human settlement information specific to Faribault County discussed in **Section 6.5** and further for the Huntley Substation in **Section 7.2.2** would generally be applicable to the 161 kV interconnections at the Huntley Substation. Numerous cultural resources sites are known from the area between and around the Winnebago Junction and Huntley substations. However, none of these sites are crossed by any of the existing lines or the reconfiguration required for the project. **Appendix F** shows the residences near these associated facilities.

The structures located near the reconfigured lines are summarized in **Table 49**.

Table 49. Structures Located Within 0.5 Mile of the Reconfigured Transmission Lines Between the Winnebago Junction and Huntley Substations

Structure	Approximate Proximity to Lines*
House	320 feet from line
Hunting Cabin	460 feet from line
House	920 feet from line
Outbuilding	920 feet from line
Outbuilding	920 feet from line
Outbuilding	940 feet from line
Outbuilding	970 feet from line
Outbuilding	1,090 feet from line
Hog Barn	1,470 feet from line
Hog Barn	1,520 feet from line
Hog Barn	1,540 feet from line
Outbuilding	1,540 feet from line
Outbuilding	1,550 feet from line
Outbuilding	1,620 feet from line
House	1,660 feet from line
House	2,290 feet from line

*Several of these structures are also included in the discussion in Section 7.2.5 related to the new Huntley Substation site

7.3.3 161 kV Associated Facilities Noise

The area proposed for the reconfiguration of the 161 kV associated facilities is currently used by 161 kV transmission lines, with the exception of the 2.25-mile segments of Route A and Route B where Rutland – Winnebago Junction is proposed to be co-located with the 345 kV transmission facilities. The calculated maximum noise levels for the 161 kV associated facilities are summarized in Section 6.5.4.

7.3.4 Land Based Economies

The land based economies information specific to Faribault County discussed in Section 6.6 and for the Huntley Substation in Section 7.2.4 would generally be applicable to the 161 kV interconnections at the Huntley Substation.

7.3.5 Archaeological and Historic Resources

Background research on known cultural resources in the area of the Huntley Substation was conducted in July 2012 in the SHPO Archaeology Inventory and in the Standing Structures Inventory in St. Paul, Minnesota. A buffer of three miles was investigated for the Huntley Substation site. Archaeological sites and historic structures or properties were included in the analysis. The data were further analyzed in January 2013 based on specific routes and additional research was conducted in public online records.

There is one archaeological site located within 1,000 feet of the proposed associated facility transmission lines shown on **Figure 34**. No cultural resources are recorded within 200 feet of any of the routes in the interconnection area. No historic cemeteries are recorded within one mile of the routes in the interconnection area. Archaeological and historic resources within 2,000 feet of the routes are summarized in **Table 50**.

Table 50. Archaeological and Historic Resources Within 2,000 Feet of the Routes for the 161 kV Associated Facilities

Site Type	Within 1,000 feet	Within 2,000 feet	Eligible or Listed
Archaeological District	0	0	0
Lithic Scatter	0	0	0
Artifact Scatter	1	0	0
Total	1	0	0

Source: SHPO Archaeology Inventory and Standing Structures Inventory

7.3.6 Natural Environment

As defined by the USGS, those transmission lines affected by the proposed Winnebago Junction Substation reconfiguration are located in the Upper Mississippi – Region 7 water resource region and the Blue Earth (HUC 07020009) watershed.

Of the 161 kV transmission lines to be reconfigured as part of the Project, only the Rutland – Winnebago Junction line crosses any NWI wetlands (**Appendix F**). This line currently crosses three PEM wetlands. After reconfiguration is complete, no NWI wetlands are anticipated to be crossed by any of the 161 kV

associated facilities. No PWI wetlands are currently crossed and none would be crossed after reconfiguration of the 161 kV associated facilities.

The proposed reconfiguration would not result in any crossings of PWI lakes and wetlands, navigable waters, trout streams, or State-protected calcareous fens. Additionally, the proposed transmission line reconfiguration into Huntley Substation would not create any new crossings of any USDA Wetland Reserve Program lands, USFWS WPAs, or MnDNR WMAs.

Those transmission lines affected by the Winnebago Junction Substation reconfiguration are located in the South-Central groundwater province. According to the County Well Index, no groundwater wells or wellhead protection areas would be affected by the reconfiguration. Details regarding the South-Central Province and the County Well Index were previously provided in **Section 6.8.6**.

(a) *Flora*

The general flora description previously provided in **Section 6.8.8** and in **Section 7.2.6** would be applicable to the area currently crossed by the transmission lines terminating at the Winnebago Junction Substation. Reconfiguration of the existing lines is anticipated to require only minimal additional woodland clearing as most of the right-of-way is either already cleared for the existing 161 kV transmission lines or cropland. Potential impacts during construction may include disruption to farming activities and crop damage. Construction would occur primarily along existing right-of-ways.

(b) *Fauna*

The general fauna description previously provided in **Section 6.8.9** and for the Huntley Substation in **Section 7.2.6** would be applicable to the area currently crossed by the transmission lines terminating at the Winnebago Junction Substation. The rerouting of these transmission lines from the Winnebago Junction Substation to the Huntley Substation would not eliminate any existing crossings or cause any new crossings of any USFWS- or MnDNR-protected game refuges, WPAs, or WMA lands.

7.3.7 Rare and Unique Natural Resources

The protected species discussed in **Section 6.9** and **Section 7.2.7** would be applicable to the proposed Winnebago Junction Substation reconfiguration. No

rare or unique natural resources are known to occur between the Winnebago Junction and Huntley substations. No federally-listed species occur within Faribault County. The nearest known occurrence of a State-listed species was over 900 feet to the southwest of the Winnebago Junction Substation in the Blue Earth River. Black sandshell (special concern), mucket (threatened), fluted-shell (special concern), round pigtoe (threatened), and creek heelsplitter (special concern) have been reported in this portion of the river.

7.3.8 Impacts and Mitigation

The impacts and mitigation measures discussed in **Chapter 6** for the environmental setting, human settlement, land-based economies, archaeological and historic resources, natural environment, and rare and unique natural resources would be applicable to the proposed 161 kV line reconfigurations. Portions of the existing Lakefield to Border 161 kV Transmission Line would be removed from several existing water crossings. The primary impact from reconfiguration of the existing lines would be any ground disturbance associated with equipment accessing the lines along the existing rights-of-way, minimal additional clearing that may be required, and as a result of pole structure removal and replacement. Soil disturbance would be minimal. Erosion control measures will be developed in the Project SWPPP and would be implemented as appropriate to protect the Blue Earth River and other nearby streams and drainages. Minimal additional right-of-way clearing is anticipated. Where structures are placed in cropland, they would create a minor obstacle for farming operations. Area wildlife would experience temporary disturbance due to construction activity and human presence. Following completion of line reconfiguration, the Winnebago Junction Substation would be decommissioned and additional area around the site returned to a more natural state, although transmission lines would still traverse the site.

Substation and transmission line noise are not anticipated to exceed MPCA noise limits for applicable NAC. Further analysis of transmission line noise is provided in **Section 6.5.4**.

The area of the 161 kV associated facility reconfiguration routes is located approximately one mile from an archaeological district where there are numerous archaeological sites. While no known sites are crossed by any of the existing lines or proposed reconfiguration, construction would be stopped at the location of any inadvertent archaeological site discovered during construction. ITC Midwest will consult with the Minnesota SHPO office to determine the

nature and extent of the find and implement an appropriate plan to address the resources encountered.

7.4 CONNECTOR SEGMENTS

ITC Midwest developed several connector segments along the Project, as discussed in **Section 5.4**. These connector segments were developed to provide strategic routing opportunities if the Commission determined that portions of Route A and Route B should be used or if certain environmental features or areas of development should be avoided by the Project. Five connector segments cross land not crossed by either Route A or Route B. These five connector segments are as follows: two near Jackson Municipal Airport, one near Fox Lake, and two near the Pilot Grove Lake WPA. Detailed maps of the connector segments are available in **Appendix D**. Detailed information on the impacts associated with the connector segments is available in **Appendix H**.

7.4.1 Jackson Municipal Airport - West

The connector segment to the west of the Jackson Municipal Airport (“JMA-W”) is approximately four miles east of the Lakefield Junction Substation in Section 5 of Des Moines Township. JMA-W is approximately 0.5 mile in length and follows field lines for half of its length. There are no homes within 1,000 feet of JMA-W. Two types of farmland classification are crossed by the connector segment: Prime Farmland if Drained and Farmland of State Importance. Approximately 10 acres of the JMA-W right-of-way is cropland and two acres of the right-of-way is grassland. No wetlands, streams, rivers, or lakes are crossed by this connector segment. One WMA is within one mile of JMA-W (Bootleg Lake WMA), but no environmental sites are crossed by JMA-W. No archaeological or historic sites are crossed by the connector segment. Additional details on the JMA-W connector segment are provided in **Appendix H**.

7.4.2 Jackson Municipal Airport - East

The connector segment to the east of the Jackson Municipal Airport (“JMA-E”) is located in Sections 32 and 33 of Enterprise Township and Sections 4 and 5 of Wisconsin Township. JMA-E is approximately 1.5 miles in length and follows 570th Avenue for its entire length. There are no homes within 1,000 feet of JMA-E. Two types of farmland classification are crossed by the connector segment: Prime Farmland and Prime Farmland if Drained. Approximately 22 acres of the JMA-E right-of-way is cropland and 15 acres of the right-of-way is grassland. No other

land cover types are within the right-of-way. No wetlands, streams, rivers, or lakes are crossed by this connector segment. One WMA is within one mile of JMA-E (Arzt WMA), but no environmental sites are crossed by JMA-E. No archaeological or historic sites are crossed by the connector segment. Additional details on the JMA-E connector segment are provided in **Appendix H**.

7.4.3 Fox Lake - West

The connector segment to the west of Fox Lake (“FL-W”) is located in Section 1 of Jay Township and Section 36 of Elm Creek Township. FL-W is approximately 1.5 miles in length and follows an existing 69 kV transmission line and abandoned rail bed. There are no homes within 1,000 feet of FL-W. Three types of farmland classification are crossed by the connector segment: Prime Farmland, Prime Farmland if Drained, and Farmland of State Importance. Approximately 22 acres of the FL-W right-of-way is cropland and 15 acres of the right-of-way is grassland. No other land cover types are within the right-of-way. One wetland (PEM) is within the connector segment but it is not within the right-of-way. FL-W crosses two streams, Judicial Ditch No. 37 and Lily Creek, but does not cross any lakes. The existing 69 kV transmission line and FL-W cross one MCBS site: Elm Creek 36. Three WMAs are within one mile of FL-W (Four Corners WMA, Fox Lake WMA, and Caron WMA), but no WPAs, WMAs, SNAs, or State parks are crossed by FL-W. No archaeological or historic sites are crossed by the connector segment. Additional details on the FL-W connector segment are provided in **Appendix H**.

7.4.4 Pilot Grove Lake WPA - North

The connector segment to the north of the Pilot Grove Lake WPA (“PG-N”) is located in Sections 1 and 2 of Pilot Grove Township. PG-N is approximately one mile in length and follows a field line for its entire length. There are no homes within 1,000 feet of PG-N. Two types of farmland classification are crossed by the connector segment: Prime Farmland and Prime Farmland if Drained. Approximately 23 acres of the PG-N right-of-way is cropland and one acre of the right-of-way is grassland. No other land cover types are within the right-of-way. One wetland (PEM) is within the connector segment, but it is not within the right-of-way. No streams, rivers, or lakes are crossed by PG-N. One WPA is within one mile of PG-N, but no environmental sites are crossed by PG-N. Three archaeological sites and two historic sites are within one mile of the connector segment and only two of the archaeological sites are crossed by PG-N. These two

sites are not listed on the NRHP. Additional details on the PG-N connector segment are provided in **Appendix H**.

7.4.5 Pilot Grove Lake WPA - South

The connector segment to the south of the Pilot Grove Lake WPA (“PG-S”) is located in Sections 11 and 12 of Pilot Grove Township. PG-S is approximately one mile in length and follows a field line for approximately half its length. There are no homes within 1,000 feet of PG-S. Three types of farmland classification are crossed by the connector segment: Prime Farmland, Prime Farmland if Drained, and Farmland of State Importance. Approximately 24 acres of the PG-S right-of-way is cropland. No other land cover types are within the right-of-way. No wetlands, streams, rivers, or lakes are crossed by PG-S. One WPA is within one mile of PG-S, but no environmental sites are crossed by PG-S. Three archaeological sites and two historic sites are within one mile of the connector segment, but none are crossed by the connector segment. Additional details on the PG-S connector segment are provided in **Appendix H**.

7.4.6 Impacts and Mitigation

No impacts to human settlement, public health and safety, public services, land use, floodplains, groundwater resources, land-based economies, rare and unique natural resources, or historic resources are anticipated so no mitigative measures are required. The connector segments cross agricultural fields and landowners will be compensated for crop damage or soil compaction, if it occurs. Where a connector segment crosses a stream, river, or other waterway, appropriate measures discussed in **Section 6.8.4(a)** and **Section 6.8.5(a)** would be used. Where FL-W crosses an MCBS site, ITC Midwest will coordinate with the MnDNR to minimize impacts and confine the centerline to the centerline of the existing 69 kV transmission line. If FL-W were selected for the Project, ITC Midwest will coordinate with the MnDNR and the USFWS to ensure that transmission lines are marked in this area to minimize the risk of avian interactions with the lines. Where PG-N crosses two archaeological sites, pedestrian surveys will be performed to identify the boundaries of the resource sites, and ITC Midwest will work with SHPO to identify appropriate avoidance or mitigation measures in the design and placement of structures.