

## 7.7 Substations and Transmission Line Reroutes

In addition to the new 345 kV HVTL, the proposed Project would require four new 40-acre substations, modifications to four existing substations, and (depending on final substation location) some rerouting of existing transmission lines at three of the four new substations. The four new substations that would be required are:

- Hazel Creek,
- Cedar Mountain,
- Helena, and
- Hampton.

Each of these new substations would require up to 40 acres to ensure adequate space for planned facilities, potential future expansion, and buffer areas, as indicated by the applicants.

The substations that would have to be modified are:

- Brookings County (South Dakota),
- Lyon County,
- Minnesota Valley and
- Lake Marion.

The route permit application indicates that each of these substations would have to be expanded by up to 16 acres.

Finally, reconfiguration of existing transmission lines would be required near the Cedar Mountain, Helena, and Hampton substations to interconnect the existing lines into the substations. Final details regarding these required reroutes would be determined after the final route and substation locations are selected.

The locations and potential impacts at each of the Minnesota substations and system connections are summarized below, from west to east. An overview map of all substation locations is included on page 7.1, Map 7.0-1. Detailed maps of the proposed substation and potential reroute areas are shown in Maps 7.7-01, 7.7-02, 7.7-03, and 7.7-04 at the end of this section.

### Lyon County Substation (Existing)

The existing Lyon County 115/69 kV Substation would have to be expanded to accommodate new 345 kV equipment. The expansion may require at least four to six acres of additional land to the north and east, depending on route and substation design. There are small, farmed drainages in the vicinity of the existing substation and several homes nearby. None of the homes would need to be relocated. The elevation of the Lyon County Substation Expansion area is approximately 1,110 feet AMSL.

### Hazel Creek Substation (Proposed)

A new Hazel Creek 345/230/115 kV Substation would be located in one of two proposed locations as shown on Map 7.7-01: one in Minnesota Falls Township (north) and the other in Minnesota Falls and Hazel Run townships (south). The applicants would require a total of 40 acres for the proposed substation including the buffer zone, with a minimum of 15 acres to be graded.

### Hazel Creek Substation South

The proposed Hazel Creek Substation South is just west of TH 23 and on the east side of County Highway 43. The area is primarily flat farmland located in Yellow Medicine County. There are small, farmed drainages in the vicinity of the

proposed substation as well as several homes. None of these homes would have to be moved or displaced. The elevation of the proposed Hazel Creek Substation South ranges from 1,000 to 1,100 feet AMSL.

There is a snowmobile trail located within the area of the proposed Hazel Creek Substation South. The snowmobile trail follows County Highway 43 for approximately two miles within the proposed area. However, the applicants do not anticipate any impacts to snowmobile trails. A pipeline owned and operated by Williams Companies is located along the eastern edge of the proposed Hazel Creek Substation South.

### Airports and Aviation Facilities

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

### Archeological and Historical Sites

There are 44 architectural sites located within one mile of the proposed Hazel Creek Substation South (See Map 7.7-01). 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 (no available site name). All of these listed sites are located over a half a mile away from the proposed Hazel Creek Substation South and would not be impacted by the construction or maintenance of the proposed Project.

### Water Quality and Resources

One unnamed PWI stream occurs in the area of the proposed Hazel Creek Substation South, which 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 proposed substation area. No lakes or other surface water features, or FEMA floodplains, occur in this area.

Exact impacts cannot be determined because a final substation location has not been selected. As indicated by the applicants, the proposed substation would be located to avoid wetlands as much as possible. A portion of the proposed substation footprint would be converted to impervious surfaces. Water quality would be protected by appropriate erosion control methods during construction (see Section 5.0).

### Flora and Fauna

There are three parcels of land conservation easements in this area. There are also several high quality habitat areas on the east and northeastern sides of the proposed substation area, including two USFWS easements, a MCBS area of high biodiversity significance, and a dry hill prairie community. Avoiding locating the substation in the east and northeastern sides of the substation area would avoid impacts to high value habitat areas. Prairie species and migratory birds are likely to be common in this area due to the proximity to the Minnesota River and the high-quality habitat in the substation area. No state or federal protected or rare species or habitats occur in the proposed substation area.

### Hazel Creek Substation North

The proposed Hazel Creek Substation North is located at the north end of the Lyon County to Minnesota Valley section of the Alternate Route. There are several aggregate and granite mines located nearby, but none are within the proposed substation area. No impacts to mining resources are anticipated.

There are small wetlands in the middle of Section 19 of Minnesota Falls Township, and other small wetlands are found associated with ditches and streams. Wetlands total approximately 75 acres, or 3.6 percent of the proposed substation area. No lakes or other surface water features, or FEMA floodplains, occur in this area.

There are two permanent land conservation easements, totaling approximately 32 acres. Dry hill prairie habitat is located in the northeastern portion and rock outcrops are located in the eastern portion of the proposed substation area. No other state or federal land or easements, natural communities, or rare native habitats are found in the proposed substation area.

#### Rare and Unique Natural Resources

Rock outcrop and dry hill prairie communities are found in the eastern portion of the proposed substation area. As indicated by the applicants, these communities would be avoided where possible.

### Minnesota Valley Substation (Existing)

The existing Minnesota Valley 115/69 kV Substation in Granite Falls will be expanded to accommodate new 230 kV equipment. The applicants do not anticipate that this expansion would require any additional land.

### Cedar Mountain Substation (Proposed)

A new Cedar Mountain 345/115 kV substation near Franklin would require four to six acres of fenced and graded area in one of two possible locations as shown in Map 7.7-02: one southeast of Franklin and the other north of Franklin. The proposed Cedar Mountain Substation would need to connect with the existing Minnesota Valley - Franklin - New Ulm 115 kV transmission line. Depending on the final substation location, this existing line would need to be rerouted into the new substation. The area is primarily farmland in Renville County. There are a few small, farmed drainages in the vicinity of the proposed substation and several homes are present in the area. No homes would have to be displaced.

The elevation of the proposed site ranges from 950 to 1,050 feet AMSL.

### Cedar Mountain Substation South

The proposed Cedar Mountain Substation South is just northeast of the Minnesota River, south of County Road 128, north of 630th Avenue and west of 420th Street. There are some undisturbed forest areas along the Minnesota River. There are also some areas of native prairie grass located along portions of the railway that cuts through the proposed Project area.

There is a snowmobile trail located within the area of the proposed Cedar Mountain Substation South. The snowmobile trail follows County Road 11 for two miles within the area. Major roads in the 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 to travel north from Brown County, crossing the Minnesota River (Brown County crossing) using a crossing with existing infrastructure. In addition to this road, local township roads also cross through the substation area. A small number of rural residences are located along these roads. None of these homes would have to be moved or displaced.

There are 16 architectural sites located within one mile of the proposed Cedar Mountain Substation South area. None of these structures have been evaluated for listing on the NRHP and would not be impacted by the construction or maintenance of the proposed Project.

#### Water Quality and Resources

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

#### Flora

Five mesic railroad prairies occur along the Minnesota Central Railroad. One site of MCBS moderate biodiversity 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. The DNR National Heritage Database indicates that the regal fritillary butterfly is associated with a mesic railroad

prairie on the northeastern portion of the proposed substation area. Avoiding a substation location in prairie habitat would avoid potential impacts to this species.

### Cedar Mountain Substation South 115 kV Reroute

The new Cedar Mountain Substation would be designed to interconnect with the Wilmarth – Franklin 115 kV line. This would require rerouting the existing 115 kV transmission line to the proposed Cedar Mountain Substation South. The applicants have identified two proposed reroute options: Reroute A and Reroute B. Reroute A is located on the northwest edge of the proposed Cedar Mountain Substation South. 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 on the west side of 400th Street (Map 7.7-02). Reroute B is located on the south edge of the proposed Cedar Mountain Substation South. It follows the south side of the existing 115 kV transmission line to just east of County Highway 3, and then extends a quarter mile west of 410th Street.

The applicants estimate permanent of impacts to agricultural lands within Reroute A at 8,750 square feet and within Reroute B at 13,650 square feet. The applicants estimate that 25 acres of land would be temporarily impacted by Reroute A and 39 acres of land would be temporarily impacted by Reroute B due to transmission line construction.

#### Reroute A

The proposed Reroute A is located in a primarily farmland setting in Renville County. There are a few small, farmed drainages in the vicinity of the proposed reroute. A few homes are located within

proposed Reroute A. A railroad operated by the Twin Cities and Western Railroad cuts through the southern portion of proposed Reroute A.

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

There are two railroad mesic prairies on the southern edge of proposed Reroute A. A shelterbelt and a land conservation easement occur near one home in the northwestern portion; wooded windbreaks surround another home in the Reroute A area. As indicated by the applicants, the transmission line would be routed to avoid these areas where possible.

#### **Reroute B**

The proposed 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 proposed Reroute B.

Local telephone and cable television lines likely extend along the roads and driveways to homes or other buildings located within the proposed areas of Reroutes A and B. No other public utilities have been identified in either reroute area.

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

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

#### **Archeological and Historical Sites**

There are 16 architectural sites located within one mile of proposed Reroute A (Map 7.7-02). None of these structures have been evaluated for listing on the NRHP and would not be impacted by the construction or maintenance of the Project. There are five archaeological sites of interest within one mile of the proposed Reroute B. None of these structures have been evaluated for listing on the NRHP and would not be impacted by the construction or maintenance of the proposed Project.

#### **Cedar Mountain Substation North**

The proposed Cedar Mountain Substation North is located on the east end of the Lyon County to Cedar Mountain Alternate Route section. The proposed substation area is located east of 370th Street, west of County Road 71, north of 680th Avenue, and south of 700th Avenue.

A snowmobile trail follows 370th Street for one mile, continues east on County Highway 2 for a half mile, then heads south following 375th Street for a half mile within the proposed Cedar Mountain Substation North. Although snowmobile trails exist within the proposed substation area, the applicants do not anticipate any impacts to the trails. The applicants have stated they would construct the substation so that no direct impacts to this resource would result, as practical.

There is one architectural site located within one mile of the proposed Cedar Mountain Substation North (Map 7.7-02). This structure has not been evaluated for the NRHP and would not be impacted by the construction or maintenance of the proposed Project.

Two unnamed PWI streams occur in the proposed substation area, neither of which has impaired water quality. Small wetlands total approximately 49 acres, or 1.1 percent of the substation area. No lakes or other surface water features occur in this area. Impacts are expected to be negligible if wetlands and streams are avoided. Water quality would be protected by appropriate erosion control methods during construction (see Section 5.0).

#### **Flora and fauna**

There are approximately 139 acres of land conservation easements within the area of the proposed Cedar Mountain Substation North. No other state or federal land or easements, natural communities, or rare native habitats are found in the proposed substation area. No state or federal protected or rare species or habitats occur in the proposed substation area.

#### **Cedar Mountain Substation North 115 kV Reroute**

The applicants would need to reroute the exiting 115 kV line to tap into the proposed Cedar Mountain Substation North. The applicants have identified one proposed reroute option: Reroute C, which is located just north of the City of Franklin. The reroute parallels the east side of County Road 73 and follows a field line to the west of County Highway 5. Proposed Reroute C connects to the southwest edge of the proposed Cedar Mountain Substation North. Map 7.7-02 shows this reroute option.

Proposed Reroute C is located in Renville County. There are a few small, farmed drainages in the vicinity of proposed Reroute C and a few homesteads within the proposed reroute area. The description of natural resources and potential impacts associated with the proposed Cedar Mountain North Reroutes A and B, described above, also apply to proposed Reroute C. The applicants estimate permanent impacts to agricultural lands within proposed Reroute C at 17,150 square feet. The applicants estimate that 49 acres of land would be temporarily impacted by proposed Reroute C due to transmission line construction.

There is a snowmobile trail system located within the area of proposed Reroute C. The trail parallels 670th Avenue and continues south parallel to County Road 73. The closest roadways are County Road 73 and County Highway 5, which run north-south. Additionally, 660th Avenue and 670th Avenue run east-west through the proposed reroute area. No other surface transportation land uses are found in this region.

There are 16 architectural sites within one mile of proposed Reroute C (See Map 7.7-02). None of these structures have been evaluated for listing on the NRHP and would not be impacted by the construction or maintenance of the proposed Project.

#### **Water Quality and Resources**

There is a ditch located in the eastern half of Section 26 in Birch Coulee Township. A small NWI wetland is identified in an agricultural field in the southeast quarter of Section 36 in Birch Coulee Township. These areas would be avoided or spanned. No other water resources or water quality issues were identified within proposed Reroute C.

### Helena Substation (Proposed)

A new Helena 345/115 kV Substation would require approximately three to five acres of fenced and graded area in one of two possible options as shown on Map 7.7-03: one location west of Heidelberg in Derrynane Township, Le Sueur County, and the other location northwest of New Prague in Belle Plaine and Helena townships, Scott County. The applicants would seek to acquire 40 acres for the proposed substation construction, including the necessary buffer area around the substation.

The proposed Helena Substation would include sufficient space for a future 115 kV substation yard and a future 345 kV transformer, and would connect with the Wilmarth – Blue Lake 345 kV transmission line. If the proposed Helena Substation is sited away from the transmission line, a tap may be required to interconnect the line with the proposed Helena Substation.

### Helena Substation South

The proposed Helena Substation South 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, with the majority of the site located west of County Highway 32.

There are a few small, farmed drainages and several wetlands in the vicinity of the proposed substation. Wooded areas occur along the drainage areas. Several homes are present throughout the landscape. None of these homes would have to be moved or displaced. The elevation of the site ranges from 950 feet to 1,050 feet AMSL.

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.

### Archaeological and Historic Resources

There are two archaeological sites located within one mile of the proposed Helena Substation South. These sites have not been evaluated for the NRHP and would not be impacted by construction or maintenance of the Project.

### Water Quality and Resources

Sheas and Renneberg Lakes, which are DNR designated PWI lakes, are located in the area of the proposed Helena Substation South. Streams in the area include Forest Prairie Creek, West Branch Raven Creek, and an unnamed stream. West Branch Raven Creek is listed by the MPCA as impaired for fecal coliform. Several wetlands total 926 acres, or 15.1 percent of the proposed substation area. FEMA floodplains are located in association with these large wetlands. One wetland is identified as a PWI wetland. Locating the substation away from the Sheas Lake WMA would avoid impacts to that habitat in the proposed substation area.

### Helena Substation North

The proposed Helena Substation North is located on the east end of the Cedar Mountain to Helena section of the Alternate Route. The proposed substation area is located north of TH 19, west of Naylor Avenue, south of 250th Street, and east of Galena Avenue.

### Recreation

Marsh WMA is located adjacent to the northeast portion of the proposed Helena Substation North and a small piece of Michel Marsh WMA is located in the western portion of the proposed substation area. Both WMAs provide hunting and wildlife observation opportunities. There are approximately two miles of snowmobile trails within the area of the proposed Helena Substation North. The applicants have indicated they would work to avoid all recreational resources when siting the proposed Helena Substation North area.

### Public Services

Scott County is planning to extend County Highway 2 through this region to connect with U.S. Highway 169. A pipeline owned and operated by Northern Natural Gas Company cuts diagonally northwest-southeast across the land area within the area of the proposed Helena Substation North, connecting with Belle Plaine and other pipelines in the region. The MinnCan Pipeline travels across the northern edge of the substation area; however, the substation would not be located near either of these facilities.

### Archeological and Historical Sites

There are two archaeological sites located within one mile of the proposed Helena Substation North (See Map 7.7-03). These sites have not been evaluated for the NRHP and would not be impacted by the construction or maintenance of the proposed Project. There are five architectural sites within one mile of the proposed Helena Substation North (See Map 7.7-03). These structures have not been evaluated for the NRHP and would not be impacted by the construction or maintenance of the proposed Project.

### Water Quality and Resources

The West Branch of Raven Creek, County Ditch 10, an unnamed stream, and an unnamed ditch are located in this proposed substation area. All four streams are classified as PWIs. The West Branch Raven Creek and County Ditch 10 are listed by the MPCA as impaired due to fecal coliform. Wetlands total approximately 618 acres, or 11.0 percent of the proposed substation area. There is one large wetland located on the southeast side, one on the northeast side, and one on the northwest side of the proposed substation area. A FEMA floodplain is located in the southeast quarter of Section 25 in Belle Plaine Township. Impacts to wetlands and streams can be avoided in most cases. Water quality would be protected by appropriate erosion control methods during construction (see Section 5.0).

### Flora and Fauna

The Marsh WMA, and is located in the northeast portion of the proposed substation area And includes wetland and prairie. The Michel Marsh WMA is located on the western side of the substation area and includes wetland and prairie habitat. No other state or federal land or easements, natural communities, or rare native habitats are found in the proposed substation area. Locating the proposed substation away from the Michael Marsh and Marsh WMAs would avoid impacts to wetland and prairie habitat.

### Lake Marion Substation (Existing)

The Project would require the expansion of the existing Lake Marion Substation to house necessary equipment. Approximately 12 to 16 acres of land would be required for the fenced and graded substation area. There are small, farmed drainages, wetlands, roads, areas of development, and several homes present throughout the area. The elevation of the proposed Lake Marion Substation expansion area is approximately 1,030 feet AMSL.

There is a snowmobile trail that follows Pillsbury Avenue adjacent to the proposed Lake Marion Substation expansion area. The applicants do not anticipate any impacts to snowmobile trails within the substation area.

#### *Archeological and Historical Sites*

There are two architectural sites located within one mile of the proposed expansion area. These structures have not been evaluated for the NRHP and would not be impacted by the expansion or operation of the substation.

#### *Water Quality and Resources*

There are three wetlands totaling 1.1 acres within the proposed expansion area. No other water resources are located in the proposed substation expansion area. These wetlands may need to be filled for the proposed substation expansion.

#### *Flora and fauna*

The Spartina WMA is located within one mile of the proposed expansion 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. No rare or unique species or habitats are located within one mile of the proposed expansion area.

### Hampton Substation (Proposed)

The new 40-acre Hampton Substation area would be 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 of the proposed substation area is located south of 210th Street East and east of TH 50. Map 7.7-04 contains maps of the proposed substation area location.

There are a few small, farmed drainages in the vicinity of the proposed substation. Wooded areas occur along the drainage areas. Several homes are present throughout the landscape. None of these homes would have to be moved or displaced. The area is primarily agricultural, although both the City of Hampton and Hampton Township are located near the proposed substation area. The elevation of the site ranges from 850 feet to 1,000 feet AMSL.

The proposed substation would be located outside of Hampton and away from most of the region's identified scenic resources or recreation areas. In addition, the height of the substation structure would minimally impact the viewshed of area residents living in the immediate vicinity of the proposed substation.

Major roads within the proposed 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 via either a frontage road or township road.

#### *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 that would connect the proposed transmission line to an existing 345 kV line would be located less than one quarter mile from the pipeline.

#### *Archeological and Historical Sites*

There are four archaeological sites located within the area of the proposed Hampton Substation (See Map 7.7-04). These sites have not been evaluated for the NRHP and would not be impacted by the construction or maintenance of the proposed Project. There are 27 architectural sites within one mile of the proposed Hampton Substation. These structures have not been evaluated for the NRHP and would not be impacted by the construction or maintenance of the Project.

#### *Flora and fauna*

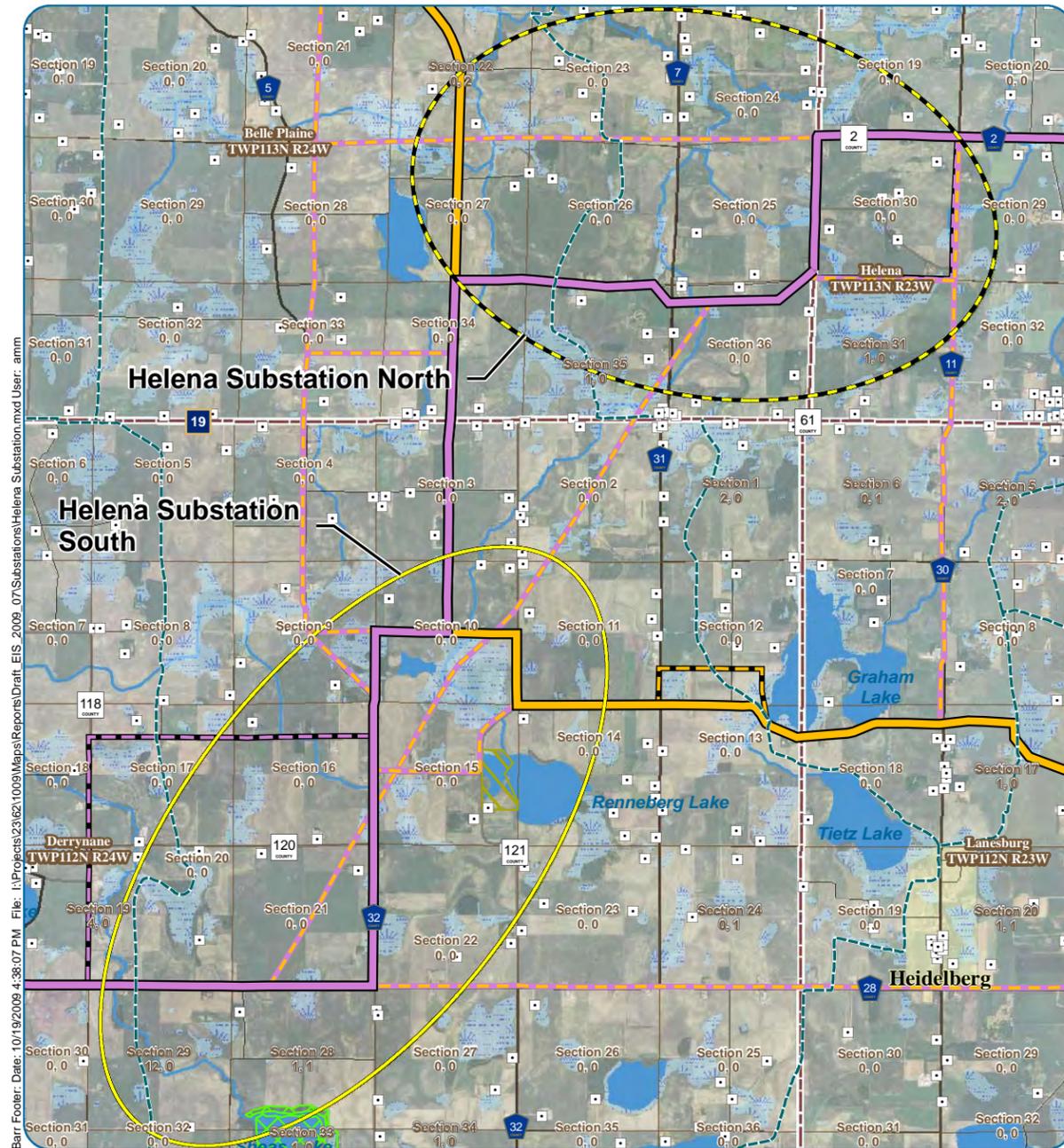
There is a mesic prairie located approximately two miles northwest of Hampton in a MCBS area of moderate biodiversity significance and SNA. Otherwise, agricultural land uses dominate the landscape. The mesic prairie and MCBS area provide habitat for prairie wildlife. Locating the substation away from these areas would avoid impacts to wildlife resources and associated habitat.

#### *Rare and Unique Natural Resources*

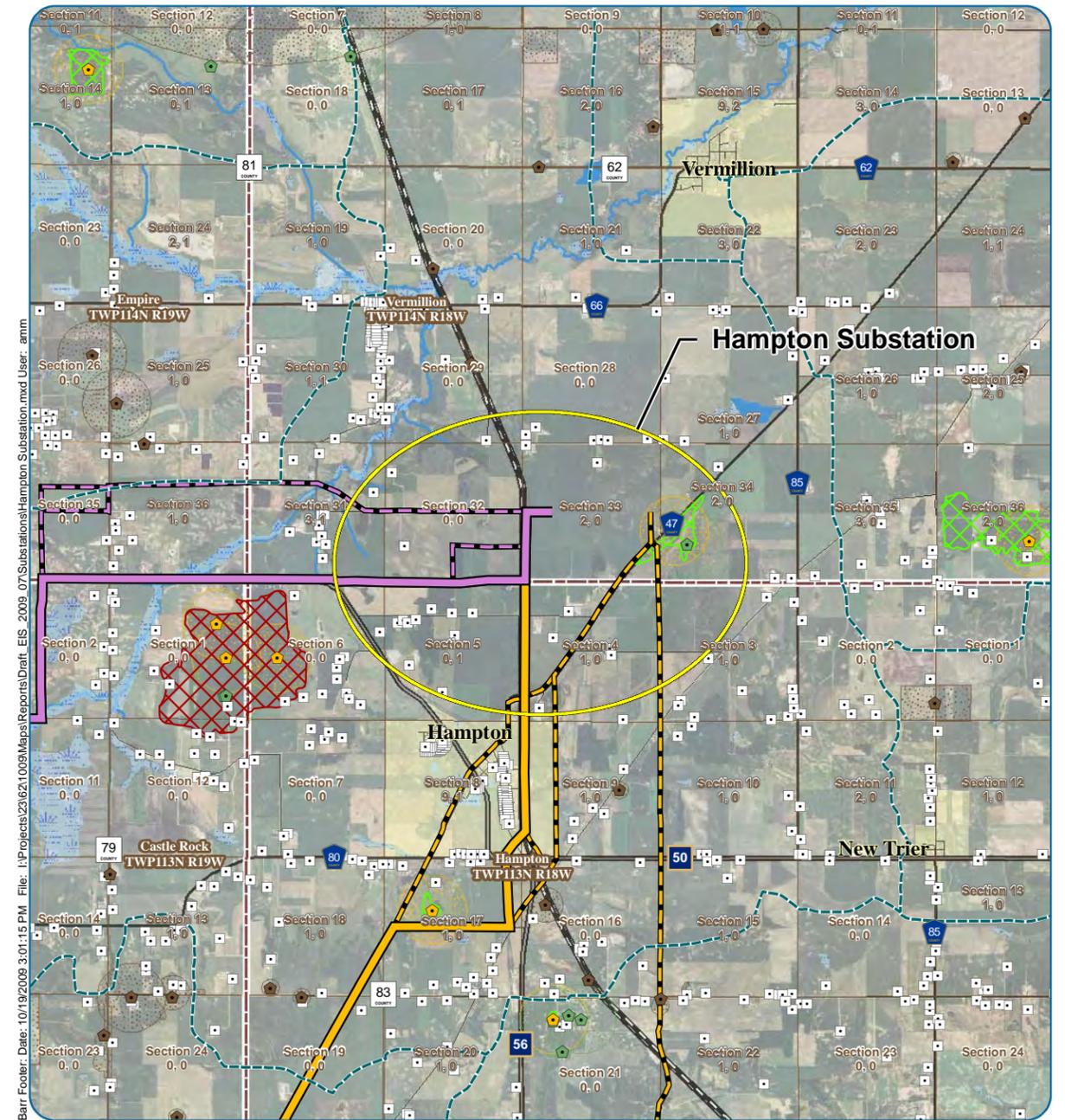
One occurrence of a loggerhead shrike has been recorded at a location two and a half miles north of Hampton. One occurrence of the plant species rattlesnake master has been located two miles

northwest of Hampton near a mesic prairie in a MCBS area of moderate biodiversity significance and SNA. Locating the substation away from the MCBS area would avoid impacts to the rattlesnake master. Avoiding impacts to prairie and grassland habitats would prevent impacts to the loggerhead shrike, which is mobile.





Map 7.7-03  
Helena Substation Areas



Map 7.7-04  
Hampton Substation Area

## Environmental Impacts

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