

7.0 ENVIRONMENTAL INFORMATION: ASSOCIATED FACILITIES, PREFERRED ROUTE

The Project includes construction of various associated facilities that are required for the completion of the Project. This Section describes the environmental setting of the existing substations that require expansion (Lyon County and Lake Marion) and the environmental setting of new substation locations (Hazel Creek Substation south area, Cedar Mountain Substation south area, Helena Substation south area and the Hampton Substation area) for the Preferred Route.

This Section also describes the environmental setting of the transmission system interconnections at the Cedar Mountain, Helena and Hampton substations. To accomplish these interconnections, Applicants may need to reroute existing or proposed transmission lines within or near the proposed new Cedar Mountain, Helena and Hampton substation areas. If the new substation location selected is not adjacent to the existing transmission lines, a reroute may be necessary within the areas identified. The proposed new substation areas have been sited within 1.25 miles of the existing and proposed transmission lines to accommodate these interconnections. Accordingly, the potential impacts in this section are for the 1.25 mile wide area around these four new substations. This same width is used for the Hazel Creek Substation area.

For the Minnesota Valley Substation no expansion will be required (only equipment additions); therefore, it is not included in this Section. For the remaining substations which will be expanded, impacts are described for the anticipated expanded substation area. The associated facilities are described in detail in Section 2.3.

The Applicants reviewed environmental information in their analysis of the Project area and compared the existing environmental conditions with the Project impacts associated with each route section. The environmental resource impacts are tabulated in Appendix E.

7.1 HAZEL CREEK SUBSTATION SOUTH AREA

The Hazel Creek Substation South area is just west of TH 23 and on the east side of County Highway 43. Appendix D.3 identifies the proposed substation location areas. The Applicants require a minimum of 15 acres, and up to 40 acres, for the proposed substation construction, which is discussed in Section 2.4.2.

7.1.1 DESCRIPTION OF ENVIRONMENTAL SETTING

Refer to Section 6.1 for a description of the environmental setting in this region of Minnesota. The proposed substation area is primarily flat in an agricultural setting in Yellow Medicine County. There are small, farmed drainages in the vicinity and several homesteads are present throughout the landscape. The elevation of the Hazel Creek Substation South area ranges from 1,000 to 1,100 feet AMSL.

7.1.2 HUMAN SETTLEMENT

7.1.2.1 Public Health and Safety

Proper safeguards will be implemented for construction and operation of the substation facility. All substations will be designed to meet local, State, and NESC recommended safety requirements and electrical clearances. Construction crews and/or contract crews will comply with local, State, NESC, and CapX2020 standards regarding installation of facilities and standard construction practices. Established Applicants' and industry safety procedures will be followed during and after

construction of the substation. This will include clear signage during all construction activities. When construction is complete, all substations will be fenced appropriately and proper signage installed to alert the public to the dangers of high-voltage power conduction.

Impacts and Mitigation

The construction and operation of the proposed substation is not anticipated to impact public health and safety.

7.1.2.2 Commercial, Industrial, Residential Land Use

The predominant land use in the Hazel Creek Substation South area is open agricultural land with some scattered rural residences and farmsteads. There are no commercial or industrial land uses located in proximity to the proposed substation. Beyond agricultural lands, the other predominant land use surrounding the proposed substation is surface transportation land uses including roads and railways.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact commercial, industrial, or residential land uses in the vicinity of the substation, with the exception of the land acquired and converted for use of the substation. Construction of a new substation would require the acquisition and intensification of land currently used for agricultural purposes, depending on the final location of the substation location. The substation would be constructed in a manner that limits impacts to the land parcel acquired or adjacent parcels. A discussion of permanent impacts to land uses is provided in Section 6.2.2.2.

7.1.2.3 Displacements

No displacement for construction of the new Hazel Creek Substation is anticipated.

Impacts and Mitigation

No impacts are expected and therefore no mitigation measures are proposed. Further information on mitigative measures for the Project is provided in Section 6.2.3.1.

7.1.2.4 Noise

Noise associated with substations includes the operation of transformers and switchgear. The transformers produce a constant low-frequency humming noise while the switchgear produces an impulsive or short duration noise during infrequent activation of the circuit breakers. Due to the infrequent operation of the switchgear, the noise generated would be considered temporary in nature and not predicted to exceed the MPCA Noise Limits.

The substation transformers were modeled to predict the distance to the nighttime L_{50} allowable noise level of 50 dBA for NAC 1 receptors. The noise source levels for each substation were obtained from prospective vendors and compared to the National Electrical Manufacturers Association Standards Publication Number TR 1-1993 (“NEMA TR 1”) design noise standards. To conservatively predict future noise levels and the distance to the nighttime compliance limit of 50 dBA, the NEMA-recommended design noise levels for each transformer were treated as point sources at the substation boundary and propagated to the distance where the noise levels would be reduced to 50 dBA. Noise propagation through the outdoor atmosphere typically decreases in level with increasing distance between the source and the receiver. The noise attenuation is the result of several mechanisms, including geometrical spreading of the sound waves, shielding provided by physical structures, atmospheric absorption of the acoustic energy, and ground effects on the sound

waves. In general, the noise or sound pressure levels emitted from the substations will decrease approximately 6 dB for each doubling of distance from the source to the receiver. Therefore, the substations will be designed to emit noise levels that will attenuate to levels less than the MPCA Noise Limits at the nearest receptors. The noise analysis performed for this Application used assumptions based on preliminary planning studies. Actual noise levels may vary once the final design is complete.

Impacts and Mitigation

Substation noise levels are not predicted to exceed the MPCA Noise Limits beyond the range of 300 to 500 feet from the substation boundaries. The noise levels emitted from the operation of substations that are proposed for the Preferred Route associated facilities are not predicted to exceed the MPCA Noise Limits for all Noise Area Classifications.

7.1.2.5 Aesthetics

A description of area aesthetics for Yellow Medicine County is provided in Section 6.2.5.

Impacts and Mitigation

The installation and operation of the proposed Hazel Creek Substation South area would constitute a new facility in the midst of rolling agricultural farm fields, thereby creating a new visual impact for area residents.

7.1.2.6 Socioeconomic

A discussion of current socioeconomic conditions for populations living in proximity to the proposed Hazel Creek Substation South area location is provided in Section 6.2.6.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact socioeconomic conditions of the population currently living in proximity of the proposed substation area. No mitigation is necessary.

7.1.2.7 Cultural Values

The methods used to identify cultural values are discussed in Section 6.2.7.

7.1.2.8 Recreation

Refer to Section 6.2.8 for recreational resources information.

There is a snowmobile trail located within the proposed Hazel Creek Substation South area. The snowmobile trail follows County Highway 43 for approximately two miles within the substation area.

Impacts and Mitigation

The Applicants do not anticipate any impacts to snowmobile trails within the proposed substation area.

7.1.2.9 Public Services

The proposed substation area is not located in proximity to any municipal buildings, parks, daycare centers or hospitals, and a substation would not impact or interrupt any public services or facilities.

Impacts and Mitigation

Construction and operation of the Hazel Creek Substation is not anticipated to result in any long-term direct impacts to public buildings or infrastructure. Short-term impacts such as electricity disruptions to households or businesses may occur as a result of construction; however, these impacts would be temporary with power restored almost immediately. No further mitigation would be required by the Project.

7.1.2.10 Transportation

Roadways

Surface transportation routes within the substation area include a mixture of county highways, roads, and local streets, all of which provide access to scattered rural residences and farmsteads. Major roads include Yellow Medicine County Road B3, County Highway 43, and County Highway 73. Major roads within this substation area and Project area provide good access to substations, particularly for maintenance trucks and heavy equipment moved to the facility. Traffic volumes along these roads are relatively low by comparison with other routes in the region. TH 23 is the major roadway in this region of the State connecting Granite Falls, Cottonwood, and Marshall.

Railways

The Burlington Northern Santa Fe Railroad operates a rail line between the cities of Granite Falls, Cottonwood, and Marshall, paralleling TH 23. The rail line is located approximately a half mile on the southeast side outside the substation area.

Airports and Aviation Facilities

The Granite Falls Municipal Airport is located approximately one mile east of the substation area boundary. In addition to this facility, a privately owned airstrip was identified on the western side of the substation area during public open houses and work group meetings. The proposed substation location is situated in the upper middle portion of the substation area, and the substation facility is not anticipated to impact the flight operation of either aviation facility.

Pipelines

A pipeline owned and operated by Williams Companies is located along the eastern edge of the proposed substation area for the Hazel Creek Substation South area.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact transportation facilities in proximity to the proposed substation area. The Applicants will work with local and county public works or transportation departments regarding ROW access points. No mitigation is necessary.

7.1.2.11 Radio, Television, Cellular Phone and GPS

No telecommunication towers are located with the proposed Hazel Creek Substation South area.

7.1.3 LAND-BASED ECONOMIES

7.1.3.1 Agriculture

Refer to Section 6.3.1.2 for agricultural information in Yellow Medicine County. Agriculture comprises 98 percent of land within the Hazel Creek Substation South area. There are no known

organic farms within one mile of the substation area and no known center pivot irrigation systems within the proposed substation area.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agriculture impacts and mitigation information.

7.1.3.2 Forestry

No impacts to forestry resources are anticipated within the proposed Hazel Creek Substation South area.

7.1.3.3 Tourism

No impacts to tourism resources are anticipated within the proposed Hazel Creek Substation South area.

7.1.3.4 Mining

An aggregate mining site has been identified within the proposed Hazel Creek Substation South area, but it has never been sampled or mined. The site is located in the southwest portion of the substation area.

Impacts and Mitigation

Refer to Section 6.3.4.1 for mining impact and mitigation information.

7.1.4 ARCHAEOLOGICAL AND HISTORIC RESOURCES

7.1.4.1 Archaeology

There are eight archaeological sites located within one mile of the Hazel Creek Substation areas (Table H-30, Appendix H). None of these sites have been evaluated for listing on the NRHP but will not be impacted by the construction or maintenance of the substation.

7.1.4.2 Architectural History

There are 44 architectural sites within one mile of the Hazel Creek Substation areas (Table H-31, Appendix H). Four of these structures are listed on the NRHP. These sites are YM-GRN-046 (The World War Memorial Park), YM-GRN-005 (The Benjamin & Susan Pillsbury House), YM-GRN-016 (The Andrew J. Volstead House), and CP-GRN-003, which does not have an available site name. All of these listed sites are located over a half a mile away from the proposed Hazel Creek Substation South area and will not be impacted by the construction or maintenance of the Project.

7.1.4.3 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the proposed substation area.

7.1.5 NATURAL ENVIRONMENT

7.1.5.1 Air Quality

Refer to Section 6.5.1 for general air quality information. No impacts to air quality are anticipated with the proposed Hazel Creek Substation South area as a result of the Project.

7.1.5.2 Water Quality and Resources

See Section 6.5.2 for a discussion of water resources and water quality in the Project area. One unnamed PWI stream occurs in the Hazel Creek Substation South area that does not have impaired water quality. There is a large wetland located centrally in the north half of Section 5 of Minnesota Falls Township, and other wetlands are found in association with streams in the area. Wetlands total 15 acres, or 0.4 percent of the substation area. No lakes or other surface water features, or FEMA floodplains, occur in this area.

Impacts and Mitigation

Exact impacts cannot be determined because a final substation location has not been selected. The substation will be located to avoid wetlands as much as possible. A portion of the substation footprint will be converted to impervious surfaces. Water quality will be protected by appropriate erosion control methods during construction. See Section 6.5.2.7 for a discussion of impacts and mitigation for water resources and water quality.

7.1.5.3 Flora

See Section 6.5.3 for a discussion of common habitats in the Project area. Agricultural land uses dominate the landscape in this area. Three parcels of land conservation easements occur in this substation area. Several high quality habitat areas are located on the east and northeastern sides of the substation area, including two USFWS easements, a MCBS area of high significance, and a dry hill prairie community.

Impacts and Mitigation

See Section 6.5.3.7 for a discussion of impacts and mitigation for wildlife in the substation area. Avoiding locating the substation in the east and northeastern sides of the substation area will avoid impacts to high value habitat areas.

7.1.5.4 Fauna

See Section 6.5.4 for a discussion of common fauna in the Project area. Prairie species and migratory birds are likely to be common in this area due to the proximity to the Minnesota River and the cluster of high-quality habitat on the eastern side of the substation area.

Impacts and Mitigation

See Section 6.5.4.7 for a discussion of impacts and mitigation for wildlife in the substation area.

7.1.6 RARE AND UNIQUE NATURAL RESOURCES

No State or federal protected or rare species or habitats occur in this substation area.

7.2 CEDAR MOUNTAIN SUBSTATION SOUTH AREA

The proposed Cedar Mountain Substation South area is located on the east end of the Lyon County to Cedar Mountain section of the Preferred Route. The substation area location is just northeast of the Minnesota River, south of County Road 128, north of 630th Avenue and west of 420th Street (Appendix D.5 identifies the proposed substation location). The Applicants will seek to acquire 40 acres for the proposed substation construction, which is discussed in Section 2.4.4.

7.2.1 DESCRIPTION OF ENVIRONMENTAL SETTING

The proposed Cedar Mountain Substation South area is the preferred substation location. It is primarily flat in an agricultural setting in Renville County. There are a few small, farmed drainages in the vicinity and several homesteads are present throughout the landscape. The Minnesota River is located southwest of the substation area. The elevation of the site ranges from 950 to 1,050 feet AMSL.

7.2.2 HUMAN SETTLEMENT

7.2.2.1 Public Health and Safety

A discussion of public health and safety concerns regarding substations is provided in Section 7.1.2.1.

7.2.2.2 Commercial, Industrial, Residential Land Use

Land uses surrounding the proposed Cedar Mountain Substation South area are agricultural lands with scattered rural residences and farmsteads. No commercial or industrial land uses are found in the vicinity of the substation area. Surface transportation land uses, including road and railways, are located in the proposed substation area. Around the Minnesota River, land uses are predominantly undisturbed forest areas, and some areas of native prairie grass are located along portions of the railway that cuts through the Project area.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact commercial, industrial, or residential land uses in the vicinity of the substation, with the exception of the land acquired and converted for use of the substation. Construction of a new substation would require the acquisition and intensification of land currently used for either agricultural purposes or currently undisturbed land, depending on the final location of the substation. The substation would be constructed in a manner that limits impacts to the land parcel acquired or adjacent parcels. A discussion of permanent impacts to land uses is provided in Section 6.2.2.

7.2.2.3 Displacements

No displacement is anticipated.

Impacts and Mitigation

No displacement is anticipated and therefore no mitigation measures are proposed.

7.2.2.4 Noise

Refer to Section 6.2.4 for general noise information and Section 7.1.2.4 for substation noise and impacts and mitigation information.

7.2.2.5 Aesthetics

A description of area aesthetics is provided in Section 6.2.5.

Impacts and Mitigation

The installation and operation of a substation in this area would constitute a new facility in the midst of rolling agricultural farm fields, thereby creating a new visual impact for area residents. However, the proposed substation would be located outside of Franklin, and away from most of the region's identified scenic resources or recreation areas.

7.2.2.6 Socioeconomics

A discussion of current socioeconomic conditions for populations living in proximity to the proposed Cedar Mountain Substation South area is provided in Section 6.2.6.

Impacts and Mitigation

The construction and operation of the proposed substation is not anticipated to impact socioeconomic conditions of the population currently living in proximity of the proposed substation area. No mitigation is necessary.

7.2.2.7 Cultural Values

The methods used to identify cultural values are discussed in Section 6.2.7.

7.2.2.8 Recreation

A snowmobile trail is located within the proposed Cedar Mountain Substation South area. The snowmobile trail follows County Road 11 for two miles within the proposed substation area.

Impacts and Mitigation

Refer to Section 6.2.8.7 for impacts and mitigation information for recreational resources. The Applicants will work to avoid all recreational resources when determining the location of the proposed Cedar Mountain Substation.

7.2.2.9 Public Services

The proposed substation area is not located in proximity to any municipal buildings, parks, daycare centers or hospitals and a substation would not impact or interrupt any public services or facilities.

Impacts and Mitigation

Construction and operation of the substation is not anticipated to result in any long-term direct impacts to public buildings or infrastructure. Short-term impacts such as electricity disruptions to households or businesses may occur as a result of construction; however, these impacts would be temporary with power restored almost immediately. No further mitigation would be required by the Project.

7.2.2.10 Transportation

Roadways

Several roads of varying designation are located within the Cedar Mountain Substation South area, the most notable of which are TH 19 on the northern side of the search region, and County Highway 5 on the southern side paralleling the Minnesota River. Major roads within this substation area and Project area provide good access to substations, particularly for maintenance trucks and heavy equipment moved to the facility. County Highway 5 is part of the Minnesota River Valley National Scenic Byway system. The Preferred Route would utilize County Highway 3 traveling north from Brown County, crossing the Minnesota River (Brown County crossing) using a crossing with existing infrastructure. In addition to these roads, local township roads also cross through the substation area, along which a small number of rural residences are currently located.

Railways

A rail line operated by the Twin Cities and Western Railroad cuts through the northern side of the Cedar Mountain Substation South area, paralleling TH 19 between Franklin and Fairfax.

Airports and Aviation Facilities

No airports or aviation facilities are located within the substation area.

Pipelines

No pipelines are located within the substation area.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact transportation facilities in proximity to the proposed substation area. The Applicants will work with local and county public works or transportation departments regarding ROW access points. No mitigation is necessary.

7.2.2.11 Radio, Television, Cellular Phone and GPS

No impacts to telecommunication towers are anticipated with the proposed Cedar Mountain Substation South area.

Impacts and Mitigation

Refer to Section 6.2.11.1 for impacts and mitigation information.

7.2.3 LAND-BASED ECONOMIES

7.2.3.1 Agriculture

The majority of the land (97 percent) within the proposed Cedar Mountain Substation South area is agricultural. There are also a few large agriculture production buildings located in the northeast portion of the substation area. There are no known organic farms within one mile of the route and no known center pivot irrigation systems within the proposed substation area.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agriculture impacts and mitigation information.

7.2.3.2 Forestry

No impacts to forestry resources are anticipated within the proposed Cedar Mountain Substation South area.

7.2.3.3 Tourism

No impacts to tourism resources are anticipated within the proposed Cedar Mountain Substation South area.

7.2.3.4 Mining

No impacts to mining resources are anticipated within the proposed Cedar Mountain Substation South area. Archaeological and Historic Resources

7.2.3.5 Archaeology

There are no archaeological sites of interest within one mile around the proposed Cedar Mountain Substation South area.

7.2.3.6 Architectural History

There are 16 architectural sites located within one mile of the Cedar Mountain Substation South area (Table H-33, Appendix H). None of these structures have been evaluated for listing on the NRHP and will not be impacted by the construction or maintenance of the Project.

7.2.3.7 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the proposed substation area.

7.2.4 NATURAL ENVIRONMENT

7.2.4.1 Air Quality

Refer to Section 6.5.1 for general air quality information. No impacts to air quality are anticipated within the proposed Cedar Mountain Substation South area.

7.2.4.2 Water Quality and Resources

Three Mile Creek is the only stream or lake found in the proposed Cedar Mountain Substation South area. It is not a PWI or impaired for water quality. Wetlands totaling 182 acres, or 3.9 percent of the substation area, are scattered throughout the area. A cluster of wetlands occurs in Section 8 of Camp Township.

Impacts and Mitigation

See Section 7.1.5.2 for a discussion of impacts and mitigation to water quality and resources.

7.2.4.3 Flora

Five mesic railroad prairies occur along the Minnesota Central Railroad. One area of MCBS moderate significance along the river bluff includes an oak woodland native community. Approximately 139 acres of land conservation easements are located within the substation area. Otherwise, the landscape is agricultural.

Impacts and Mitigation

See Section 6.5.3.7 for a discussion of impacts and mitigation for vegetation and habitat. Locating the substation away from railroad prairie would avoid impacts to that habitat.

7.2.4.4 Fauna

Wildlife resources in the Cedar Mountain Substation South area are typical of agricultural lands. See Section 6.5.4 for a discussion of common fauna in the Project area. Species unique to prairies are likely to occur in the mesic railroad prairies.

Impacts and Mitigation

See Section 6.5.4.7 for a discussion of impacts and mitigation for wildlife.

7.2.5 RARE AND UNIQUE NATURAL RESOURCES

A regal fritillary butterfly is located in association with a mesic railroad prairie on the northeastern portion of the substation area. Avoiding a substation location in prairie habitat will avoid impacts to this species.

7.3 CEDAR MOUNTAIN SUBSTATION SOUTH 115 kV REROUTE

The new Cedar Mountain Substation will be designed to interconnect with the Wilmarth – Franklin 115 kV line. The interconnection will require rerouting the existing 115 kV transmission line to the Cedar Mountain Substation South area. The Applicants have identified two reroute options: Reroute A is located on the northwest edge of the proposed Cedar Mountain Substation South area. It is located just north of 660th Avenue and parallels a railroad operated by Twin Cities and Western Railroad for one mile, then heads north of the west side of 400th Street (Appendix D.7). Reroute B is located on the south edge of the proposed Cedar Mountain Substation South area. It runs on the south side of the existing 115 kV transmission line to just east of County Highway 3 and extends a quarter mile west of 410th Street (Appendix D.8). The environmental setting of the reroute areas is described below.

7.3.1 DESCRIPTION OF ENVIRONMENTAL SETTING

Reroute A

Reroute A is in a primarily agricultural setting in Renville County. There are a few small, farmed drainages in the vicinity and a few homesteads within the Reroute. A railroad operated by the Twin Cities and Western Railroad cuts through the southern portion of Reroute A.

Reroute B

Reroute B is located in a primarily agricultural setting bordering the Minnesota River Valley in Renville County. There are a few small, farmed drainages in the vicinity and two homesteads within the Reroute.

7.3.2 HUMAN SETTLEMENT

General measures described in Section 6.2 apply to the Cedar Mountain Substation South 115 kV reroute. No impacts are associated with noise, cultural values, and radio, television, cellular phone and GPS. The resources described below regarding Human Settlement are specific to the Reroute area.

7.3.2.1 Public Health and Safety

A discussion of public health and safety concerns and mitigation regarding HVTLs is provided in Section 6.2.1.

7.3.2.2 Commercial, Industrial, Residential Land Use

Land uses in this portion of Renville County are described in Section 6.2.2.1.

7.3.2.3 Displacement

The Project will be designed to avoid displacement of existing homes or businesses. A discussion of displacement issues is provided in Section 6.2.3.

7.3.2.4 Noise

Refer to Section 6.2.4 for general noise and impacts and mitigation information.

7.3.2.5 Aesthetics

Refer to Section 6.2.5 for a discussion of area aesthetics for southern Renville County.

7.3.2.6 Socioeconomic

A discussion of the current socioeconomic conditions for this area is provided in Section 6.2.6.

7.3.2.7 Cultural Values

The methods used to identify cultural values are discussed in Section 6.2.7.

7.3.2.8 Recreation

Reroute A

A snowmobile trail is located within the Reroute A paralleling 660th Avenue.

Impacts and Mitigation

Refer to Section 6.2.8.7 for impacts and mitigation information for recreational resources. The Applicants will work to avoid all recreational resources when siting Reroute A.

Reroute B

The Minnesota River Scenic Byway is located just south of Reroute B. Refer to Section 6.2.9 for information on the byway.

Impacts and Mitigation

Refer to Section 6.2.8.7 for impacts and mitigation information for recreational resources. The Applicants will work to avoid all recreational resources when siting Reroute B.

7.3.2.9 Public Services

Local telephone and cable television lines likely extend along the roads and driveways to homes or other buildings located within the Reroute A and B areas. No other public utilities have been identified in either reroute area. The Applicants will work with local public utility providers during engineering and construction to identify any unknown public services and avoid disturbances to existing services.

Impacts and Mitigation

No impacts are anticipated to public services with the relocation of the 115 kV transmission line. Refer to Section 6.2.9.1 for information on mitigation techniques for public services.

7.3.2.10 Transportation

Reroute A

Several local roads are located along the border of Reroute A, including 660th Avenue and 400th Street in Renville County. A small portion of 410th Street is also located in this area. In addition to these local roads, a railway operated by the Minnesota Prairie Line is located on the southern edge of the reroute area. There are 69 kV transmission lines located along this railway. No other transportation systems are located in this area.

Reroute B

The two local roadways found in Reroute B include 630th Avenue and 410th Street in southern Renville County. No other surface transportation systems are located in this area.

Impacts and Mitigation

No impacts are anticipated to transportation systems with the relocation of the 115 kV transmission line using either route. Refer to Section 6.2.10 for information on mitigation techniques for transportation.

7.3.2.11 Radio, Television, Cellular Phone and GPS

There are no telecommunication towers located within Reroute A or B and no impacts are anticipated.

7.3.3 LAND-BASED ECONOMIES

7.3.3.1 Agriculture

Reroute A

Agriculture comprises 98 percent, or 451 acres, of the land within Reroute A. There are no known organic farms within one mile of the reroute and no known center pivot irrigation systems.

Impacts and Mitigation

The Applicants estimate permanent impacts to agricultural lands within Reroute A at 8,750 square feet. The Applicants estimate that 25 acres of land will be temporarily impacted by Reroute A due to transmission line construction.

Reroute B

Agriculture comprises 84 percent, or 370 acres, of the land within Reroute B. There are no known organic farms within one mile of the reroute and no known center pivot irrigation systems.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agriculture impacts and mitigation information. The Applicants estimate permanent impacts to agricultural lands within Reroute B at 13,650 square feet. The Applicants estimate that 39 acres of land will be temporarily impacted by Reroute B due to transmission line construction.

7.3.3.2 Forestry

Reroute A

The majority of the land is agriculture. No economic forest resources are anticipated to be impacted.

Reroute B

There are some forested areas in Reroute B; however, no economic forest resources are anticipated to be impacted.

7.3.3.3 Tourism

Reroute A

No impacts to tourism resources are anticipated in Reroute A.

Reroute B

No direct impacts to tourism resources are anticipated with Reroute B. There may be visual impacts to the Minnesota River Valley Scenic Valley. Refer to Section 6.2.5 for information on aesthetics.

7.3.3.4 Mining

Refer to Section 6.3.4 for general mining information.

Reroute A

No impacts to mining resources are anticipated in Reroute A.

Reroute B

No impacts to mining resources are anticipated in Reroute B.

7.3.4 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

In November 2008, the Applicants reviewed SHPO records to identify known archaeological resources within one mile of the proposed reroute for the 115 kV transmission line to the Cedar Mountain Substation South area. The literature was also searched for reports of previously surveyed areas relevant to the Project area. Section-specific discussions of archaeological sites and historic structures within one mile of the Cedar Mountain Substation South area Reroutes A and B are provided below.

7.3.4.1 Archaeology

Reroute Area A

There are no archaeological sites of interest within one mile around the Cedar Mountain Substation South Reroute A.

Reroute Area B

There are five archaeological sites of interest within one mile of the Cedar Mountain Substation South Reroute B. None of these structures have been evaluated for listing on the NRHP and will not be impacted by the construction or maintenance of the Project.

7.3.4.2 Architectural History

Reroute Area A

There are 16 architectural sites within one mile of the Cedar Mountain Substation South Reroute A (Table H-33, Appendix H). None of these structures have been evaluated for listing on the NRHP and will not be impacted by the construction or maintenance of the Project.

Reroute Area B

There are no architectural sites of interest within one mile around the Cedar Mountain Substation South Reroute B.

7.3.4.3 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the proposed Reroute A and B.

7.3.5 NATURAL ENVIRONMENT

7.3.5.1 Air Quality

Refer to Section 6.5.1 for general air quality information.

Reroute A

No impacts to air quality are anticipated with Reroute A.

Reroute B

No impacts to air quality are anticipated with Reroute B.

7.3.5.2 Water Quality and Resources

See Section 6.5.2 for a discussion of water resources and water quality in the Project area. See Section 6.5.2.7 for a discussion of impacts and mitigation for these resources.

Reroute A

A NWI wetland is identified in an agricultural field in the Northwest Quarter of Section 6 in Camp Township in Reroute A. The transmission line will be routed to avoid or span this area. No other water resources or water quality issues occur in this area.

Reroute B

Two NWI wetlands are identified in an agricultural field located in the eastern half of Section 17 in Camp Township in Reroute B. The transmission line will be routed to avoid or span these areas. No other water resources or water quality issues occur in this area.

Impacts and Mitigation

See Section 7.1.5.2 for a discussion of impacts and mitigation to water quality and resources.

7.3.5.3 Flora

See Section 6.5.3 for a discussion of common habitats in the Project area. See Section 6.5.3.7 for a discussion of impacts and mitigation for vegetative resources in the Project area. Agricultural land uses dominate the landscape in this area.

Reroute A

Two railroad mesic prairies are located on the southern edge of Reroute A. A shelterbelt and a land conservation easement occur near one home in the northwestern portion; wooded windbreaks surround the another home in the Reroute area. The transmission line will be routed to avoid these areas where possible.

Reroute B

MCBS areas of moderate biodiversity including wooded bluffs of the Minnesota River Valley, and a conservation easement occur on the western side of Reroute B. The transmission line may cross these wooded areas. Trees within the 150-foot ROW would be removed.

7.3.5.4 Fauna

See Section 6.5.4 for a discussion of common fauna in the Reroute area. See Section 6.5.4.7 for a discussion of impacts and mitigation for wildlife in the Reroute area.

Reroute A

Animals associated with native mesic prairie, including some species of butterfly and birds, are likely to occur within the railroad prairie found on the southern edge of Reroute A. Otherwise, fauna

associated with agricultural land uses will occur in the area. Impacts will be minimized or avoided by strategic pole placement. Population level effects are not likely to occur.

Reroute B

Animals associated with wooded bluffs are likely to occur within the bluff areas on the southern edge of Reroute B. Otherwise, fauna associated with agricultural land uses will occur in the area.

7.3.6 RARE AND UNIQUE NATURAL RESOURCES

See Section 6.6 for a discussion of rare and unique natural resources in the Project area. See Section 6.6.7 for a discussion of impacts and mitigation for these resources.

Reroute Area A

Two mesic prairies occurs on the southern edge of Reroute A. The transmission line will be routed to avoid these areas where possible.

Reroute Area B

No State or federal protected or rare species or habitats occur in this Reroute area.

7.4 HELENA SUBSTATION SOUTH AREA

The proposed Helena Substation South area is located on the east end of the Cedar Mountain to Helena section of the Preferred Route. The proposed substation area is located north of 330th Street, south of 290th Street, east of 241st Street and the majority is west of County Highway 32. Appendix D.5 identifies the proposed substation area location. The Applicants will seek to acquire 40 acres for the proposed substation construction, which is discussed in Section 2.4.5.

7.4.1 DESCRIPTION OF ENVIRONMENTAL SETTING

The proposed Helena Substation South area is primarily flat in an agricultural setting in Le Sueur County. There are a few small, farmed drainages and several wetlands in the vicinity. Several homesteads are present throughout the landscape. Wooded areas occur along the drainage areas. The elevation of the site ranges from 950 feet to 1,050 feet AMSL.

7.4.2 HUMAN SETTLEMENT

7.4.2.1 Public Health and Safety

A discussion of public health and safety concerns regarding substations is provided in Section 7.1.2.1.

7.4.2.2 Commercial, Industrial, Residential Land Use

The proposed Helena Substation South area, located in northern Le Sueur County, is surrounded by rolling agricultural farmland, with some open water features and grasslands. Roadways criss-cross through the substation area, diverting around small lakes, with rural residences and farmsteads located along each road. Areas of forest cover are sparsely located around the lakes and water features.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact commercial, industrial, or residential land uses in the vicinity of the substation, with the exception of the land acquired and converted for use of the substation. Construction of a new substation would require

the acquisition and intensification of land currently used for either agricultural purposes or currently undisturbed land, depending on the final site location of the substation. The substation would be constructed in a manner that limits impacts to the land parcel acquired or adjacent parcels. A discussion of permanent impacts to land uses is provided in Section 6.3.2.

7.4.2.3 Displacements

No displacement for construction of the new Helena Substation is anticipated.

Impacts and Mitigation

No impacts are expected and therefore no mitigation measures are proposed. Further information on mitigation measures for the Project is provided in Section 6.2.3.1.

7.4.2.4 Noise

Refer to Section 7.2.4.1 for substation noise information. No noise impacts are anticipated within the proposed Helena Substation South area.

7.4.2.5 Aesthetics

A description of aesthetics for the Helena Substation South area is provided in Section 6.2.5.

Impacts and Mitigation

The installation and operation of a substation in this area would constitute a new facility in the midst of rolling agricultural farm fields, thereby creating a new visual impact for area residents. However, the proposed substation would be located outside any urbanized area, and away from most of the region's identified scenic resources or recreation areas. A discussion of mitigative measures is provided in Section 6.2.5.

7.4.2.6 Socioeconomics

A discussion of current socioeconomic conditions for populations living in proximity to the proposed Helena Substation South area is provided in Section 6.2.6.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact socioeconomic conditions of the population currently living in proximity to the proposed substation area. No mitigation is necessary.

7.4.2.7 Cultural Values

The methods used to identify cultural values are discussed in Section 6.2.7.

7.4.2.8 Recreation

The Sheas Lake WMA is located within the proposed Helena Substation South area. This WMA provides recreational opportunities including deer hunting, small game, forest birds, pheasants and waterfowl and wildlife viewing. There are approximately three miles of snowmobile trails within the proposed Helena Substation South area.

Impacts and Mitigation

Refer to Section 6.2.8.7 for impacts and mitigation information for recreational resources. The Applicants will work to avoid all recreational resources when siting a substation in the proposed Helena Substation South area.

7.4.2.9 Public Services

The proposed substation area is not located in proximity to any municipal buildings, parks, daycare centers or hospitals. The substation is not anticipated to impact or interrupt any public services or facilities.

Impacts and Mitigation

Construction and operation of the substation is not anticipated to result in any long-term direct impacts to public buildings or infrastructure. Short-term impacts such as electricity disruptions to households or businesses may occur as a result of construction. However, these impacts would be temporary with power restored almost immediately. No further mitigation would be required by the Project.

7.4.2.10 Transportation

There are no railways or airports in the substation area. Major roadways located within the Helena Substation South area include Le Sueur County Road 156 and 157, and County Highway 28. Major roads within this substation area and Project area provide good access to substations, particularly for maintenance trucks and heavy equipment moved to the facility. Farmsteads and rural residences are located along each of these roads; however, the majority of residences are located on the adjoining township roads. Traffic volumes along these roads are relatively modest, with the majority of the region's traffic found along County Highway 28 between the cities of Le Sueur and Lonsdale.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact transportation facilities in proximity to the proposed substation area. The Applicants will work with local and county public works or transportation departments regarding ROW access points. No mitigation is necessary.

7.4.2.11 Radio, Television, Cellular Phone and GPS

No impacts to telecommunication towers are anticipated in the proposed Helena Substation South area.

7.4.3 LAND-BASED ECONOMIES

7.4.3.1 Agriculture

Refer to Section 6.3.1.4 for agricultural information in the proposed Helena Substation South area.

Agriculture comprises 85 percent or 5,214 acres of land within the Helena Substation South area. There are two organic farmers located within one mile of the proposed Helena Substation South area. These are certified organic farms as reported by the MnDOA. The State does not depict the exact location of an organic farm field.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agriculture impacts and mitigation information.

7.4.3.2 Forestry

No impacts to forestry resources are anticipated within the proposed Helena Substation South area.

7.4.3.3 Tourism

No impacts to tourism resources are anticipated within proposed Helena Substation South area.

7.4.3.4 Mining

There is one inactive aggregate mining site located within the proposed Helena Substation South area. The site is located in the western portion of the substation area.

Impacts and Mitigation

Refer to Section 6.3.4.1 for mining impacts and mitigation information.

7.4.4 ARCHAEOLOGICAL AND HISTORIC RESOURCES

7.4.4.1 Archaeology

There are two archaeological sites within one mile of the proposed Helena Substation South area (Table H-35, Appendix H). These sites have not been evaluated for the NRHP and will not be impacted by construction or maintenance of the Project.

7.4.4.2 Architectural History

There are six architectural sites within one mile of the proposed Helena Substation South area (Table H-37, Appendix H). These structures have not been evaluated for the NRHP and will not be impacted by the construction or maintenance of the Project.

7.4.4.3 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the proposed substation area.

7.4.5 NATURAL ENVIRONMENT

7.4.5.1 Air Quality

Refer to Section 6.5.1 for general air quality information. No impacts to air quality are anticipated within the proposed Helena Substation South area.

7.4.5.2 Water Quality and Resources

See Section 6.5.2 for a discussion of water resources and water quality in the Project area. Sheas and Renneberg Lakes, which are DNR PWI lakes and Shallow Lakes, are located in this substation area. Forest Prairie Creek, West Branch Raven Creek, and an unnamed stream are also located in this area. West Branch Raven Creek is listed by the MPCA as impaired for fecal coliform. Several wetlands totaling 926 acres, or 15.1 percent of the substation area, are found throughout the area. One wetland is a PWI wetland. FEMA floodplains are located in association with large wetlands.

Impacts and Mitigation

See Section 7.1.5.2 for a discussion of impacts and mitigation to water quality and resources.

7.4.5.3 Flora

See Section 6.5.3 for a discussion of common habitats in the Project area. Agricultural land uses dominate the landscape in this area. Sheas Lake WMA is located in the southwest portion of the substation area. Two areas of MCBS moderate significance total 168.3 acres within the Sheas Lake WMA. There are 16 acres of land conservation easements located within the study area.

Impacts and Mitigation

See Section 6.5.3.7 for a discussion of impacts and mitigation for vegetation and habitat. Locating the substation away from the Sheas Lake WMA will avoid impacts to that habitat in the Helena Substation South area.

7.4.5.4 Fauna

Most wildlife resources in the substation area are typical of agricultural lands. See Section 6.5.4 for a discussion of common fauna in the Project area. Shallow lakes provide habitat for several wetland animals including waterfowl. The Sheas Lake WMA also provides habitat for upland and wetland wildlife.

Impacts and Mitigation

See Section 6.5.3.7 for a discussion of impacts and mitigation for wildlife. Locating the substation away from the Sheas Lake WMA will avoid impacts to wildlife resources in the substation area.

7.4.6 RARE AND UNIQUE NATURAL RESOURCES

No State or federal protected or rare species or habitats occur in the substation area.

7.5 HAMPTON SUBSTATION

The proposed Hampton Substation area is located on the east end of the Lake Marion to Hampton section of the Preferred and Alternate Routes. The proposed substation area is located north of 230th Street and west of Goodwill Avenue. The majority is south of 210th Street East and east of TH 50. Appendix D.13 identifies the proposed substation area location. The Applicants will seek to acquire 40 acres for the proposed substation construction, as discussed in Section 2.4.7.

7.5.1 DESCRIPTION OF ENVIRONMENTAL SETTING

Refer to Section 6.1.5 for a description of the environmental setting in this region of Minnesota. The proposed substation area is primarily flat in an agricultural setting in Dakota County. There are a few small, farmed drainages and several homesteads throughout the landscape. Wooded areas occur along the drainage areas. The elevation of the site ranges from 850 feet to 1,000 feet AMSL.

7.5.2 HUMAN SETTLEMENT

7.5.2.1 Public Health and Safety

A discussion of public health and safety concerns regarding substations is provided in Section 7.1.2.1.

7.5.2.2 Commercial, Industrial, Residential Land Use

Agriculture dominates the land use in the proposed Hampton Substation area, but there are also intensified urban land uses within the area. Rural residential subdivisions, homesteads, and some farmsteads are intermixed among areas of forest and rolling agricultural fields. Both the City of Hampton and Hampton Township are located in close proximity to the substation area.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact commercial, industrial, or residential land uses in the vicinity of the substation, with the exception of the land acquired and converted for use of the substation. Construction of a new substation would require

the acquisition and intensification of land currently used for either agricultural purposes or undisturbed forest land, depending on the final location of the substation. The substation would be constructed in a manner that limits impacts to the land parcel acquired or adjacent parcels. A discussion of permanent impacts to land uses is provided in Section 6.3.2.

7.5.2.3 Displacement

No displacement is anticipated.

Impacts and Mitigation

No displacement is anticipated and therefore no mitigative measures are proposed.

7.5.2.4 Noise

Refer to Section 7.1.2.4 for substation noise information. No noise impacts are anticipated within the proposed Hampton Substation area.

7.5.2.5 Aesthetics

A description of area aesthetics and scenic resources for the Hampton Substation area is provided in Section 6.2.5.

Impacts and Mitigation

The installation and operation of the proposed Hampton Substation would constitute a new facility in the midst of rolling agricultural farm fields, thereby creating a new visual impact for area residents. However, the proposed substation would be located outside of Hampton, and away from most of the region's identified scenic resources or recreation areas. Furthermore, the height of the substation structure would minimally impact the viewshed of area residents living in the immediate vicinity.

7.5.2.6 Socioeconomics

A discussion of current socioeconomic conditions for populations living in proximity to the proposed Hampton Substation area is provided in Section 6.2.6.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact socioeconomic conditions of the population currently living in proximity of the proposed substation area. No mitigation is necessary.

7.5.2.7 Cultural Values

Cultural values are discussed in Section 6.2.7.

7.5.2.8 Recreation

No recreational resource impacts are anticipated within the proposed Hampton Substation area.

Impacts and Mitigation

Refer to Section 6.2.8.7 for impacts and mitigation information for recreational resources. The Applicants will work to avoid all recreational resources when siting the proposed Hampton Substation.

7.5.2.9 Public Services

The proposed substation is not located in proximity to any municipal buildings, parks, daycare centers or hospitals. The substation is not anticipated to impact or interrupt any public services or facilities.

Impacts and Mitigation

Construction and operation of the substation is not anticipated to result in any long-term direct impacts to public buildings or infrastructure. Short-term impacts such as electricity disruptions to households or businesses may occur as a result of construction; however, these impacts would be temporary with power restored almost immediately. No further mitigation would be required by the Project.

7.5.2.10 Transportation

Roadways

Several major State trunk highways are located within the area for the proposed Hampton Substation, including TH 52 and TH 50. Both of these roads carry a high volume of vehicles daily, with TH 52 serving as a critical link between the Twin Cities metropolitan area and Rochester in Olmstead County. Major roads within this substation area and Project area provide good access to substations, particularly for maintenance trucks and heavy equipment moved to the facility. The proposed substation would likely be located adjacent to TH 52, with access coming from either a frontage road or township road. In addition to these major roadways, several township and local roads cross the landscape, providing access to businesses and rural residential neighborhoods.

Railways

No railways are located within the substation area.

Airports and Aviation Facilities

No airports are located within the substation area.

Pipelines

A pipeline owned by Northern Natural Gas Company extends north-south through the proposed Hampton Substation area paralleling U.S. Highway 52. One of the proposed substation site locations connecting the proposed transmission line to an existing 345 kV line would be less than one quarter mile from the pipeline.

Impacts and Mitigation

Construction and operation of the proposed substation is not anticipated to impact transportation facilities in proximity to the proposed substation area. The Applicants will work with local and county public works or transportation departments regarding ROW access points to the site location. No mitigation is deemed necessary.

7.5.2.11 Radio, Television, Cellular Phone and GPS

There is one telecommunication tower located in an agricultural field within the proposed Hampton Substation area.

Impacts and Mitigation

Refer to Section 6.2.11.1 for impacts and mitigation information.

7.5.3 LAND-BASED ECONOMIES

7.5.3.1 Agriculture

Refer to Section 6.3.1.6 for agricultural information in Dakota County.

Agriculture comprises 80 percent of the land within the Hampton Substation area. There are several center pivot irrigation systems located within the substation area.

There is one organic farm located within one mile of the Hampton Substation area. This is a certified organic farm as reported by the MnDOA. The State does not depict the exact location of an organic farm field.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agriculture impacts and mitigation information.

7.5.3.2 Forestry

No impacts to forestry resources are anticipated within the proposed Hampton Substation area.

7.5.3.3 Tourism

No impacts to tourism resources are anticipated within the proposed Hampton Substation area.

7.5.3.4 Mining

There are no known aggregate mining locations identified within the proposed Hampton Substation area and no impacts are anticipated.

Impacts and Mitigation

Refer to Section 6.3.4.1 for mining impacts and mitigation information.

7.5.4 ARCHAEOLOGICAL AND HISTORIC RESOURCES

7.5.4.1 Archaeology

There are four archaeological sites within the proposed Hampton Substation area (Table H-38, Appendix H). These sites have not been evaluated for the NRHP and will not be impacted by the construction or maintenance of the Project.

7.5.4.2 Architectural History

There are 27 architectural sites within one mile of the proposed Hampton Substation area (Table H-39, Appendix H). These structures have not been evaluated for the NRHP and will not be impacted by the construction or maintenance of the Project.

7.5.4.3 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the proposed substation area.

7.5.5 NATURAL ENVIRONMENT

7.5.5.1 Air Quality

Refer to Section 6.5.1 for general air quality information. No impacts to air quality are anticipated within the proposed Hampton Substation area.

7.5.5.2 Water Quality and Resources

See Section 6.5.2 for a discussion of water resources and water quality in the Project area. The South Branch of the Vermillion River and four unnamed streams flow through this substation area. The South Branch of the Vermillion River is listed by the MPCA as impaired for fecal coliform and is a PWI. Wetlands are infrequent and total 49 acres, or 0.7 percent of the substation area, mostly associated with the South Branch of the Vermillion River. One wetland is a PWI wetland. FEMA floodplains occur in association with the South Branch of the Vermillion River and with an unnamed stream in the eastern half of the substation area.

Impacts and Mitigation

See Section 7.1.5.2 for a discussion of impacts and mitigation to water quality and resources.

7.5.5.3 Flora

There is a mesic prairie located in the middle of the substation area approximately two miles northwest of Hampton in a MCBS area of moderate significance and MSNRA. Otherwise, agricultural land uses dominate the landscape.

Impacts and Mitigation

See Section 6.5.3.7 for a discussion of impacts and mitigation for vegetation and habitat. Locating the substation away from the MCBS area of moderate significance will avoid impacts to that habitat.

7.5.5.4 Fauna

The MCBS area and mesic prairie provide habitat for prairie wildlife. Most wildlife resources in the substation area are typical of agricultural lands. See Section 6.5.4 for a discussion of common fauna in the Project area.

Impacts and Mitigation

See Section 6.5.4.7 for a discussion of impacts and mitigation for wildlife. Locating the substation away from the MCBS area will avoid impacts to wildlife resources there.

7.5.6 RARE AND UNIQUE NATURAL RESOURCES

One occurrence of a loggerhead shrike has been recorded two and a half miles north of Hampton. One occurrence of the plant species rattlesnake master has been located two miles northwest of Hampton near a mesic prairie in a MCBS area of moderate significance and MSNRA.

Impacts and Mitigation

See Section 6.6.7 for a discussion of impacts and mitigation for State protected species. Locating the substation away from the MCBS area would avoid impacts to the rattlesnake master. As the loggerhead shrike is mobile, avoiding impacts to prairie and grassland habitats would prevent impacts to this species.

7.6 LYON COUNTY SUBSTATION EXPANSION

The Project will require the expansion of the existing Lyon County 115/69 kV Substation by adding four to six acres of fenced and graded substation area and associated equipment. The substation expansion is proposed to extend to the north and east and may require acquisition of additional land, depending on final transmission route selection and final substation design. Because the substation expansion area is within the Preferred Route, environmental information for this section

of the Project area is already included in the Preferred Route environmental information described in Section 6. However, because resources cannot be avoided or spanned as easily as they can with transmission structures, and clearing and grading will take place within the expansion area, a detailed analysis of environmental resources within the expansion area is appropriate.

7.6.1 DESCRIPTION OF ENVIRONMENTAL SETTING

Refer to Section 6.1 for a description of the environmental setting in this region of Minnesota. The proposed substation area is primarily flat in an agricultural setting in Lyon County. There are small, farmed drainages in the vicinity and several homesteads are present throughout the landscape. The elevation of the Lyon County Substation Expansion area is approximately 1,110 feet AMSL.

7.6.2 HUMAN SETTLEMENT

No impacts are expected in the Lyon County Expansion area for the following: public health and safety; commercial, industrial and residential land use; displacement; noise; aesthetics; socioeconomics; cultural values; recreation; public services; transportation; or radio, television, cellular phone, and GPS. A discussion of these resources regarding substations is provided in Section 7.1.2.

7.6.3 LAND-BASED ECONOMIES

7.6.3.1 Agriculture

The Lyon County Substation Expansion area is mainly agricultural land. There are no known organic farms within one mile of the substation and no known center pivot irrigation systems within the proposed substation area.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agricultural impacts and mitigation information

7.6.3.2 Forestry, Tourism, and Mining

No impacts are expected in the Lyon County Expansion area for forestry, tourism, or mining. A discussion of these resources regarding substations is provided in Section 7.1.4.

7.6.4 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

There are no previously recorded archaeological or architectural sites located within one mile of the Lyon County Substation Expansion area. No sites will be impacted by the expansion or operation of the substation.

7.6.4.1 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the proposed substation area.

7.6.5 NATURAL ENVIRONMENT

7.6.5.1 Air Quality

No impacts to air quality are anticipated within the Lyon County Substation Expansion area. A discussion of these resources regarding substations is provided in Section 6.5.1.

7.6.5.2 Water Quality and Resources

No water resources are found in proposed expansion area of the Lyon County Substation. A discussion of water quality and resources regarding substations is provided in Section 7.1.5.2.

7.6.5.3 Flora

Land cover is agricultural row crop in the proposed expansion area for the Lyon County Substation. No habitat or conservation areas occur within one mile of the substation area. A discussion of flora resources regarding substations is provided in Section 7.1.5.3.

7.6.5.4 Fauna

The Lyon County Substation Expansion area is located in agricultural fields. Wildlife would be typical of an agricultural setting. A discussion of wildlife resources regarding substations is provided in Section 7.1.5.4.

7.6.6 RARE AND UNIQUE NATURAL RESOURCES

No rare or unique species or habitats are located within one mile of the Lyon County Substation Expansion area.

7.7 LAKE MARION SUBSTATION EXPANSION

The Project will require the expansion of the existing Lake Marion Substation (12 to 16 acres of fenced and graded substation area) to house necessary equipment. Because the substation expansion area is within the Preferred Route, environmental information for this section of the Project area is already included in the Preferred Route environmental information described in Section 6. However, because resources cannot be spanned or avoided as easily as they can with transmission structures, and clearing and grading will take place within the expansion area, a detailed analysis of environmental resources within the expansion area is appropriate.

7.7.1 DESCRIPTION OF ENVIRONMENTAL SETTING

Refer to Section 6.1 for a description of the environmental setting in this region of Minnesota. The proposed substation area is primarily flat in an agricultural setting in Scott County. There are small, farmed drainages, wetlands, roads and areas of development, and several homes are present throughout the landscape. The elevation of the Lake Marion Substation Expansion area is approximately 1030 feet AMSL.

7.7.2 HUMAN SETTLEMENT

No impacts are expected in the Lake Marion Substation Expansion area for the following: public health and safety; commercial, industrial and residential land use; displacement; socioeconomics; cultural values; and public services. A discussion of these resources regarding substations is provided in Section 7.1.2.

7.7.2.1 Noise

Refer to Section 6.2.4 for general noise information and Section 7.1.2.4 for general substation noise impacts and mitigation information.

The existing Lake Marion Substation is located east of Interstate 35 approximately 300 feet south of a farmstead.

Impacts and Mitigation

There is a farmstead 300 feet south of the existing substation. Substation noise levels are not predicted to exceed the MPCA Noise Limits beyond the range of 300 to 500 feet from the substation boundaries. Expanded substations will be designed and constructed to comply with the MPCA noise limits.

7.7.2.2 Aesthetics

A description of area aesthetics and scenic resources for the Lake Marion Substation Expansion area is provided in Section 6.2.5.

7.7.2.3 Recreation

There is a snowmobile trail that follows Pillsbury Avenue adjacent to the Lake Marion Substation Expansion area.

Impacts and Mitigation

The Applicants do not anticipate any impacts to snowmobile trails within the substation area.

7.7.2.4 Transportation

No railways, pipelines, or airports and aviation facilities are located near the Lake Marion Substation Expansion area. Interstate 35 is approximately 400 feet west of the substation expansion area, and Dobbs Road is approximately 400 feet east of the substation expansion area.

Impacts and Mitigation

The Lake Marion Substation Expansion area will not impact transportation resources. A discussion of these resources regarding substations is provided in Section 7.1.4.

7.7.2.5 Radio, Television, Cellular Phone and GPS

There is one telecommunication tower located approximately 400 feet north of the existing Lake Marion Substation. There is a second tower located on the west side of Pillsbury Avenue south of the proposed substation expansion area.

Impacts and Mitigation

Refer to Section 6.2.11.1 for general telecommunication tower impacts and mitigation information. If interference occurs, the Applicants will work with the microwave tower owner to mitigate the impacts.

7.7.3 LAND-BASED ECONOMIES

7.7.3.1 Agriculture

Approximately 83 percent of the proposed Lake Marion Substation Expansion area is agricultural land. There are no known organic farms within one mile of the substation and no known center pivot irrigation systems within the substation expansion area.

Impacts and Mitigation

Refer to Section 6.3.1.7 for agricultural impacts and mitigation information.

7.7.3.2 Forestry

There are forested areas within the Lake Marion Substation Expansion area; however, no impacts to economic forestry resources are anticipated. A discussion of these resources regarding substations is provided in Section 7.1.4.

7.7.3.3 Tourism and Mining

No impacts to tourism or known mining resources are anticipated with the Lake Marion Substation Expansion area.

7.7.4 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

7.7.4.1 Archaeology

There are no archaeological sites located within one mile of the Lake Marion Substation Expansion area. No archaeological sites will be impacted by the expansion or operation of the substation.

7.7.4.2 Architectural History

There are two architectural sites located within one mile of the Lake Marion Substation Expansion area. Neither of these historic structures have been evaluated, nor will they be directly impacted by the expansion or operation of the substation. See Table H-42 in Appendix H for more information on these structures.

7.7.4.3 Historic Landscapes

The methods used to identify historic landscapes are discussed in Section 6.4.3. There are no historic landscapes identified in the substation area.

7.7.5 NATURAL ENVIRONMENT

7.7.5.1 Air Quality

Refer to Section 6.5.1 for general air quality information. No impacts to air quality are anticipated within the Lake Marion Substation Expansion area.

7.7.5.2 Water Quality and Resources

There are three wetlands (1.1 acres) within the proposed expansion area of the Lake Marion Substation. No other water resources are located in the proposed substation expansion area. A discussion of water quality and resources regarding substations is provided in Section 7.1.5.2.

Impacts and Mitigation

Wetlands may need to be filled for the substation expansion. See Section 6.5.2 for a discussion of impacts and mitigation for water quality and resources.

7.7.5.3 Flora

Land cover within the proposed Lake Marion Substation Expansion area is primarily agricultural row crop. Wetland vegetation and wooded areas are also found within the expansion area. The Spartina WMA is located within one mile of the substation area. This WMA is managed for lowland brush and grass habitats. No other habitat or conservation areas are located within one mile of the substation area. A discussion of these resources regarding substations is provided in Section 7.1.5.3.

Impacts and Mitigation

Trees and other vegetation would be permanently removed. See Section 6.5.3 for a discussion of impacts and mitigation for flora resources.

7.7.5.4 Fauna

The Lake Marion Substation Expansion area includes agricultural areas, wetlands and wooded areas. The wetlands could provide habitat for several wetland species including birds and amphibians. The wooded areas provide habitat for deer, raccoons, squirrels, a variety of birds, and other species. A discussion of wildlife resources regarding substations is provided in Section 7.1.5.4.

Impacts and Mitigation

See Section 6.5.4 for a discussion of impacts and mitigation for wildlife resources.

7.7.6 RARE AND UNIQUE NATURAL RESOURCES

No rare or unique species or habitats are located within one mile of the Lake Marion Substation Expansion area.

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