Xcel Energy℠

October 17, 2007

Dr. Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: Application to Public Utilities Commission for a Route Permit
Fenton to Nobles County Substation Transmission Line Project Alternative Permitting Process

PUC Docket No. E002/TL-07-1233

Dear Dr. Haar:

Northern States Power Company ("Xcel Energy"), a Minnesota Corporation and wholly-owned subsidiary of Xcel Energy Inc. is electronically filing its request for a route permit for a high voltage transmission line. The application is made pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7849. We request that the application be considered under the Alternative Permitting Process forth in Minnesota Rules 7849.5500 to 7849.5720 as authorized by Minnesota Rule 7849.5500, subp. 1(c).

The proposed project consists of a new, approximately 23-mile long, 115 kV transmission line between the Fenton Substation and the Nobles County Substation located in Nobles and Murray counties. This project is one of the three lines for which a Certificate of Need was granted in Docket No. E-002/CN-06-154.

This filing consists of the body of the application and Appendixes A through F. The application fee payment is being sent to the Department of Commerce under separate cover. Please call me at (612) 330-6538 if you have any questions regarding this filing.

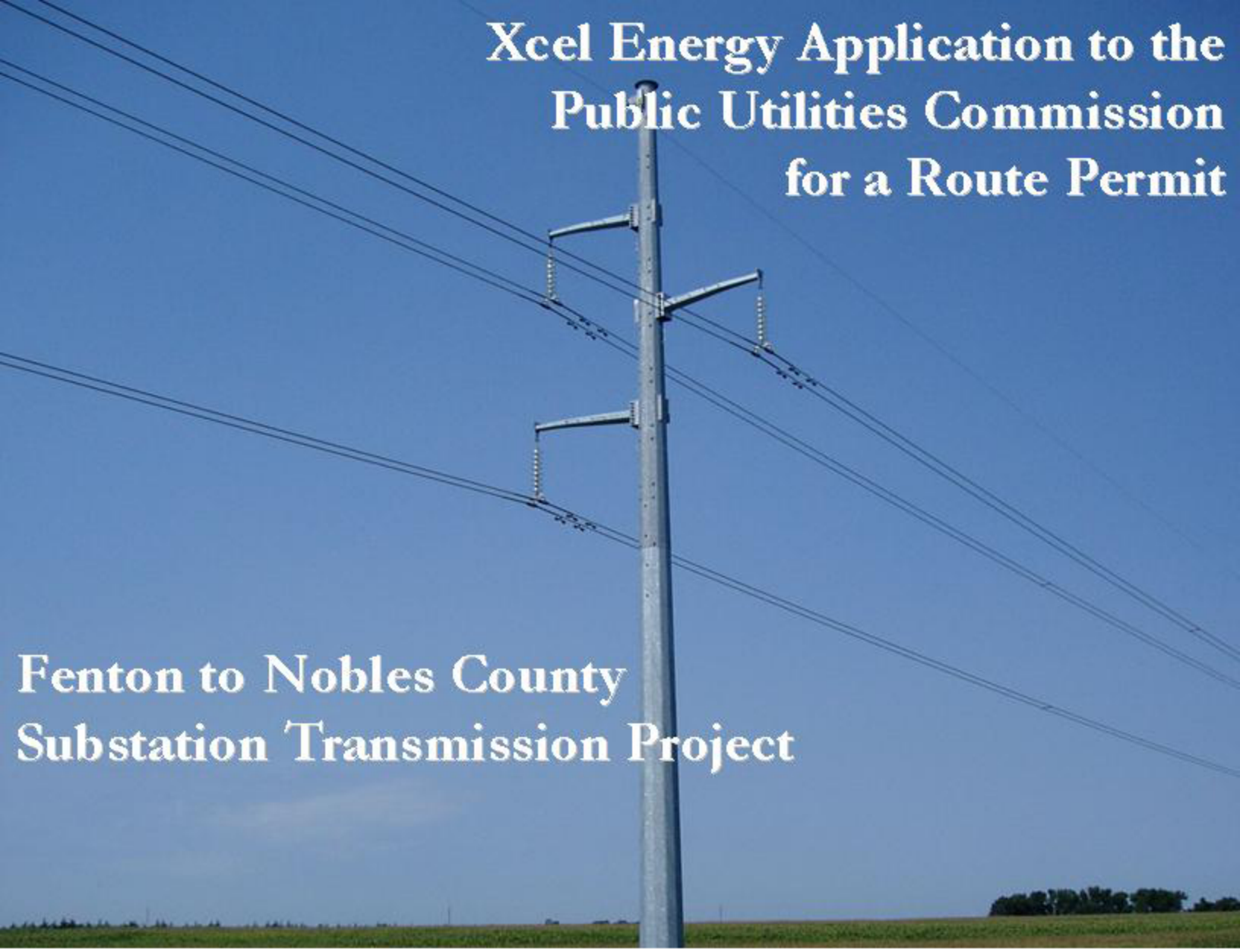
Sincerely,

Thomas G. Hillstrom
Senior Permitting Analyst

Enclosures

Cc: Department of Commerce (5 Paper Copies and one electronic copy on cd)

Xcel Energy Application to the Public Utilities Commission for a Route Permit



Fenton to Nobles County Substation Transmission Project

Alternative Permitting Process **PUC Docket No. E002/TL-07-1233**

October 17, 2007

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1.0 EXECUTIVE SUMMARY

1.1 PROPOSAL SUMMARY

Northern States Power Company ("Xcel Energy" or the "Company"), a Minnesota corporation and wholly-owned subsidiary of Xcel Energy Inc., submits this application for a route permit to the Minnesota Public Utilities Commission ("PUC") pursuant to Minnesota Rules Chapter 7849 and Minnesota Statutes Chapter 216E ("Application"). The particular facilities for which the permit is being requested (the "Project") include a new 115,000 volt ("115 kV") electric transmission line from the existing Fenton Substation in Murray County to the existing Nobles County Substation in Nobles County. As discussed below, the PUC granted the company a Certificate of Need ("CON") for the Fenton-Nobles 115 kV facilities by order dated September 21, 2007.

Chapter 216E and the PUC rules provide for an Alternative Permitting Process for certain facilities (Minnesota Statutes § 216E.04; Minnesota Rule 7849.5500). The Fenton – Nobles County high voltage transmission line ("HVTL") qualifies for the Alternative Permitting Process because the HVTL is between 100 and 200 kilovolts. Minnesota Statutes §216E.04, subd. 2(C); Minn. R. 7849.5500, subp. 1(C) (authorizing alternative process for HVTLs between 100 and 200 kilovolts).

1.2 COMPLETENESS CHECKLIST

The content requirements for an application with the PUC under the Alternative Permitting Process are identified in Minnesota Rules 7849.5500 – 7849.5720. The rule requirements are listed on Table 1 with references indicating where the information can be found in this Application.

TABLE 1
COMPLETENESS CHECKLIST

Authority	Required Information	Where
Minn. R. 7849.5530	**Contents of Application (alternative permitting process)**	
	The applicant shall include in the application the same information required in part 7849.5220, except the applicant need not propose any alternative sites or routes to the preferred site or route. If the applicant has rejected alternative sites or routes, the applicant shall include in the application the identity of the rejected sites or routes and an explanation of the reasons for rejecting them.	4.3 (See also 7849.5220, Subp. 2 below)
Minn. R. 7849.5220, Subp. 2 (applicable per Minn. R. 7849.5530)	**Route Permit for HVTL**	
A.	a statement of proposed ownership of the facility at the time of filing the application and after commercial operation	2.1
B.	the precise name of any person or organization to be initially named as permittee or permittees and the name of any other person to whom the permit may be transferred if transfer of the permit is contemplated	2.2
C.	at least two proposed routes for the proposed high voltage transmission line and identification of the applicant's preferred route and the reasons for the preference	Not applicable, per Minn. R. 7849.5530
D.	a description of the proposed high voltage transmission line and all associated facilities including the size and type of the high voltage transmission line	3.2, 4.1, 4.2, 5.1.1
E.	the environmental information required under 7849.5220, Subp. 3	See Minn. R. 7849.5220, subp. 3 (A) – (H) below
F.	identification of land uses and environmental conditions along the proposed routes	Chapter 6.0
G.	the names of each owner whose property is within any of the proposed routes for the high voltage transmission line	7.2, Appendix E.1
H.	United States Geological Survey topographical maps or other maps acceptable to the chair showing the entire length of the high voltage transmission line on all proposed routes	Appendix B
I.	identification of existing utility and public rights-of-way along or parallel to the proposed routes that have the potential to share right-of-way, the land used by a public utility (as for a transmission line), with the proposed line	5.1.2
J.	the engineering and operational design concepts for the proposed high voltage transmission line, including information on the electric and magnetic fields of the transmission line	Chapter 5.0

Authority	Required Information	Where
K.	cost analysis of each route, including the costs of constructing, operating, and maintaining the high voltage transmission line that are dependent on design and route	3.4
L.	a description of possible design options to accommodate expansion of the high voltage transmission line in the future	4.4
M.	the procedures and practices proposed for the acquisition and restoration of the right-of-way, construction, and maintenance of the high voltage transmission line	5.1.3 - 5.1.6
N.	a listing and brief description of federal, state, and local permits that may be required for the proposed high voltage transmission line	7.4
O.	a copy of the Certificate of Need or the certified HVTL list containing the proposed high voltage transmission line or documentation that an application for a Certificate of Need has been submitted or is not required	Appendix A.2
Minn. R. 7849.5220, Subp. 3	**Environmental Information**	
A.	a description of the environmental setting for each site or route	6.1
B.	a description of the effects of construction and operation of the facility on human settlement, including, but not limited to, public health and safety, displacement, noise, aesthetics, socioeconomic impacts, cultural values, recreation, and public services	6.2
C.	a description of the effects of the facility on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining	6.3
D.	a description of the effects of the facility on archaeological and historic resources	6.4
E.	a description of the effects of the facility on the natural environment, including effects on air and water quality resources and flora and fauna	0
F.	a description of the effects of the facility on rare and unique natural resources	6.6
G.	identification of human and natural environmental effects that cannot be avoided if the facility is approved at a specific site or route	See all of the effects described in Chapter 6.0
H.	a description of measures that might be implemented to mitigate the potential human and environmental impacts identified in items A to G and the estimated costs of such mitigative measures	See all of the mitigative measures identified in Section 6.0

2.0 INTRODUCTION

2.1 STATEMENT OF OWNERSHIP

Northern States Power Company ("the Company" or "Xcel Energy") is a Minnesota corporation with its headquarters in Minneapolis. Xcel Energy provides electricity services to approximately 1.2 million customers and natural gas services to 425,000 residential, commercial and industrial customers. Xcel Energy also provides electricity service to customers in South Dakota and North Dakota. Xcel Energy owns and operates the Fenton and Nobles County substations and will construct, own, and operate the new 115 kV transmission line.

2.2 PERMITTEE / PROJECT MANAGER

The permittee for the proposed project is:

Permittee: Northern States Power Company, a Minnesota corporation and wholly-owned subsidiary of Xcel Energy Inc.

Contacts: Thomas G. Hillstrom
Permitting Analyst

Address: 414 Nicollet Mall, MP-8A
Minneapolis, MN 55401

Phone: (612) 330-6538

E-mail: thomas.g.hillstrom@xcelenergy.com

2.3 CERTIFICATE OF NEED PROCESS SUMMARY

Minnesota Statutes Section 216B.243, subd. 2 states that no large energy facility shall be sited or constructed in Minnesota without the issuance of a Certificate of Need by the PUC. The 115 kV transmission line proposed for the Project is a "large energy facility" because it has a capacity in excess of 100 kV and is more than 10 miles long. See Minn. Stat. § 216B.2421, subd. 2(3). On September 14, 2007, the PUC granted a Certificate of Need for the 115 kV transmission line. In the Matter of the Application for Certificates of Need for Three 115 kV Transmission Lines in Southwestern Minnesota, Order Granting Certificates of Need ("CON Order"). The CON Order is attached as Appendix A.2.

2.4 ROUTE PERMIT, ALTERNATIVE PERMITTING PROCESS

Minnesota Statutes Chapter 216E.03, subd. 2 provides that no person may construct a high voltage transmission line without a route permit from the PUC. A high voltage transmission line is defined as a transmission line of 100 kV or more and greater than 1,500 feet in length. Minn. Stat. §216E.01, subd. 4. The 115 kV transmission line project proposed here is a high voltage transmission line and therefore a permit is required prior to construction.

The PUC rules provide for an Alternative Permitting Process for certain facilities (Minnesota Statutes § 216E.04; Minn. R. 7849.5500, subp. 1). The proposed transmission line qualifies for the Alternative Permitting process because it is between 100 and 200 kV. §216E.04, Subd. 2(C); Minn. R. 7849.5500, subp. 1(C) (authorizing alternative process for HVTLs between 100 and 200 kilovolts). Accordingly, Xcel Energy will follow the provisions of the Alternative Permitting Process outlined in Minn. R. 7849.5500 to 7849.5720.

2.5 NOTICE TO THE COMMISSION

Xcel Energy notified the PUC by letter dated September 18, 2007, that the Company intended to use the Alternative Permitting Process for the Project. This letter complies with the requirement of Minnesota Rule 7849.5500, subp. 2 to notify the PUC of this election at least 10 days prior to submitting an application for a route permit. A copy of the letter is attached in Appendix A.1.

3.0 PROJECT INFORMATION

3.1 PROJECT LOCATION

The proposed Project is located near Wilmont, Minnesota, in Murray and Nobles counties, in the following townships, ranges, and sections (Table 2). Appendix B.2 identifies the Project area.

TABLE 2
PROJECT LOCATION

County	Township (N)	Range (W)	Sections
Murray	105	42	19, 20, 29, 30-32
Nobles	104	42	6, 7, 18, 19, 30, 31
	104	43	1, 12, 13, 24, 25, 36
	103	41	7, 14-23
	103	42	6-18, 24
	103	43	1, 12, 13

3.2 PROJECT PROPOSAL

Xcel Energy proposes construction of a new 22.7-mile single-circuit 115 kV transmission line in the Wilmont area from the existing Fenton Substation to the existing Nobles County Substation.

The proposed transmission line is part of a group of three 115 kV transmission line projects in the area that together will improve the overall system's capability to support further wind energy generation development in southwestern Minnesota and eastern South Dakota.

3.3 PROJECT SCHEDULE

Xcel Energy anticipates a spring 2009 in-service date for the Fenton-Nobles County 115 kV transmission line. Construction for the Project is expected to begin in summer of 2008. This schedule is based on information known as of the date of this filing and upon planning assumptions that balance the timing of implementation with the availability of crews, material and other practical considerations. This schedule may be subject to adjustment and revision as further information is developed.

3.4 PROJECT COSTS

Xcel Energy estimates that the transmission line and substation improvements will cost approximately $24.5 million, as follows:

Fenton – Nobles County 115 kV Transmission Line	$14,000,000
Fenton Substation Modifications	$2,000,000
Nobles County Substation Modifications	$8,500,000
Total Project Costs:	$24,500,000

Operating and maintenance costs for the transmission line will be nominal for several years, since the line will be new and there is minimal vegetation maintenance required. Typical annual operating and maintenance costs for 115 kV transmission voltages across Xcel Energy's Upper Midwest system area are on the order of $300 to $500 per mile of transmission right-of-way. The principal operating and maintenance cost will be inspections, usually done by fixed-wing aircraft on a monthly basis and by helicopter once a year.

Xcel Energy performs periodic inspections of substations and equipment. The type and frequency of inspection varies depending on the type of equipment. Typical inspection intervals are semi-annually or annually. Maintenance and repair are performed on an as-needed basis, and therefore the cost varies from substation to substation

4.0 DETAILED FACILITY DESCRIPTION AND ROUTE SELECTION RATIONALE

4.1 TRANSMISSION LINE CONSTRUCTION

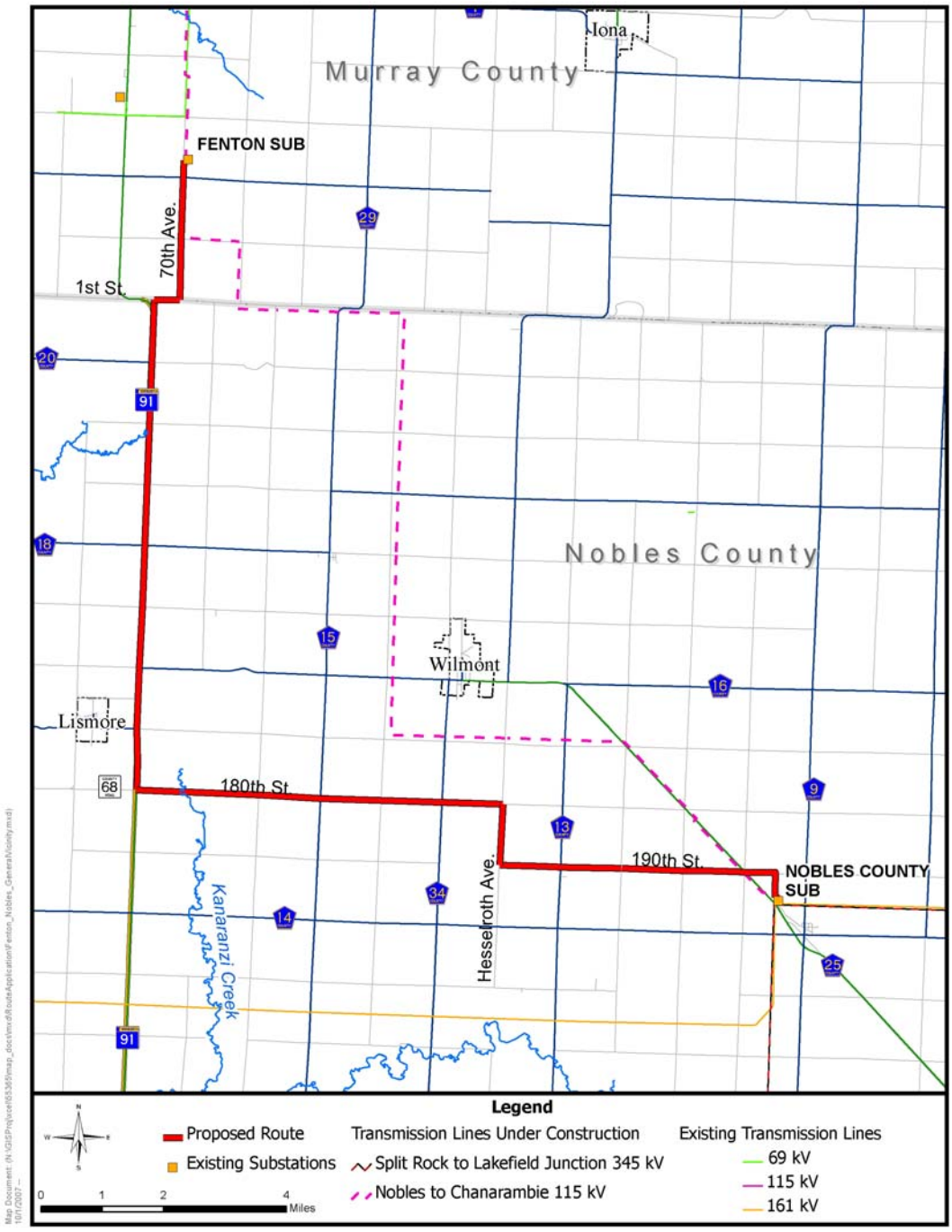
This Project involves constructing a single circuit, 115 kV transmission line approximately 22.7 miles long between the existing Fenton Substation and the existing Nobles County Substation. The line will be constructed with bundled conductors on single steel pole structures with a galvanized or weathering steel finish.

From the Fenton Substation the 115 kV line will generally go south along 70th Avenue and Highway 91 until 180th Street and then head east to the Nobles County Substation. When the line is parallel to a roadway, poles will generally be placed just outside of the public right-of-way, approximately 5 feet on to private property. A detailed route description is presented below.

Beginning on the north end of the line at the Fenton Substation, the line will exit the substation on the west side and then run south along 70th Avenue for 2.3 miles to 1st Street. The line will turn west on 1st Street for 0.4 miles to Highway 91. The line will run south along Highway 91 for 8.0 miles to 180th Street, where it will turn east along 180th Street for 6.0 miles to Hesselroth Avenue. At Hesselroth Avenue the line will run south for one mile to 190th Street and then turn east along 190th Street for 4.0 miles to CSAH 25. The proposed line will then follow 190th Street east for approximately 0.5 mile and then turns south for 0.5 mile to the Nobles County Substation. Figure 1 below provides an overview of the route. Appendix B contains detailed maps.

The segments for this proposed route are shown on Appendix B.4 and are identified as ZZ, Y, WW, X, U, R, Q, P2, C1, PP1, AA and A1. Xcel Energy requests a route width of 200 feet on each side of the road centerline (400 feet total width) to accommodate site-specific construction issues and landowner concerns.

FIGURE 1
GENERAL VIEW OF PROPOSED ROUTE



4.2 ASSOCIATED FACILITIES

4.2.1 Fenton Substation

The Fenton Substation, constructed in 2007, was designed to accommodate expansion. The additional equipment for the proposed 115 kV line will be placed within the existing footprint and will include four new 115 kV circuit breakers ("breakers") and associated disconnects — three in existing breaker bays and one in a new breaker bay — a 115 kV five-position ring bus, and new concrete foundations to support the electrical equipment. The proposed substation modifications allow for the extension of the existing Main Bus #1 and installation of a Main Bus #2 to complete the ring which will further enhance reliability. The existing control house and electrical control systems within the control house are currently adequately sized to handle the capacity from the proposed 115 kV transmission line.

Plans for the Fenton County Substation modifications are attached as Appendix B.5.

4.2.2 Nobles County Substation

The existing Nobles County Substation was also built in 2007, and was constructed to accommodate expansion. The new equipment at the Nobles County Substation will be placed within the existing footprint and will include the addition of one new 345kV/115 kV transformer, two 345 kV breakers, four 115 kV breakers, a 345 kV 5-position ring bus and new concrete foundations to support the control house and electrical equipment. The substation modifications also include the installation of the 345 kV Main Bus #2 and extension of the existing 115 kV Main Bus #1 to complete the respective ring busses. The existing control house and electrical control systems are adequately sized to accommodate the new equipment.

Plans for the Nobles County Substation modifications are attached as Appendix B.6

4.3 ROUTE SELECTION PROCESS

The route was developed by Xcel Energy routing and engineering personnel based on its investigation of the overall Project area, specific evaluation of 35 route segments and landowner feedback provided at a series of public meetings and through written comments.

Xcel Energy held its first public meeting on May 22, 2007, at the Wilmont Community Center to inform area landowners about the Project and to gather input early in the route selection process. Approximately 60 people attended. Their comments focused primarily on maximizing distances to occupied homes and minimizing impacts to agriculture.

After the first public meeting, the Company consulted with local, state, and federal agencies associated with the Project Area. Agencies generally responded with requests to be updated on further Project developments and informed Xcel Energy of required permits for the Project along with specific applicable guidelines, rules, and regulations. Xcel Energy will continue to communicate with the agencies throughout the routing process.

The Company also performed an analysis of environmental resources in the Project area using computer mapping of data including aerial photographs, and topographic maps. Environmental resources identified in the Project Area include United States Fish and Wildlife Service ("USFWS") Topeka shiner streams designated as critical habitat, numerous wildlife management areas, and wetlands. A complete list of environmental resources by segment for the proposed route and Project Area is contained in Appendix F.

Based on this information, preliminary route options were developed with the following primary objectives:

- Minimize land use impacts by routing along roads and existing transmission lines to reduce the amount of new right-of-way required and by placing new facilities on field lines and property lines, where an existing corridor (e.g. fence line or access road) is present;
- Minimize impacts to residences;
- Minimize impacts to environmental resources; and
- Minimize the length of the transmission line to reduce the impact area and costs for the Project.

Preliminary route options included segments running west from the Nobles County Substation and segments running south from the Fenton Substation. Generally, the east-west segments evaluated, north to south, included options along 180th Street, 190th Street, 200th Street, and 210th Street. The north-south segments evaluated, starting west and moving east across the project area include 60th Avenue, State Highway 91, 70th Avenue, Dillman Avenue, and Durfee Avenue.

A second public meeting was held September 12, 2007, at the Wilmont Community Center to discuss these preliminary route options. Landowners generally asked about what side of the road the line was being proposed for the facilities and expressed their preferences to avoid a certain side of road and to avoid impacts to trees. See Appendix E.2 for written comments.

Xcel Energy also consulted further with USFWS and the Minnesota Department of Natural Resources ("MnDNR") regarding Topeka shiner habitat and with the Minnesota

Department of Transportation ("MnDOT") regarding variances in road right-of-way widths in the Project Area. Both USFWS and MnDNR had identified Topeka shiner habitat as a natural resource in the Project Area in response to Project notices sent to agencies in May 2007. Representatives from USFWS and MnDNR agreed that the appropriate mitigation method would be to span Topeka shiner habitat and to avoid causing any material or sediment to fall in the habitat during construction.

The right-of-way width concerns were addressed at a meeting with MnDOT on September 20, 2007. At that meeting, MnDOT informed Xcel Energy that the road right-of-way widths vary along the route segment paralleling State Highway 91.

Based on the information gathered from public meeting and the agencies, the Company then refined its route proposal as detailed in this Application. The Company believes the proposed route best meets the objectives stated above. A summary of the of the factors supporting this route are as follows:

- Land use impacts are minimized by sharing road right-of-way. Approximately 97.6% of the route shares road right-of-way.
- Impacts to residences are also minimized. There are no homes within 100 feet of the transmission line. There is one home located between 100 and 200 feet of the line. There are ten homes located between 200 and 400 feet from the proposed line.
- Environmental impacts are minimized. The transmission line will span Kanaranzi Creek, a Topeka shiner critical habitat area, between Dillman Avenue and State Highway 91 along 180th Street.
- The route minimizes length of the proposed line and therefore maintains lower costs relative to other longer alternatives.

Consideration of Route Alternatives

In selecting the route proposed in this Application, Xcel Energy also considered a range of alternatives. In all, 35 route segments were evaluated. Appendix B.4 identifies each of these segments. All of these alternatives are single circuit alternatives. A double circuit option with the existing Fenton – Nobles County 115 kV line was not evaluated because double circuiting is not compatible with the need for the proposed 115 kV transmission line. As the PUC recognized in its Order Granting Certificates of Need, the new line is being proposed because the loss of the existing Fenton – Nobles County 115 kV line is the transmission system element that limits the generation outlet capability in the area. Because the existing Nobles County – Fenton 115 kV line is the critical circuit, reliability would not be improved if both lines were placed on the same structures — they could both be lost in a storm or other single event. Consequently, double circuiting the existing Nobles County – Fenton 115

kV would not serve the major function of the line and was therefore not considered as an option.

The list of alternatives was narrowed through further evaluation. Xcel Energy eliminated several preliminary route segment alternatives because of conflicts with existing land use and potential environmental impacts. The other routes were eliminated due to the number of impacts to homes and the environment and minimizing costs of the project. The preferred route along the highway also results in greater distances between the proposed facilities and homes, buildings and structures. The general reasons certain segments were eliminated are outlined as follows:

- The north-south segment along Dillman Avenue between 150th Street and 1st Street was considered but not selected due to the number of residences along the segment. There are three homes located between 200 and 400 feet of the transmission line when compared to the proposed segment along State Highway 91 has two homes located between 200 and 400 feet.
- The north-south segment along Durfee Avenue between 150th Street and 180th Street was eliminated due to the number of homes along the route. Compared to the same segment along State Highway 91 there is one additional home located between 50 and 100 feet, one additional home located between 100 and 200 feet, and one additional home located between 200 and 400 feet of the transmission line.
- Along 190th Street between Hesselroth Avenue and Fellows Avenue was not proposed because there is no road or other physical corridor, which would require more land use impact compared to following an existing corridor.
- There is no road south of 160th Street south of Dillman Avenue so this segment was not selected.
- Along 200th Street between the Nobles County Substation and State Highway 91 was eliminated because there are more homes and they would be located closer to the transmission line.
- Along 210th Street between the Nobles County Substation and Highway 91 was not selected because there are four more homes located between 200 and 400 feet of the transmission line.

4.4 DESIGN OPTIONS TO ACCOMMODATE FUTURE EXPANSION

The Fenton and Nobles County substations are designed to provide for future transmission facilities in addition to those proposed here. The Fenton Substation can accommodate one additional 115 kV transmission line. The Nobles County Substation can accommodate one additional 345 kV transmission line and two additional 115 kV lines.

5.0 ENGINEERING DESIGN, CONSTRUCTION AND RIGHT-OF-WAY ACQUISITION

5.1.1 Transmission Structures

The structures are proposed to be steel, single circuit poles with davit arms (as shown in Figure 2). The conductor on the single circuit line will be bundled 795 kcmil 26/7 Aluminum Core Steel Supported ("ACSS"). The structures will be built on concrete foundations and the distance between each pole ("span") will be 500 feet on average.

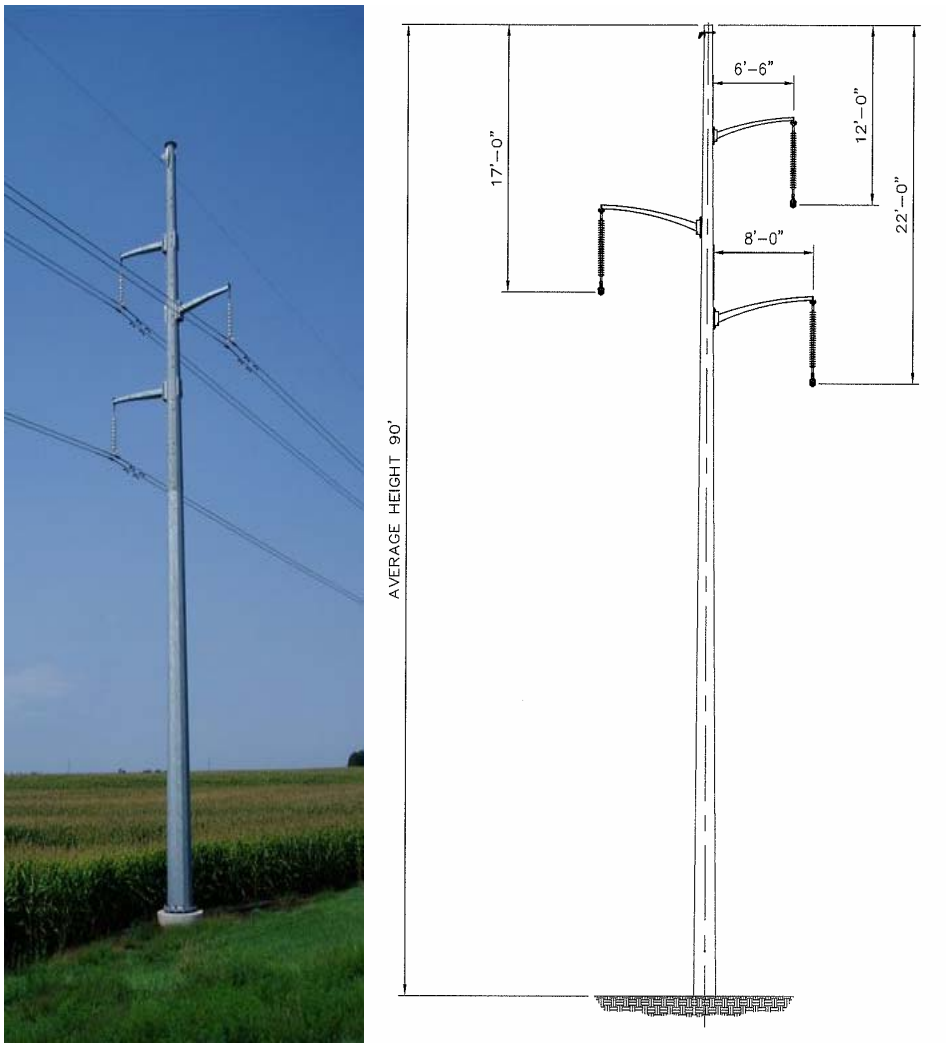
Table 3 summarizes the structure design for the line:

TABLE 3
STRUCTURE DESIGN SUMMARY

Project Component	Line Voltage	Structure Type	Pole Type	Conductor	Foundation	Double Circuit / Single Circuit	Average Span (feet)	Average Height (feet)
Single Circuit	115 kV	Davit Arms	Steel	Bundled- 795 kcmil 26/7 ACSS	Concrete	Single	500	90

The proposed transmission line will be designed to meet or surpass all relevant local and state codes (including the National Electric Safety Code ("NESC")) and North American Electric Reliability Corporation ("NERC") and Xcel Energy standards. Appropriate standards will be met for construction and installation, and all applicable safety procedures will be followed during and after installation.

FIGURE 2
115 KV STEEL SINGLE CIRCUIT DAVIT ARM STRUCTURE BUNDLED CONDUCTOR

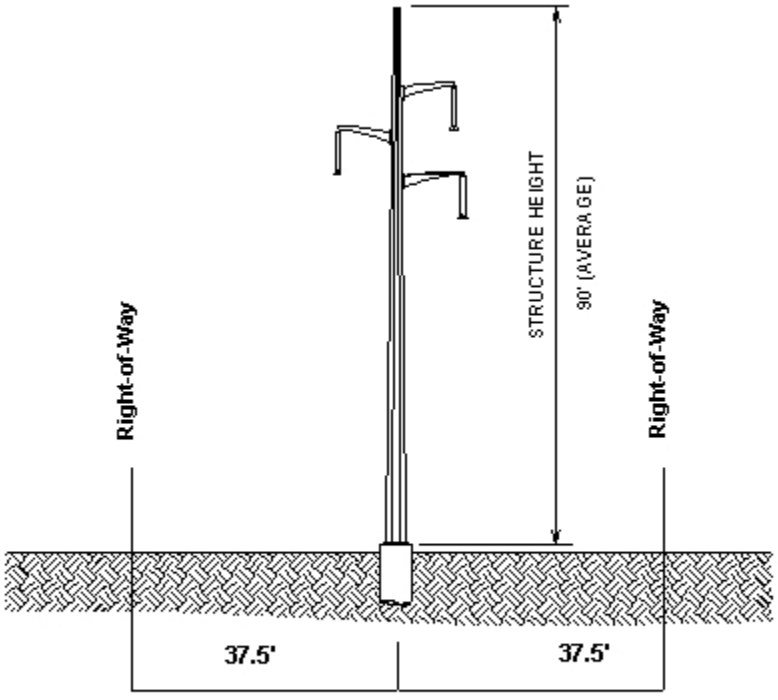


5.1.2 Right-of-Way Width

Xcel Energy will require a 75-foot wide right-of-way for the transmission line. When the line is parallel to a roadway, poles will generally be placed 5 feet within the private right-of-way and therefore, a little less than half of the line right-of-way will share the existing road right-of-way, resulting in an easement of lesser width being required from the landowner. The amount of new easement required will depend upon the road configuration and the distance between the road and the transmission line. In general, the structures will be placed as close to the property line as practical. Figure 3 shows the general right-of-way requirements for the line.

Locations of structures along township roads have been an issue during construction of recent transmission projects. Township roads often do not have a well-defined right-of-way and can vary from section lines. Xcel Energy's recent work in Nobles County required coordination with various townships and landowners to address this issue. The following approach was developed through this recent effort and is proposed to be used for this Project: Along township roads, this line will be located parallel to and 38 feet from the section line the road is centered on. If the township road is not located along a section line, the line will be located 38 feet from the identified centerline of the road. For the Project, 22.2 of the 22.7 miles (98 percent) would be parallel to existing roadways additionally 1.3 of the 22.7 miles (6 percent) will parallel existing transmission lines.

FIGURE 3
RIGHT-OF-WAY REQUIREMENTS



115 kV Line Typical Structure
75' Typical Total Right-of-Way Width

5.1.3 Right-of-Way Evaluation and Acquisition

The right-of-way acquisition process begins early in the detailed design process. For transmission lines, utilities acquire easement rights across the parcels to accommodate the facilities. The evaluation and acquisition process includes title examination, initial owner contacts, survey work, document preparation, and purchase. Each of these activities, particularly as it applies to easements for transmission line facilities, is described in more detail below.

The first step in the right-of-way process is to identify all persons and entities that may have a legal interest in the real estate upon which the facilities will be built. To compile this list, a right-of-way agent or other persons engaged by the utility will complete a public records search of all land involved in the project. A title report is then developed for each parcel to determine the legal description of the property and the owner(s) of record of the property, and to gather information regarding easements, liens, restriction, encumbrances, and other conditions of record.

After owners are known, a right-of-way representative personally contacts each property owner or the property owner's representative. The right-of-way agent describes the need for the transmission facilities and how the specific project may affect each parcel. The right-of-way agent also seeks information from the landowner about any specific construction concerns.

The next step in the acquisition process is evaluation of the specific parcel. For this work, the right-of-way agent will request permission from the owner for survey crews to enter the property to conduct preliminary survey work. Permission may also be requested to take soil borings to assess the soil conditions and determine appropriate foundation design. Surveys are conducted to locate the right-of-way corridors, natural features, man-made features, and associated elevations for use during the detailed engineering of the line. The soil analysis is performed by an experienced geotechnical testing laboratory.

During the evaluation process, the location of the proposed transmission line will be staked. This means that the survey crew locates each structure or pole on the ground and places a surveyor's stake to mark the structure's anticipated location. By doing this, the right-of-way agent can show the landowner exactly where the structure(s) will be located on the property. The right-of-way agent also delineates the boundaries of easement area required for safe operation of the lines.

Prior to the acquisition of easements, land value data will be collected, and based upon the impact of the easement to the market value of each parcel, a fair market value offer will be developed. The right-of-way agent then contacts the property owner(s) to present the offer for the easement and discuss the amount of just compensation for the rights to build, operate, and maintain the transmission facilities within the easement area and reasonable access to the easement area. The agent will also provide maps of the line route or site, maps showing the landowner's parcel. The landowner is allowed a reasonable amount of time in which to consider the offer and to present any material that the owner believes is relevant to determining the property's value.

In nearly all cases, utilities are able to work with the landowners to address their concerns and an agreement is reached for the utilities' purchase of land rights. The right-of-way agent prepares all of the documents required to complete each transaction. Some of the documents that may be required include: easement, purchase agreement or contract, and deed.

In rare instances, a negotiated settlement cannot be reached and the landowner chooses to have an independent third party determine the value of the rights taken. Such valuation is

made through the utility's exercise of the right of eminent domain pursuant to Minnesota Statutes Chapter 117. The process of exercising the right of eminent domain is called condemnation.

To start the condemnation process, a utility files a Petition in the district court where the property is located and serves that Petition on all owners of the property. If the court approves the Petition, the court then appoints a three-person condemnation "commission." The three people must be knowledgeable of applicable real estate issues. Once appointed, the commissioners schedule a viewing of the substation location or property over and across which the transmission line easement is to be located. Next, the commission schedules a valuation hearing where the utility and landowners can testify as to the fair market value of the easement or fee. The commission then makes an award as to the value of the property acquired and files it with the court. Each party has 40 days from the filing of the award to appeal to the district court for a jury trial. In the event of an appeal, the jury hears land value evidence and renders a verdict. At any point in this process, the case can be dismissed if the parties reach a settlement.

As part of the right-of-way acquisition process, the right-of-way agent will discuss with the owner of each parcel the construction schedule and construction requirements. To ensure safe construction of the line, special consideration may be needed for fences, crops or livestock. For instance, fences may need to be moved or temporary or permanent gates may need to be installed; crops may need to be harvested early; and livestock may need to be moved. In each case the right-of-way agent coordinates these processes with the landowner.

5.1.4 Transmission Construction Procedures

Construction will begin after federal, state and local approvals are obtained, property and rights-of-way are acquired, soil conditions are established and final design is completed. The precise timing of construction will take into account various requirements that may be in place due to permit conditions, system loading issues and available workforce, and materials.

The actual construction will follow standard construction and mitigation practices that were developed from experience with past projects. These best practices address right-of-way clearance, staging, erecting transmission line structures and stringing transmission lines. Construction and mitigation practices to minimize impacts will be developed based on the proposed schedule for activities, permit requirements, prohibitions, maintenance guidelines, inspection procedures, terrain and other practices. In some cases these activities, such as schedules, are modified to minimize impacts to sensitive environments.

Transmission line structures are generally designed for installation at existing grades. Typically, structure sites with 10% or less slope will not be graded or leveled. Sites with more

than 10% slope will have working areas graded level or fill brought in for working pads. If the landowner permits, it is preferred to leave the leveled areas and working pads in place for use in future maintenance activities, if any. If permission is not obtained, the site is graded back to its original condition as much as possible and all imported fill is removed from the site.

Typical construction equipment used on a project consists of tree removal equipment, mowers, cranes, backhoes, digger-derrick line trucks, track-mounted drill rigs, dump trucks, front end loaders, bucket trucks, bulldozers, flatbed tractor-trailers, flatbed trucks, pickup trucks, concrete trucks and various trailers. Many types of excavation equipment are set on wheel or track-driven vehicles. Wood or steel poles are transported on tractor-trailers.

Staging areas are usually established for the project. Staging involves delivering the equipment and materials necessary to construct the new transmission line facilities. Construction of the project would likely include one or two staging areas. Structures are delivered to staging areas, sorted and loaded onto structure trailers for delivery to the staked location. The materials are stored until they are needed for the project. Steel pole structures are hauled unassembled on pole trailers to the staked location and placed within the right-of-way until the pole sections are assembled and the arms attached. Insulators and other hardware are attached while the steel pole is on the ground. The pole is then lifted, placed and secured on the foundation using a crane.

In some cases, additional space (temporary lay down areas) may be required. These areas will be selected for their location, access, security and ability to efficiently and safely warehouse supplies. The areas are chosen to minimize excavation and grading. The temporary lay down areas outside of the transmission line right-of-way will be obtained from affected landowners through rental agreements. Insulators and other hardware are attached to the structure while it is on the ground in the laydown area, and then a line truck lifts and places it.

When it is time to install the poles, structures are moved from the staging areas, delivered to the staked location and placed within the right-of-way until the structure is set. Typically, access to the transmission line right-of-way corridor is made directly from existing roads or trails that run parallel or perpendicular to the transmission line right-of-way. In some situations, private field roads or trails are used. Permission from the property owner is obtained prior to accessing the transmission line corridor. Where necessary to accommodate the heavy equipment used in construction, including cranes, cement trucks and hole drilling equipment, existing access roads may be upgraded or new roads may be constructed. New access roads may also be constructed when no current access is available or the existing access is inadequate to cross roadway ditches.

To place single steel poles in the ground, concrete foundations are generally used, especially for angle and dead end structures along the route. In those cases, holes will need to be drilled in preparation for the concrete. Drilled pier foundations may vary from 6 to 8 feet in diameter and 12 or more feet deep, depending on soil conditions. Concrete trucks are required to bring the concrete in from a local concrete batch plant.

Environmentally sensitive areas and wetland areas may also require special construction techniques in some circumstances. During construction, the most effective way to minimize impacts to wet areas will be to span all streams and rivers. In addition, Xcel Energy will not allow construction equipment to be driven across waterways except under special circumstances and only after discussion with the appropriate resource agency. Where waterways must be crossed to pull in the new conductors and shield wires, workers may walk across, use boats, or drive equipment across ice in the winter. These construction practices help prevent soil erosion and ensure that equipment fueling and lubricating will occur at a distance from waterways.

If impacts to wetlands occur, they will be minimized through construction practices. Construction crews will maintain sound water and soil conservation practices during construction and operation of the facilities to protect topsoil and. adjacent water resources and minimize soil erosion. Practices may include containing excavated material, protecting exposed soil and stabilizing restored soil. Crews will avoid major disturbance of individual wetlands and drainage systems during construction. This will be accomplished by strategically locating new access roads and spanning wetlands and drainage systems where possible. When it is not feasible to span the wetland, construction crews will rely on several options during construction to minimize impacts:

- When possible, construction will be scheduled during frozen ground conditions.
- Crews will attempt to access the wetland with the least amount of physical impact to the wetland (i.e., shortest route).
- The structures will be assembled on upland areas before they are brought to the site for installation.
- When construction during winter is not possible, construction mats will be used where wetlands would be impacted.

5.1.5 Restoration Procedures

During construction, crews will attempt to limit ground disturbance wherever possible. However, areas are disturbed during the normal course of work, which can take several weeks in any one location. As construction on each parcel is completed, disturbed areas are restored to their original condition to the maximum extent practicable. The right-of-way agent contacts each property owner after construction is completed to determine whether

any damage has occurred as a result of the project. If damage has occurred to crops, fences or the property, Xcel Energy will fairly reimburse the landowner for the damages sustained. In some cases, Xcel Energy may engage an outside contractor to restore the damaged property to as near as possible to its original condition. Portions of vegetation that are disturbed or removed during construction of transmission lines will naturally reestablish to pre-disturbance conditions. Resilient species of common grasses and shrubs typically reestablish with few problems after disturbance. Areas with significant soil compaction and disturbance from construction activities along the proposed transmission line corridor will require assistance in reestablishing the vegetation stratum and controlling soil erosion. Commonly used methods to control soil erosion and assist in reestablishing vegetation include, but are not limited to:

- Erosion control blankets with embedded seeds
- Silt fences
- Hay bales
- Hydro seeding
- Planting individual seeds or seedlings of native species

These erosion control and vegetation establishment practices are regularly used in construction projects and are referenced in the construction permit plans. Long-term impacts are minimized by utilizing these construction techniques.

5.1.6 Maintenance Procedures

Transmission lines and substations are designed to operate for decades and require only moderate maintenance, particularly in the first few years of operation.

The estimated service life of the proposed transmission line for accounting purposes is approximately 40 years. However, practically speaking, high voltage transmission lines are seldom completely retired. Transmission infrastructure has very few mechanical elements and is built to withstand weather extremes that are normally encountered. With the exception of severe weather such as tornadoes and heavy ice storms, transmission lines rarely fail. Transmission lines are automatically taken out of service by the operation of protective relaying equipment when a fault is sensed on the system. Such interruptions are usually only momentary. Scheduled maintenance outages are also infrequent. As a result, the average annual availability of transmission infrastructure is very high, in excess of 99%.

The principal operating and maintenance cost for transmission facilities is the cost of inspections, usually done monthly by air. Annual operating and maintenance costs for transmission lines in Minnesota and the surrounding states vary. However, for voltages from 115 kV through 345 kV, past experience shows that costs are approximately $300 to $500

per mile. Actual line-specific maintenance costs depend on the setting, the amount of vegetation management necessary, storm damage occurrences, structure types, materials used, and the age of the line.

Substations require a certain amount of maintenance to keep them functioning in accordance with accepted operating parameters and the National Electric Safety Code requirements. Transformers, circuit breakers, batteries, protective relays, and other equipment need to be serviced periodically in accordance with the manufacturer's recommendation. The site itself must be kept free of vegetation and drainage maintained.

5.2 ELECTRIC AND MAGNETIC FIELDS

The term EMF refers to electric and magnetic fields that are coupled together, such as in high frequency radiating fields. For the lower frequencies associated with power lines, EMF should be separated into electric and magnetic fields. Electric and magnetic fields arise from the flow of electricity and the voltage of a line. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors. Transmission lines operate at 60 hertz (cycles per second).

5.2.1 Electric Fields

Voltage on any wire (conductor) produces an electric field in the area surrounding the wire. The electric field associated with a high voltage transmission line extends from the energized conductors to other nearby objects such as the ground, towers, vegetation, buildings, and vehicles. The electric field from a power line gets weaker as it moves away from the line. Nearby trees and building material also greatly reduce the strength of power line electric fields.

The intensity of electric fields is associated with the voltage of the line and is measured in kilovolts per meter (kV/m). Power line electric fields near ground are designated by the difference in voltage between two points (usually 1 meter). Table 4 provides the electric fields at maximum conductor voltage for the proposed 115 kV transmission line. Maximum conductor voltage is defined as the nominal voltage plus five percent.

TABLE 4
CALCULATED ELECTRIC FIELDS (KV/M) FOR PROPOSED 115 KV TRANSMISSION LINE DESIGN
(3.28 FEET ABOVE GROUND)

Type	Voltage	Distance to Proposed Centerline								
		-300'	-200'	-100'	-50'	0'	50'	100'	200'	300'
Single Circuit 115 kV Single Steel Pole Davit Arm	121 kV	0.01	0.03	0.10	0.27	0.73	0.29	0.10	0.03	0.01

The proposed 115 kV transmission line will have a maximum electric field density of approximately 0.73 kV per meter, 10 feet from centerline on the side of the structure with two phases, one meter above ground. This is significantly less than the maximum limit of eight kV per meter that has been a permit condition imposed by the Minnesota Environmental Quality Board ("EQB") in other high voltage transmission line applications. The EQB standard was designed to prevent serious hazard from shocks when touching large objects, such as tractors, parked under extra high voltage transmission lines of 500 kV or greater.

5.2.2 Magnetic Fields

Electromagnetic Fields are present around any electrical device, and can occur indoors and outdoors. EMFs are the result of the flow of electricity or current that travels along transmission lines, distribution (feeder) lines, substation transformers, house wiring, and household electrical appliances. The intensity of a magnetic field is related to the current flow through the conductors (wire).

Considerable research has been conducted throughout the past three decades to determine whether exposure to power-frequency (60 hertz) electric and magnetic fields causes biological responses and health effects. Epidemiological and toxicological studies have shown no statistically significant association or weak associations between EMF exposure and health risks.

In 1999, the National Institute of Environmental Health Sciences ("NIEHS") issued its final report on "Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields" in response to the Energy Policy Act of 1992. NIEHS concluded that the scientific evidence linking EMF exposures with health risks is weak and that this finding does not warrant aggressive regulatory concern. However, because of the weak scientific evidence that supports some association between EMF and health effects, and the common exposure to

electricity in the United States, passive regulatory action, such as providing public education on reducing exposures, is warranted.

Minnesota, California, and Wisconsin have all recently conducted literature reviews or research to examine this issue. In 2002, Minnesota formed an Interagency Working Group to evaluate the body of research and develop policy recommendations to protect the public health from any potential problems resulting from high voltage transmission line EMF effects. The Working Group consisted of staff from various state agencies. The Working Group published its findings in a White Paper on EMF Policy and Mitigation Options in September 2002. Minnesota Department of Health, 2002. The findings of the Working Group are summarized below.

> Research on the health effects of EMF has been carried out since the 1970s. Epidemiological studies have mixed results — some have shown no statistically significant association between exposure to EMF and health effects, some have shown a weak association. More recently, laboratory studies have failed to show such an association, or to establish a biological mechanism for how magnetic fields may cause cancer. A number of scientific panels convened by national and international health agencies and the United States Congress have reviewed the research carried out to date. Most researchers concluded that there is insufficient evidence to prove an association between EMF and health effects; however, many of them also concluded that there is insufficient evidence to prove that EMF exposure is safe.

The Minnesota EQB addressed the matter of EMF with respect to new transmission lines in a number of separate dockets over the past few years. *See* Docket Nos. 03-64-TR-XCEL (161 kV Lakefield Junction to Fox Lake Substation line); 03-73-TR XCEL (345 kV Split Rock Substation to Lakefield Junction Substation line); 04-84-TR-XCEL (115 kV Buffalo Ridge Substation to White Substation line) and 04-81-TR-Air Lake-Empire (115 kV line in Dakota County). The findings of the EQB and the discussion in the environmental review documents prepared on each of those projects are pertinent to this issue with respect to the proposed projects. Documents from those matters are available on the PUC webpage: www.energyfacilities.puc.state.mn.us.

In June 2005, in Docket No. 03-73-TR-XCEL for the 345 kV line connecting the Split Rock and Lakefield Junction substations, the EQB made the following finding with regard to EMF:

118. No significant impacts on human health and safety are anticipated from the Project. There is at present insufficient evidence to demonstrate a cause and effect relationship between EMF exposure and any adverse health effects. The EQB has not established limits on magnetic field exposure and there are no Federal or Minnesota health-based exposure standards for magnetic fields. There is uncertainty, however, concerning long term health impacts and the Minnesota Department of Health and the EQB all recommend a "prudent avoidance" policy in which exposure is minimized.

Table 5 provides the existing and estimated magnetic fields based on the proposed line and structure design. The expected magnetic field for the proposed structure type and phase current has been calculated at various distances from the center of the pole in milligauss.

TABLE 5
CALCULATED MAGNETIC FLUX DENSITY (MILLIGAUSS) FOR PROPOSED 115 KV TRANSMISSION LINE DESIGNS (3.28 FEET ABOVE GROUND)

Structure Type	Condition	Amps	Distance to Proposed Centerline								
			-300'	-200'	-100'	-50'	0'	50'	100'	200'	300'
Single Ciruit 115 kV Single Steel Pole Davit Arm	Normal	50	0.07	0.15	0.56	1.66	3.98	1.37	0.47	0.13	0.06
Single Ciruit 115 kV Single Steel Pole Davit Arm	Peak	803	1.05	2.36	8.93	26.68	63.87	22.04	7.61	2.08	0.95

5.2.3 Stray Voltage

"Stray voltage" is a condition that can occur on the electric service entrances to structures from distribution lines, not transmission lines. More precisely, stray voltage is a voltage that exists between the neutral wire of the service entrance and grounded objects in buildings such as barns and milking parlors. Transmission lines do not, by themselves, create stray voltage because they do not connect to businesses or residences. Transmission lines, however, can induce stray voltage on a distribution circuit that is parallel to and immediately under the transmission line. Appropriate measures will be taken to prevent stray voltage problems when the transmission lines proposed in this Application are parallel to or cross distribution lines.

Farming Operations, Vehicle Use and Metal Buildings Near Power Lines

Insulated electric fences used in livestock operations can pick up an induced charge from transmission lines. Usually, the induced charge will drain off when the charger unit is connected to the fence. When the charger is disconnected either for maintenance or when the fence is being built, shocks may result. Potential shocks can be prevented by using a couple of methods: i) one or more of the fence insulators can be shorted out to ground with

a wire when the charger is disconnected or ii) an electric filter can be instilled that grounds out charges induced from a power line while still allowing the charger to be effective.

Farm equipment, passenger vehicles and trucks may be safely used under and near power lines. The power lines will be designed to meet or exceed minimum clearance requirements over roads, driveways, cultivated fields and grazing lands specified by the NESC. Recommended clearances within the NESC are designed to accommodate a relative vehicle height of 14 feet.

There is a potential for vehicles under high voltage transmission lines to build up an electric charge. If this occurs, the vehicle can be grounded by attaching a grounding strap to the vehicle long enough to touch the earth. Such buildup is a rare event because generally vehicles are effectively grounded through tires. Modern tires provide an electrical path to ground because carbon black, a good conductor of electricity, is added when they are produced. Metal parts of farming equipment are frequently in contact with the ground when plowing or engaging in various other activities. Therefore, vehicles will not normally build up a charge unless they have unusually old tires or are parked on dry rock, plastic, or other surfaces that insulate them from the ground.

Buildings are permitted near transmission lines but are generally prohibited within the right-of-way itself because a structure under a line may interfere with safe operation of the transmission facilities. For example, a fire in a building on the right-of-way could damage a transmission line. As a result, NESC guidelines establish clear zones for transmission facilities. Metal buildings may have unique issues. For example, metal buildings near power lines of 200 kV or greater must be properly grounded. Any person with questions about a new or existing metal structure can contact Xcel Energy for further information about proper grounding requirements.

6.0 ENVIRONMENTAL INFORMATION

This section provides a description of the environmental setting, potential impacts and mitigative measures Xcel Energy has proposed, where necessary, to minimize the impacts of siting, constructing and operating the proposed Project. If the 115 kV line were removed in the future, the land could be restored to its prior condition and/or put to a different use. The majority of the measures proposed are part of the standard construction process at Xcel Energy. Unless otherwise identified in the following text, the costs of the mitigative measures proposed are considered nominal.

6.1 DESCRIPTION OF ENVIRONMENTAL SETTING

The proposed new route and accompanying substation modifications are located in Murray County and Nobles County northwest of the City of Worthington. On the northwest end of the Project is the Fenton Substation in Murray County. From the Fenton Substation heading south and then east, the Project area includes Fenton Township in Murray County and Wilmont, Larkin, and Summit Lake townships in Nobles County.

The Project area is primarily agricultural. The MnDNR has classified the Project Area as the Inner Coteau (also known as Buffalo Ridge) and Coteau Moraines subsections of the Prairie Parkland Province under the Ecological Classification System ("ECS"). The Inner Coteau and Coteau Moraines are landscapes resulting from the glaciations and are characterized by gently rolling hills, streams, rivers, and shallow prairie lakes and wetlands. The topography of the area is relatively level to sloping land ranging in elevation between 1,600 to 1,810 feet above mean sea level.

Presettlement vegetation consisted primarily of tallgrass prairie, with wet prairie and wooded areas restricted to stream margins and ravines along rivers. The primary present-day use of the land is agriculture, with very few remnants of presettlement vegetation left. Many of the small lakes, streams, and wetlands in the region have been drained for agricultural purposes (MnDNR, 2007). The major crops in the area are corn and soybeans. The communities near the proposed route include Reading, Chandler, and Wilmont.

6.2 HUMAN SETTLEMENT

6.2.1 Public Health and Safety

The Project will be designed in compliance with local, state, NESC, and Xcel Energy standards regarding clearance to ground, clearance to utilities, clearance to buildings, strength of materials, and right-of-way widths. Xcel Energy construction crews and/or contract crews will comply with local, state, NESC, and Xcel Energy standards regarding

installation of facilities and standard construction practices. Established Xcel Energy and industry safety procedures will be followed during and after installation of the transmission line. This will include clear signage during all construction activities.

The proposed transmission line will be equipped with protective devices to safeguard the public from the transmission line if an accident occurs, such as a structure or conductor falling to the ground. The protective devices are breakers and relays located where the line connects to the substation. The protective equipment will de-energize the line should such an event occur. Proper signage will be posted warning the public of the risk of coming into contact with the energized equipment.

Mitigative Measures

There are no further mitigative measures necessary to address human health and safety.

6.2.2 Commercial, Industrial, Residential Land Use

According to the Land Use Plan Map for Nobles County, the transmission line crosses mostly grassland and cultivated land with a mixture of urban settings near Wilmont and Lismore, and farmsteads and rural residential areas. The typical land uses within the Project Area are primarily agricultural farming and some residences located near Lismore and Wilmont. There are no homes located within 50 feet of the transmission line. There are no homes located between 50 and 100 feet, there is one home located between 100 and 200 feet, and there are ten homes located between 200 and 400 feet of the transmission line. Overall temporary impacts for the proposed route includes 66.4 acres (2,891,120 ft^2) and 0.3 acre (12,300 ft^2) permanent impacts.

The area is also experiencing growth in the wind generation industry. The Fenton Wind Power Plant is a large (up to 205.5 MW) wind farm operated by Fenton Power Partners, LLC. The wind farm site is located in Murray and Nobles counties, Minnesota, near the town of Chandler, and will have up to 137 wind turbines in the project. The Development site is within three townships in Murray County — Chanarambie (T106N, R43W), Moulton (T105, R43W), and Fenton (T105N, R42W) — and two townships in Nobles County — Leota (T104N, R43W), and Wilmont (T104N, R42W). The wind turbines for the wind farm are concentrated near the Fenton Substation. The closest turbines to the proposed route are located in the northwest corner of Wilmont Township (T 104 N, R 42 W, Sections 6, 7, 8 and 17) and the southwest corner of Fenton Township (T 105 N, R 42 W, Sections 19 and 30). Additional wind farm development is northwest of the Fenton Substation in Cameron Township, western Murray County (T 107 N, R 63 W) and in Burke Township of Eastern Pipestone County (T 106 N, R 62 W).

Mitigative Measures

Impacts to agriculture will be minimized by placing structures along property lines where possible.

Impacts to residences will be mitigated by maximizing the distance between transmission line structures and homes. No impacts to wind generation development are anticipated and therefore no mitigative measures are necessary.

6.2.3 Displacement

No displacement of residential homes or businesses is anticipated to occur as a result of this Project.

Mitigative Measures

As no displacement is anticipated, mitigative measures are not required.

6.2.4 Noise

Transmission conductors produce noise under certain conditions. The level of noise depends on conductor conditions, voltage level, and weather conditions. Generally, activity-related noise levels during the operation and maintenance of substations and transmission lines are minimal.

Noise emission from a transmission line occurs during certain weather conditions. In foggy, damp, or rainy weather, power lines can create a crackling sound due to the small amount of electricity ionizing the moist air near the wires. During heavy rain the background noise level of the rain is usually greater than the noise from the transmission line. As a result, people do not normally hear noise from a transmission line during heavy rain. During light rain, dense fog, snow, and other times when there is moisture in the air, transmission lines can produce noise. Noise levels produced by a 115 kV transmission line are generally less than outdoor background levels and are therefore not usually audible. At substations, a humming noise can be created primarily by transformers. The nearest occupied home to either the Nobles County Substation or the Fenton Substation is more than 2,000 feet away, and it would be very unlikely that substation noise would be audible near these homes.

The substation modifications will be designed and constructed to comply with state noise standards established by the Minnesota Pollution Control Agency ("MPCA"). Because human hearing is not equally sensitive to all frequencies of sound, the most noticeable frequencies of sound are given more "weight" in most measurement schemes. The A-weighted scale corresponds to the sensitivity range for human hearing. Noise levels capable of being heard by humans are measured in dBA, which is the A-weighted sound level

recorded in units of decibels. A noise level change of 3 dBA is barely perceptible to human hearing. A 5 dBA change in noise level, however, is clearly noticeable. A 10 dBA change in noise level is perceived as a doubling of noise loudness, while a 20 dBA change is considered a dramatic change in loudness. Table 6 below shows noise levels associated with common, everyday sources.

TABLE 6
COMMON NOISE SOURCES AND LEVELS

Sound Pressure Level (dBA)	Noise Source
140	Jet Engine (at 25 meters)
130	Jet Aircraft (at 100 meters)
120	Rock and Roll Concert
110	Pneumatic Chipper
100	Jointer/Planer
90	Chainsaw
80	Heavy Truck Traffic
70	Business Office
60	Conversational Speech
50	Library
40	Bedroom
30	Secluded Woods
20	Whisper

Source: A Guide to Noise Control in Minnesota, MPCA (revised, 1999), http://www.pca.state.mn.us/programs/pubs/noise.pdf.

In Minnesota, statistical sound levels (L Level Descriptors) are used to evaluate noise levels and identify noise impacts. The L_5 is defined as the noise level exceeded 5% of the time, or for three minutes in an hour. The L_{50} is the noise level exceeded 50% of the time, or for 30 minutes in an hour.

Land areas, such as picnic areas, churches, or commercial spaces, are assigned to an activity category based on the type of activities or use occurring in the area. Activity categories are then categorized based on their sensitivity to traffic noise. The Noise Area Classification ("NAC") is listed in the MPCA noise regulations to distinguish the categories.

Table 7 identifies the established daytime and nighttime noise standards by NAC. The standards are expressed as a range of permissible dBA within a one hour period; L_{50} is the dBA that may be exceeded 50 percent of the time within an hour, while L_{10} is the dBA that may be exceeded 10 percent of the time within the hour.

TABLE 7
NOISE STANDARDS BY NOISE AREA CLASSIFICATION

Noise Area Classification	Daytime		Nighttime	
	L_{50}	L_{10}	L_{50}	L_{10}
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

There is one residence located within 200 feet of the proposed transmission line route and there are 10 residences between 200 and 400 feet of the proposed transmission line route. All the residences fall within NAC 1. The noise generated from the transmission line is not expected to exceed approximately 30 dB, which is below typical background noise levels and therefore would not be audible at any receptor location. In addition, noise levels would be well below the noise standards established for NAC 1, as shown in Table 7 above.

Corona from transmission line conductors can generate electromagnetic "noise" at the same frequencies that radio and television signals are transmitted. This noise can cause interference with the reception of these signals depending on the frequency and strength of the radio and television signal. Tightening loose hardware on the transmission line usually resolves the problem.

If radio interference from transmission line corona does occur, satisfactory reception from AM radio stations presently providing good reception can be obtained by appropriate modification of (or addition to) the receiving antenna system. Moreover, AM radio frequency interference typically occurs immediately under a transmission line and dissipates rapidly within the right-of-way to either side.

FM radio receivers usually do not pick up interference from transmission lines because:

- Corona-generated radio frequency noise currents decrease in magnitude with increasing frequency and are quite small in the FM broadcast band (88-108 Megahertz).
- Also, the excellent interference rejection properties inherent in FM radio systems make them virtually immune to amplitude type disturbances.

A two-way mobile radio located immediately adjacent to and behind a large metallic structure (such as a steel tower) may experience interference because of signal-blocking effects. Movement of either mobile unit so that the metallic structure is not immediately

between the two units should restore communications. This would generally require a movement of less than 50 feet by the mobile unit adjacent to a metallic tower.

Television interference is rare but may occur when a large transmission structure is aligned between the receiver and a weak distant signal, creating a shadow effect. Loose and/or damaged hardware may also cause television interference. If television or radio interference is caused by or from the operation of the proposed facilities in those areas where good reception is presently obtained, Xcel Energy will inspect and repair any loose or damaged hardware in the transmission line, or take other necessary action to restore reception to the present level, including the appropriate modification of receiving antenna systems if deemed necessary.

Mitigative Measures

No mitigative measures are necessary since there will be nominal corona or noise impacts from the Project. If radio or television interference occurs because of the transmission line, Xcel Energy will work with the affected landowner to mitigate the problems so that reception is restored.

6.2.5 Aesthetics

The proposed structures for the 115 kV line from the existing Fenton Substation to the existing Nobles County Substation will be a single pole construction similar to the other 115 kV transmission line in the area. The structures will be 90 feet in height and will have a span of 500 feet between the structures. The right-of-way required for these types of structures is approximately 75 feet wide. The new transmission line likely will be visible to residents of Lismore and Wilmont. The transmission line structures will be in contrast to the primarily agricultural land along the proposed route. Additionally, several wind turbine generators have recently been installed in the area, which are highly visible, and often include aboveground transmission lines as part of the facility. There are also large rolling hills to the north of the proposed route that offer variation in the viewshed.

The finish of the proposed poles can be galvanized or weathering steel. The existing lines in this area are constructed of galvanized poles. Due to higher costs of galvanized poles compared to weathering steel (approximately 10% higher) Xcel Energy requests the flexibility to use weathering steel poles to construct the line. A final decision on if and where to use weathering steel will be made based on cost and aesthetic considerations.

Mitigative Measures

Although the line will be a contrast to some surrounding land uses, Xcel Energy has identified the route that uses existing corridors and avoids homes to the greatest extent

practicable. Xcel Energy will work with landowners to identify concerns related to the transmission line and/or substation aesthetics.

6.2.6 Socioeconomic

Population and economic characteristics based on the 2000 U.S. Census are presented in Table 8.

TABLE 8
POPULATION AND ECONOMIC CHARACTERISTICS

Location	Population	Minority Population (Percent)	Caucasian Population (Percent)	Per Capita Income	Percentage of Individuals Below Poverty Level
State of Minnesota	4,919,479	11.8	88.2	$23,198	7.9
Murray County	9,165	3.13	98.3	$17,936	9.9
Fenton Township	209	1.9	98.6	$16,951	2.9
Nobles County	20,832	24.6	86.4	$16,987	13.7
Wilmont Township	228	2.6	97.4	$12,613	15.4
Larkin Township	218	0	100	$13,805	19.7
Summit Lake Township	368	5.7	96.2	$13,955	8.2

Source: 2000 U.S. Census: General Demographic Characteristics

According to 2000 Census data, Nobles County is 86 percent Caucasian and Murray County is 98 percent Caucasian. Of the townships along the proposed route, the population ranges from 96 to 100 percent Caucasian. Minority groups in the area constitute a very small percentage of the total population.

Per capita incomes within the townships along the route are lower when compared to those found in Nobles and Murray counties. The route does not contain disproportionately high minority populations or low-income populations.

Approximately 8 to 12 workers will be required by Xcel Energy for transmission line construction and 6 to 10 workers will be needed, on average, for the substation construction. The transmission crews are expected to spend approximately 6 months constructing the project.

There will be short-term impacts to community services as a result of construction activity and an influx of contractor employees during construction of the various projects. Utility

personnel or contractors will be used for all construction activities. The communities near the various projects should experience short-term positive economic impacts through the use of the hotels, restaurants and other services by the various workers.

It is not expected that additional permanent jobs will be created by any of these actions. The construction activities will provide a seasonal influx of additional dollars into the communities during the construction phase, and materials such as concrete may be purchased from local vendors where feasible. Long-term beneficial impacts from the proposed transmission lines and substation additions include increased local tax base resulting from the incremental increase in revenues from utility property taxes.

Socioeconomic impacts resulting from the Project will be primarily positive with an influx of wages and expenditures made at local businesses during the Project, increased tax revenue and increased generation outlet capability which will provide long-term economic opportunities for further renewable energy generation development

Mitigative Measures

No mitigative measures are necessary.

6.2.7 Cultural Values

Cultural values include those perceived community beliefs or attitudes in a given area, which provide a framework for that community's unity. The communities in the vicinity of the Project, including Wilmont, Lismore, and Reading, have cultural values tied to agriculture and light industry. Values within the region include individualism and loyalty to local businesses and service providers. The communities in the vicinity of the Project also value their heritage and pioneer roots as settlers of the rivers and prairies of the vicinity.

Agriculture and farm-related business remain central to the regional economy. The area has a diversified agricultural mix of livestock and crops, including corn, soybeans, alfalfa and dairy and beef cattle. Manufacturing opportunities are centered on food, agriculture, and construction. Attractions in the area include Buffalo Ridge, located just to the northwest of Fenton Township, and several State Wildlife Management Areas ("WMA"), including Chandler, Blue Bird, and Groth, located northeast of the proposed route. Wildlife Management Areas are managed for wildlife production and are open to public hunting and wildlife watching. Construction of the proposed transmission line is not expected to conflict with the cultural values along the route.

Mitigative Measures

No impacts are anticipated, therefore no mitigation is proposed.

6.2.8 Recreation

There are no formal recreational areas near the proposed route. There are several WMAs northeast of the proposed route the closest is approximately two miles northeast of Hesselroth Ave and 130th Street. The Project will not directly impact these resources and it is not anticipated that the transmission line will be visible from these resources.

Mitigative Measures

No mitigation is necessary.

6.2.9 Public Services

There is planned and potential highway expansion within the area.

- There is a planned reconstruction of Nobles County Highway 13 (Jones Avenue) projected in 2013-2014, which runs north and south between County State Aid Highway ("CSAH") 25 on the north end south to Interstate 90.
- There will also be reconstruction along 140th Street from State Highway 91 east to Nobles County Highway 15 and then north along Nobles County Highway 15 to 130th Street and then east to Nobles County Highway 13 (Hesselroth Avenue).

Within the city limits of Wilmont, the city provides water and sewer. Outside the city limits, along the route, there are Lincoln Pipestone Rural Water facilities and septic systems. According to landowners in the area rural water facilities are located along 180th Street and may be further set back from the road than typical systems. The City of Wilmont has emergency fire service.

Mitigative Measures

It is not anticipated the Project will affect any public services. No impacts to the identified road expansions are anticipated and therefore no mitigative measures are necessary. Xcel Energy will locate the proposed transmission line in coordination with Lincoln Pipestone Rural Water and landowners. No additional mitigative measures are proposed.

6.3 LAND-BASED ECONOMICS

6.3.1 Agriculture

Murray County has strong economic ties to agriculture. It ranks among the top 20 counties in the state in oats, soybeans, corn, and cattle. According to the 2007 Minnesota Agricultural Statistics Bulleting from the Minnesota Department of Agriculture, approximately $145

million was generated in both crop and livestock sales in 2005. The 2005 market value of production was $174.5 million in Murray County.

Nobles County is a large producer of livestock and ranks eleventh in the state. According to the 2007 Minnesota Agricultural Statistics Bulletin from the Minnesota Department of Agriculture, approximately $128.7 million in livestock sales occurred in 2005. The 2005 Minnesota Agricultural Statistics reported that Nobles County ranked seventh in soybean production in the state. Approximately 177,700 acres of soybeans were harvested during the 2005 season. The 2005 market value of production was $235.7 million in Nobles County. The route is planted in corn and soybeans.

National Gap Analysis Program ("GAP") data was used for the potential impacts to agricultural land. Approximately 0.3 acre (11,962 ft^2) of agricultural land will be permanently impacted by the installation of the transmission line structures. The 0.3 acre impact area is the acreage permanently impacted from the concrete foundations of the steel structures. This number does not include the temporary impacts to agriculture due to construction. No additional land will be required for substation work.

Construction activities associated with the Project will also temporarily impact an area estimated at 65.8 acres (2,867,901 ft^2). Construction of the Project will require repeated access to structure locations to install foundations, structures and conductors. Equipment used in this process includes drill rigs, concrete trucks, backhoes, cranes, boom trucks and assorted small vehicles. Operation of these vehicles on farm fields can cause rutting and compaction, particularly during springtime and otherwise wet conditions.

Mitigative Measures

To minimize loss of farmland and to ensure reasonable access to the land near the poles, Xcel Energy intends to place the poles approximately five feet from the roadway right-of-way Xcel Energy will work with landowners to construct the transmission line before crops are planted or following harvest.

Where possible, spring time construction will be avoided. However, if construction during spring time is necessary, disturbance to farm soil from access to each structure location will be minimized by using the shortest access route. This may require construction of temporary driveways between the roadway and the structure, but would limit traffic on fields between structures. Construction mats may also be used to minimize impacts on the access paths and in construction areas.

The Company will compensate landowners for the easements acquired and for any crop damage and soil compaction that occurs as a result of the Project.

6.3.2 Forestry

There are no forested areas where species are harvested along the route. The proposed route occurs in what was historically the prairie grassland region of Minnesota. The primary tree cover in the area is associated with waterways and homesteads. No economically important forestry resources are located along the route.

Mitigative Measures

No mitigative measures will be required.

6.3.3 Tourism

The Wilmont, Lismore and Reading areas of Nobles County are primarily small farming communities. Amenities in the area cater to local residents. Visitors are likely to visit the city of Worthington, approximately 15 miles from the Wilmont and Reading communities.

Murray County has a rich history in agriculture and pioneer living. The County has highlighted the wind farms near Chandler as a tourist attraction. The project will support additional wind generation development in the area.

Mitigative Measures

No mitigative measures are anticipated with regard to tourism.

6.3.4 Mining

Surficial deposits from ground and end moraines dominate the area. The moraines consist of silty, calcareous tills with varying concentrations of sand and gravel lenses occurring at various depths. The thickness of the glacial deposits generally decreases from east to west across the route.

The primary bedrock encountered is Sioux Quartzite. Undifferentiated crystalline rocks occur midway along the project corridor. Cretaceous rocks consisting of siltstone, shale, and sandstones, discontinuously overlay the Precambrian bedrock.

The undifferentiated crystalline rocks are composed of intermediate and mafic rocks with some granitic rocks. The Sioux Quartzite is a red and purple to light gray quartzite that is interbedded with red mudstone.

Mineral resources in the region consist of sand and gravel lenses found in the moraine deposits. According to MnDOT county pit maps for Nobles and Murray counties, there are no inactive or active gravel pits located along the proposed route. The proposed transmission line will not impact active mining operations.

Mitigative Measures

No mitigative measures are necessary.

6.4 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

In March 2007, a review of records at the Minnesota State Historic Preservation Office ("SHPO") identified four historic architectural properties located within one mile of the proposed route. These include Lismore Firehall, a commercial building, a church, and a grain elevator. None of these properties is listed on the NRHP.

Mitigative Measures

Although there are no identified resources along the proposed route, unreported properties could exist in limited areas. Xcel Energy will survey two areas identified as having high potential for buried archaeological resources near the crossings of the Kanaranzi and Champepadan creeks. The proposed route will avoid impacts to identified archaeological and historic resources to the extent possible. Should an impact be identified, Xcel Energy will consult with SHPO on whether the resource is eligible for listing in the NRHP. While avoidance would be a preferred action, mitigation for Project-related impacts on NRHP-eligible archaeological and historic resources may include resource and/or additional documentation through data recovery.

6.5 NATURAL ENVIRONMENT

6.5.1 Air Quality

Currently, both state and federal governments have regulations regarding permissible concentrations of ozone and oxides of nitrogen. The national standard is 0.08 ppm during an eight-hour averaging period. The state standard is 0.08 ppm based upon the fourth-highest eight-hour daily maximum average in one year.

The only potential air emissions from a 115 kV transmission line result from corona and are limited. Corona consists of the breakdown or ionization of air in a few centimeters or less immediately surrounding conductors, and can produce ozone and oxides of nitrogen in the air surrounding the conductor. For a 115 kV transmission line, the conductor gradient surface is usually below the air breakdown level. Typically, some imperfection such as a scratch on the conductor or a water droplet is necessary to cause corona. Ozone is not only

produced by corona, but also forms naturally in the lower atmosphere from lightning discharges and from reactions between solar ultraviolet radiation and air pollutants such as hydrocarbons from auto emissions. The natural production rate of ozone is directly proportional to temperature and sunlight and inversely proportional to humidity. Thus, humidity (or moisture), the same factor that increases corona discharges from transmission lines, inhibits the production of ozone. Ozone is a very reactive form of oxygen and combines readily with other elements and compounds in the atmosphere. Because of its reactivity, it is relatively short-lived. The area near the route presently meets all federal air quality standards.

During construction of the proposed transmission line and substation there will be limited emissions from vehicles and other construction equipment and fugitive dust from right-of-way clearing. Temporary air quality impacts caused by construction-related emissions are expected to occur during this phase of activity.

The magnitude of the construction emissions is influenced heavily by weather conditions and the specific construction activity occurring. Exhaust emissions, primarily from diesel equipment, will vary according to the phase of construction, but will be minimal and temporary. Adverse impacts to the surrounding environment will be minimal because of the short and intermittent nature of the emission and dust-producing construction phases.

Mitigative Measures

Xcel Energy anticipates nominal impacts to air quality. Therefore no mitigation is proposed.

6.5.2 Water Quality

There are several creeks located to the west but not directly in the transmission line area. Kanaranzi Creek is a habitat for Topeka shiners and will be crossed by the transmission line located in the southwest corner of the project. This creek is designated Critical Habitat by the USFWS. Wetlands and creeks are critical habitat for the Topeka shiner and the quality of the water in the wetlands and creeks must not be disturbed. The Kanaranzi Creek must be spanned to maintain water quality and to minimize sediment entering the water.

The surface water resources that could be affected by the construction of the Project include Elk Creek located in Elk Township and Jack Creek, North Branch in Wilmont Township. There are no other listed impaired waters, lakes, or wetlands along the route. There are no trout streams listed by the MnDNR along the route. There are various freshwater emergent wetlands and a few freshwater ponds scattered throughout the area. The route is not within a mapped 100-year floodplain (FEMA, 1981).

No direct impacts to the surface water resources are anticipated. No Public Water Works Permit is required from the MnDNR under Minnesota Statute 103G.2455, Subd. 1. This was confirmed by Mr. Tom Kresko in correspondence dated October 2, 2007. If waters of the United States, as defined by the U.S. Army Corps of Engineers or wetlands defined under the Minnesota Wetland Conservation Act are impacted, Xcel Energy will obtain the pertinent permits. At this time, no impacts are anticipated, therefore no permit is required.

However, Minnesota Statutes Section 84.415 requires Xcel Energy to obtain a license from the MnDNR for the passage of any utility over, under, or across any state land or public waters. Because the line will span Champepadan and Kanaranzi creeks, both considered Public Waters, a MnDNR license will be required.

Mitigative Measures

Xcel Energy will follow standard erosion control measures identified in the Minnesota Pollution Control Agency's Stormwater Best Management Practices Manual, such as using silt fencing to minimize impacts to adjacent water resources. During construction, the applicant will control construction operations to prevent materials from falling into the water. If material does enter the stream, the material will promptly be removed and disposed of properly. During construction there is the possibility of sediment reaching surface waters as the ground is disturbed by excavation, grading, and construction traffic. Once the Project is complete it will have no impact on surface water quality.

Additionally, Xcel Energy will follow the recommendations outlined by the USFWS in their publication "Construction Projects Affecting Waters Inhabited by Topeka Shiners (*Notropis topeka*) in Minnesota" for construction near Kanaranzi Creek.

6.5.3 Flora

Much of the land is either cultivated or residential. Areas near streams and rivers, and various WMAs in the area are likely to contain native vegetation. The majority of the rest of the Project is agricultural land. Row crops such as corn and soybean dominate the area. For a discussion on impacts to agriculture, please see Section 6.3.1.

A majority of the vegetation along the route is crops planted on agricultural land and field margins populated primarily by common weeds such as brome grass (*Bromus inermis*), ragweeds (*Ambrosia* spp.), thistles (*Cirsium* spp.), stinging nettles (*Urtica diocia*) and others.

This land was once a part of the prairie grassland region of Minnesota, and areas in the project area may contain prairie remnants, especially located in drainages, pastures, and areas

with elevated topography. None of these areas have been identified along the proposed route.

Impacts to trees may occur along the route on private property adjacent to the roads. The area of trees that will be impacted by the proposed Project due to the routing of the transmission line is expected to be less than one acre.

Mitigative Measures

To minimize impacts to trees in the Project corridor, Xcel Energy will only remove trees located in the right-of-way for the transmission line or that would impact the safe operation of the facility.

6.5.4 Fauna

Areas along the route that may provide habitat for greater concentrations of organisms are the watercourses described in Section 6.5.2. There are several WMAs located a minimum of two miles north and two Waterfowl Production Areas ("WPA") located about four miles northeast of the proposed route that provide habitat for various fauna species. The majority of the WMAs are located north and east of the proposed route. The WMAs are managed for wildlife production and are open to hunting and wildlife viewing. Upland game birds and small mammals are common in these areas. The closest record of a natural community to the proposed route is approximately 2 miles east, near the Fenton Substation (Gallinago WMA).

The two WPAs northeast of the proposed route include Bloom WPA and Iona WPA. Bloom WPA is located in Bloom Township, Section 20, in Nobles County and Iona WPA is located in Fenton Township, Section 13, in Murray County. WPAs are federally managed wetlands and surrounding uplands open to hunting and wildlife viewing.

Fallow farm fields, fencerows, and woodlots in cultivated areas also provide cover for organisms within the proposed route. A list of organisms known to occur in habitats of this region of Minnesota is included in Appendix C.

During construction, there will be minimal displacement of wildlife, and construction of the Project would result in only small amounts of habitat impacted. Wildlife that inhabit trees that will be removed for the Project and organisms that inhabit agricultural areas will likely be displaced. Comparable habitat is adjacent to the route for both habitat types, and it is likely that these organisms would only be displaced a short distance.

Raptors, waterfowl and other bird species may be affected by the construction and placement of the transmission lines. Avian collisions are a possibility after the completion of

the transmission line in areas where there are agricultural fields that serve as feeding areas, wetlands, and open water. Electrocution is commonly a concern with electrical facilities. The electrocution of large birds, such as raptors, is more commonly associated with distribution lines. Electrocution occurs when birds with large wingspans come in contact with two conductors or a conductor and a grounding device. Xcel Energy transmission line design standards provide adequate spacing to eliminate the risk of raptor electrocution, so there are no concerns about avian electrocution as a result of the proposed Project.

Mitigative Measures

Displacement of fauna is anticipated to be temporary in nature. No long term population-level effects are anticipated; therefore, no mitigation is proposed.

Xcel Energy has been working with various state and federal agencies over the past 20 years to address avian issues as quickly and efficiently as possible. In 2002, the Xcel Energy Operating Companies, including the Company, entered into a voluntary memorandum of understanding ("MOU") to work together to address avian issues through its territory. This includes the development of Avian Protection Plans ("APP") for each state the Xcel Energy serves. Work is currently under way on the Minnesota APP. Standard reporting methods were also developed. As part of the APP, the Project would be examined for collision risks, and if a potential risk was identified, mitigation procedures would be recommended.

In cooperation with the MnDNR and the USFWS, Xcel Energy will identify areas where installation of swan flight diverters on the shield wire may be warranted. In most cases, the shield wire of an overhead transmission line is the most difficult part of the structure for the bird to see. Xcel Energy has had success in reducing collisions on transmission lines by marking the shield wires with swan flight diverters ("SFD"). SFDs are pre-formed spiral shaped devices made of polyvinyl chloride that are wrapped around the shield wire.

6.6 RARE AND UNIQUE NATURAL RESOURCES

The MnDNR identified one known occurrence of rare and unique resources that would be affected by the proposed Project, the Topeka shiner (*Notopis topeka*). There is only one species identified by the MnDNR Natural Heritage Database located along the proposed route. The fish species is located in Kanaranzi Creek along the proposed route (NHNRP Contact #: ERDB 200706929). The Topeka shiner has a Federal Status of endangered and is listed by Minnesota as a special concern species (ranked S3). A rank is assigned to the natural community type, which reflects the known extent and condition of that community in Minnesota. Ranks range from S1 (in general need of conservation action in the state) to S5 (secure under present conditions) and SU (undetermined, more information is needed (MnDNR, 2007)).

Along the proposed route there is federally-designated critical habitat for the Topeka shiner in Kanaranzi Creek, a tributary of the Rock River. This stream is a low-gradient, slow moving stream and is naturally winding with sand, gravel or rubble bottoms covered by a deep layer of silt. Topeka shiners prefer pool-like areas outside the main channels. They frequently inhabit headwaters of small prairie streams and stream reaches that are periodically dry. The Topeka shiner was listed as an endangered species in 1998 and it is illegal for anyone to "take" (i.e., kill, harm, harass, capture, etc.) Topeka shiners without special permission (under Section 7 of the Endangered Species Act). This affects persons whose actions and projects may unintentionally or *incidentally* take Topeka shiners, even if that is not the purpose of their activity (USFWS, 2003).

Mitigative Measures

To mitigate potential impacts to the Topeka shiner, the structures will be placed so that the conductor spans the Kanaranzi Creek and sediment will be controlled so that it does not reach the habitat. In particular, Xcel Energy will follow the recommendations outlined by the USFWS in their publication "Construction Projects Affecting Waters Inhabited by Topeka Shiners (Notropis topeka) in Minnesota" for construction near Kanaranzi Creek.

7.0 AGENCY INVOLVEMENT, PUBLIC PARTICIPATION AND REQUIRED PERMITS AND APPROVALS

7.1 AGENCY CONTACTS

7.1.1 Minnesota Department of Natural Resources

The MnDNR Natural Heritage and Non-game Research Program was contacted on March 6, 2007, to review the Project Area for State threatened and endangered species and rare natural features. In the MnDNR's response dated April 13, 2007, Lisa Joyal, on behalf of the MnDNR, concurred that based on review, there are no known occurrences of rare features other than the Topeka shiner streams within the Project Area. Please refer to the Mitigative Measures in Section 6.6 above for the summary of the requirements from the MnDNR. See Appendix D.1 for the response from the MnDNR.

7.1.2 Regional Environmental Assessment Ecologist-MnDNR

The area MnDNR Regional Environmental Assessment Ecologist was contacted on March 6, 2007, to identify any additional parcels that should be avoided based on current MnDNR management activities in the Project Area. In the MnDNR's response dated April 13, 2007, Todd Kolander, on behalf of the MnDNR, stated the project will cross or has potential to impact waters, streams, or wetlands in the Project Area. Under Minnesota Statutes Section 103G.2455, Subdivision 1, a MnDNR Public Waters Work Permit must be obtained if the Project will result in impacts below the ordinary high water level ("OHWL") in public waters and public waters wetlands. Tom Kresko, MnDNR South Region 4 Area Hydrologist was contacted on September 28, 2007, regarding the need for a Public Waters Permit. Mr. Kresko stated that based on this Project and there being no temporary crossings, it would unlikely need a permit. He reviewed the route and notified Xcel Energy in an e-mail verifying there were no concerns and permit was not needed. See Appendix D.9 for a record of the telephone conversation and e-mail correspondence with Mr. Kresko

Mr. Kolander also stated that under Minnesota Statutes Section 84.415, Xcel Energy is required to obtain a license from the MnDNR for the passage of any utility over, under, or across any state land or public waters. The transmission line will cross Kanaranzi Creek, which is a state-listed public water. Xcel Energy will be required to obtain a license to cross public waters from the MnDNR Lands and Minerals Department. Champepadan Creek, a state listed public water, is located west of State Highway 91 and the proposed route will follow the east side of State Highway 91 and will not cross or impact the Creek and therefore does not require a license to cross the public water. See Appendix D.2 for Todd Kolander, MnDNR's response.

7.1.3 Minnesota SHPO

On March 6, 2007, SHPO was asked to provide comments regarding potential effects to known or suspected archaeological sites or historic standing structures in the Project Area. On April 4, 2007, Xcel Energy received comments related to the proposal (Appendix D.3). SHPO indicated that they believed there to be a good probability that unreported archaeological properties may be present in the Project Area. A survey was recommended. Xcel Energy will survey two areas identified as having high potential for buried archaeological resources near the crossings of the Kanaranzi and Champepedan creeks.

7.1.4 Murray County, Office of Planning

On March 6, 2007, the Murray County Office of Planning was contacted for comments on the Project. On March 9, 2007, Xcel Energy received comments related to the proposal (Appendix D.5) via a phone conversation with Jean Christoffels, Zoning Administrator. Ms. Christoffels stated she had no route preference and no zoning issues, and suggested staying in the roadway right-of-way as much as possible. She did request that Xcel Energy consider the following:

- Potential property owner conflicts, similar to what was experienced on the other Nobles County – Fenton 115 kV line.
- Obtaining comments from Randy Groves, Murray County Highway Department Engineer, comments on highway expansion.

7.1.5 Nobles County, Office of Planning

On March 6, 2007, HDR contacted Nobles County Office of Planning for comments on the Project. On July 3, 2007, Xcel Energy received comments from Wayne Smith, Director of Environmental Affairs, Nobles County. Mr. Smith stated there were no concerns and he was pleased with the communication on previous projects in the area. Please see attached telephone record of the conversation (Appendix D.4). Xcel Energy will continue working with the Nobles County Office of Planning about the Project.

7.1.6 Minnesota Department of Transportation

On Thursday, September 20, 2007, the Minnesota Department of Transportation was contacted by telephone regarding the Project. MnDOT Transportation District 7 Roadway Regulations Supervisor James Fox stated MnDOT had not received the initial agency letter sent in March 2007, but advised there are no concerns or comments at this stage. MnDOT previously informed Xcel Energy at a meeting on August 22, 2007, that Highway 91 could impact the amount of private right-of-way required for the Project because the road right-of-way varies between 45 feet to 90 feet along the highway and not necessarily the same on both sides of the road. MnDOT passed on the information about the Project to the District Engineer and they will be involved when a route is selected. See Appendix D.7 for a

telephone record of the conversation held on Thursday, September 20, 2007, and Appendix D.8 for the Meeting Record of the meeting held on Wednesday, August 22, 2007.

7.1.7 United States Fish and Wildlife Service

On August 10, 2007, Laurie Fairchild, USFWS, was contacted regarding the Topeka shiner stream, Kanaranzi Creek, in the Project Area. Ms. Fairchild explained how the Topeka shiner habitat must be spanned and there must be no sediment in the stream. Ms. Fairchild requested further communication when a route was proposed. Additionally, she suggested contacting Mark Vaniman, USFWS regarding wetland easements within the Project.

Mr. Vaniman was contacted on August 13, 2007, and confirmed there were no federal wetland easements within the Project Area. On September 14, 2007, Ms. Fairchild was contacted again regarding the proposed route for the Project and whether a permit would be required for the Topeka shiner. It was determined Kanaranzi Creek would be spanned and therefore no permit was required. See Appendix D.6 for communication with the USFWS.

7.2 IDENTIFICATION OF LAND OWNERS

A list of the 143 landowners adjacent to the proposed route is in Appendix E.1. This list does not include landowners along the route alternatives.

7.3 PUBLIC PARTICIPATION

Xcel Energy held two public information meetings prior to developing this Application. These meetings were held to inform landowners and public officials of the proposed Project and solicit input to be used in route selection.

Comments received from the first meeting held on May 22, 2007, were to avoid homes and follow along the roads and existing corridors. The comments received from the second meeting held on September 12, 2007, included minimizing impacts to homes by avoiding the side of the roads where there were more homes. Comments received at the public meetings are included as Appendix E.2. There was a concern about the line passing over the cemetery for St. Anthony's Catholic Church. Xcel Energy proposes to avoid the cemetery by either spanning it completely or by using the west side of Highway 91 at this location. In addition, landowners were concerned about minimizing impacts to groves of trees on their property if the line were to go along their properties. Xcel Energy's representatives responded to these questions by indicating that the company will maximize the distance between the transmission line and residences to the extent practicable.

Xcel Energy has worked with the public throughout the process. A summary of landowner comments received and the comment forms submitted throughout the route selection process is included in Appendix E.2.

7.4 REQUIRED PERMITS AND APPROVALS

7.4.1 State of Minnesota Permits

No person may construct a high-voltage transmission line without a route permit from the PUC. Minnesota Statutes Section 216E.03, subd. 2. The proposed Project will also potentially require additional State permits identified below in Table TAble 9.

TABLE 9
POTENTIAL REQUIRED PERMITS

Permit	Jurisdiction
Route Permit	PUC
License to Cross Public Waters	MnDNR Division of Lands and Minerals
Application for utility permit on County Highway Right-of-Way	MnDOT

License to Cross Public Waters

The MnDNR Division of Lands and Minerals regulates utility crossings on, over or under any state land or public water identified on the Public Waters and Wetlands Maps. A license to cross Public Waters is required under Minnesota Statutes §84.415 and Minnesota Rules, Chapter 6135. Xcel Energy works closely with the MnDNR on these permits and will file for them once the line design is complete.

Minnesota Department of Transportation

MnDOT requires the Application For Utility Permit on County Highways Right-Of-Way form for the vast majority of utility placements and relocations. Utility owners use this form to request permission to place, construct, and reconstruct utilities within trunk highway right of way, whether longitudinal, oblique, or perpendicular to the centerline of the highway.

7.4.2 Local Permits

Once the Commission issues a route permit, zoning, building and land use regulations and rules are preempted per Minn. Stat. § 216E.10, subd. 1.

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9.0 DEFINITIONS

Avian	Of or relating to birds.
Breaker	Device for opening a circuit
Bus	An electrical conductor that serves as a common connection for two or more electrical circuits; may be in the form of rigid bars or stranded conductors or cables.
Conductor	A material or object that permits an electric current to flow easily.
Corona	The breakdown or ionization of air in a few centimeters or less immediately surrounding conductors.
Disconnects	A power switch that can be shut off and then locked in the "off" position.
Excavation	A cavity formed by cutting, digging, or scooping.
Fauna	The collective animals of any place or time that live in mutual association.
Flora	The collective plants of any place or time that live in mutual association.
Grading	To level off to a smooth horizontal or sloping surface.
Grounding	To connect electrically with a ground.
Habitat	The place or environment where a plant or animal naturally or normally lives and grows.
High Voltage Transmission Lines (HVTL)	Overhead and underground conducting lines of either copper or aluminum used to transmit electric power over relatively long distances, usually from a central generating station to main substations. They are also used for electric power transmission from one central station to another for load sharing. High voltage transmission lines typically have a voltage of 115 kV or more.
Hydrocarbons	Compounds that contain carbon and hydrogen, found in fossil fuels.
Ionization	Removal of an electron from an atom or molecule.
Mitigate	To lessen the severity of or alleviate the effects of.
Oxide	A compound of oxygen with one other more positive element or radical.
Ozone	A very reactive form of oxygen that combines readily with other elements and compounds in the atmosphere.
Raptor	A member of the order Falconiformes, which contains the diurnal birds of prey, such as the hawks, harriers, eagles and falcons.
Sediment	Material deposited by water, wind, or glaciers.

Stray Voltage	A condition that can occur on the electric service entrances to structures from distribution lines. Stray voltage is a voltage that exists between the neutral wire of the service entrance and grounded objects in buildings such as barns and milking parlors.
Substation	A substation is a high voltage electric system facility. It is used to switch generators, equipment, and circuits or lines in and out of a system. It also is used to change AC voltages from one level to another. Some substations are small with little more than a transformer and associated switches. Others are very large with several transformers and dozens of switches and other equipment.
Voltage	A unit of electrical pressure, electric potential or potential difference expressed in volts.
Waterfowl	A bird that frequents water; especially: a swimming game bird (as a duck or goose) as distinguished from an upland game bird or shorebird.
Waterfowl Production Area (WPA)	Waterfowl Production Areas preserve wetlands and grasslands critical to waterfowl and other wildlife. These public lands, managed by the U.S. Fish and Wildlife Service, were included in the National Wildlife Refuge System in 1966 through the National Wildlife Refuge Administration Act.
Wetland	Wetlands are areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted for life in saturated soil. Wetlands include swamps, marshes, bogs and similar areas.
Wildlife Management Area (WMA)	Wildlife Management Areas are part of Minnesota's outdoor recreation system and are established to protect those lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing, and other compatible recreational uses.