



414 Nicollet Mall
Minneapolis, Minnesota 55401-1993

January 18, 2008

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

**Re: Application to Public Utilities Commission for a Route Permit
Yankee to Brookings County Transmission Line Project
Alternative Permitting Process**

Docket No. E002/TL-07-1626

Dear Dr. Haar:

Northern States Power Company, a Minnesota corporation ("Xcel Energy") 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 set 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 13 mile long, 115 kV transmission line between the Yankee Substation and Brookings County Substation located in Lincoln County MN and Brookings County SD, respectively. This project is one of three lines for which a Certificate of Need was granted in Docket No. E-002/CN-06-154.

This filing is contained in one electronic file. The application fee has been sent separately to the Department of Commerce. Please call me at (612) 330-6538 if you have any questions regarding this filing.

Sincerely,

A handwritten signature in black ink, appearing to read 'T Hillstrom'.

Thomas G. Hillstrom
Senior Permitting Analyst

NORTHERN STATES POWER COMPANY
APPLICATION TO THE
PUBLIC UTILITIES COMMISSION
FOR A
ROUTE PERMIT

YANKEE SUBSTATION TO
BROOKINGS COUNTY SUBSTATION
115 kV TRANSMISSION LINE PROJECT

Alternative Permitting Process

MPUC Docket No. E002/TL-07-1626

January 18, 2008

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1.0 PROJECT SUMMARY

Northern States Power Company, a Minnesota corporation (“NSPM,” “Xcel Energy” or the “Company”), proposes to construct and own a new 115,000 volt (“115 kV”) transmission line approximately 13 miles long between the Yankee Substation in Lincoln County, Minnesota, and the Brookings County Substation in Brookings County, South Dakota (“Project”). This line will create a second 115 kV connection between the two substations (“Yankee – Brookings #2”). The general project area is shown in Figure 1 (“Project Area”). The centerline of the proposed route (“Route”) is shown in Figure 2. More detailed maps of the Route and Project Area are provided in Appendix A.

This Application is made to the Minnesota Public Utilities Commission (“MPUC,” “Commission” or “Minnesota PUC”) pursuant to the Minnesota Power Plant Siting Act, Minnesota Statutes Chapter 216E, and Minnesota Rules 7849.5010 through 7849.6500. The Company seeks a route permit to construct the Minnesota portion of the Project: an approximately 6.5-mile 115 kV transmission line from the Yankee Substation in Lincoln County to the Minnesota/South Dakota border and associated modifications to the Yankee Substation. The Company will seek approval from the South Dakota Public Utilities Commission (“SDPUC”) for the South Dakota portion of the Project pursuant to S.D.C.L. Chapter 49-41B.

In this Application, the Company requests that the Commission approve the Route and authorize a route width of 200 feet on each side of the road centerline (400 feet total width) for the majority of the route. In one location, where the new line crosses the existing Yankee Substation to Brookings County 115 kV line (“Yankee – Brookings #1”), the Company requests a route width of 1,200 feet.

Although the Company does not seek Commission approval of aspects of the route subject to SDPUC jurisdiction, this Application includes descriptive information of the South Dakota portion of the Project to facilitate Commission review.



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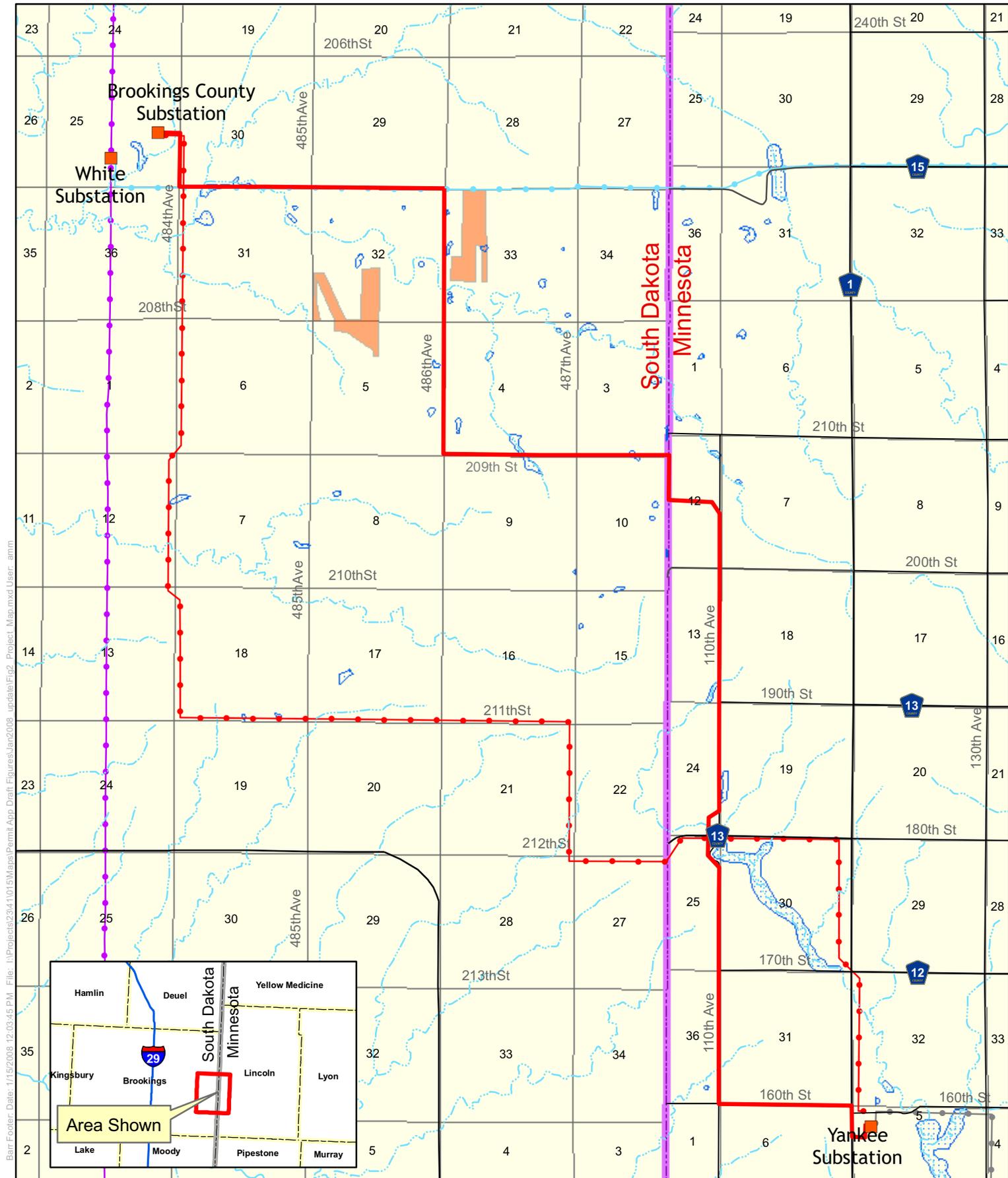
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-  State Boundary
-  Project Location



Figure 1. Project Area
BRIGO Yankee-Brookings County
Transmission Line

Xcel Energy
Route Permit Application
January 2008



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- Proposed Route
- Brookings-Yankee 115-kV #1
- Yankee-Buffalo Ridge 115-kV
- East River 115 kV
- Western 345 kV
- MN-SD State Line
- Wetlands
- SDGFP Walk-in Areas

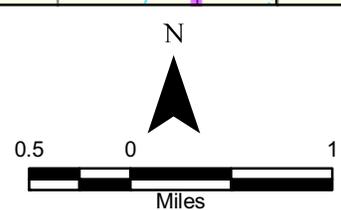


Figure 2. Proposed Route
BRIGO Yankee-Brookings County
Transmission Line

Xcel Energy
Route Permit Application
January 2008

1.1 APPLICATION COMPLETENESS CHECKLIST

The Minnesota route permit regulations contain a list of application requirements. Minn. R. 7849.5220, subp. 2. The following Table 1 provides a checklist of these requirements and the location in this application where each requirement is addressed.

Table 1: Regulatory Completeness Checklist

Regulatory Authority	Regulatory Requirement	Where (Application Section)
Minn. R. 7849.5500, subp. 2	Notice to MPUC	
	An applicant for a permit for one of the qualifying projects in subpart 1, who intends to follow the procedures of parts 7849.5500 to 7849.5700, shall notify the PUC of such intent, in writing, at least ten days before submitting an application for the project.	Appendix C
Minn. Stat. § 216E.04, subd. 3; 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.	4.1 (Proposed route) 4.5.5 (Rejected options)
Minn. R. 7849.5220, subp. 2	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

Regulatory Authority	Regulatory Requirement	Where (Application Section)
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, 4.2, 4.3, 4.4, 5.1.1
E.	The environmental information required under 7849.5220, subp. 3 (below)	See Minn. R. 7849.5220, subp. 3 (A)-(H) below
F.	Identification of land uses and environmental conditions along the proposed routes	6.1-6.6
G.	The names of each owner whose property is within any of the proposed routes for the high voltage transmission line	Appendix E
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 A
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 with the proposed line	2.3.1, 4.1, 5.1.2, 5.2
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	5.1.1, 5.6, 5.7
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, 5.5
L.	A description of possible design options to accommodate expansion of the high voltage transmission line in the future	4.6

Regulatory Authority	Regulatory Requirement	Where (Application Section)
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	See all of Section 5
N.	A listing and brief description of federal, state, and local permits that may be required for the proposed high voltage transmission line	7.3
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	2.3, Appendix B
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	6.5
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	Section 6
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	Section 6

2.0 INTRODUCTION

2.1 STATEMENT OF OWNERSHIP

NSPM is a Minnesota corporation with its headquarters in Minneapolis, Minnesota. The Company is a wholly-owned subsidiary of Xcel Energy Inc. (“Xcel Energy Inc.”), a utility holding company with its headquarters in Minneapolis. The Company provides electricity services to approximately 1.2 million retail and wholesale customers and natural gas services to 425,000 retail residential, commercial and industrial customers in the state of Minnesota. The Company also provides electricity service to more than 73,000 customers in South Dakota and 55,000 customers in North Dakota. The Company owns and operates the Yankee and Brookings County substations and will construct, own, and operate the new 115 kV transmission line. Xcel Energy Services Inc. is the service company for the Xcel Energy Inc. holding company system, and its personnel prepare, submit and administer regulatory applications to the Commission on behalf of NSPM, including route permit applications.

2.2 PERMITTEE

The permittee for the Project will be:

Permittee: Northern States Power Company

Contact: Tom Hillstrom
Permitting Analyst

Address: Xcel Energy Services Inc.
414 Nicollet Mall, MP-8A
Minneapolis, MN 55401

Phone: 612-330-6538

Email: thomas.g.hillstrom@xcelenergy.com

2.3 PURPOSE AND NEED

2.3.1 New Right-of-Way Requirement

The proposed Project is one of three new 115 kV transmission lines that the Company has proposed to construct and operate in the Buffalo Ridge area of southwestern Minnesota and southeastern South Dakota. Collectively, the three transmission projects are known as the Buffalo Ridge Incremental Generation Outlet (“BRIGO”) projects. The BRIGO transmission lines are projected to create approximately 350 megawatts (“MW”) of additional transmission capability for wind generation in the Buffalo Ridge area, increasing generation outlet capacity from 825 MW to approximately 1,175 MW.

Xcel Energy recently completed construction of the Yankee – Brookings #1 line on a route approved by the Minnesota Environmental Quality Board (“MEQB”) in 2005. (See Figure 2). (The MEQB’s authority over electric transmission line routing transferred to the Commission in 2005 pursuant to Minn. Stat. § 216E.02, subd. 2.) Yankee – Brookings #1 is now a “critical circuit” in the Project area and limits system-wide outlet capacity. To further increase generation outlet capacity in the area, the Yankee – Brookings # 2 line is needed. This second 115 kV line will provide a redundant transmission pathway that will remove the reliability-based limit on transmission capacity in the area. The Yankee – Brookings #2 line will support the electrical system in the event of a Yankee – Brookings #1 outage. To provide the necessary redundancy, the second Yankee – Brookings 115 kV transmission line must be constructed on separate right-of-way. If the Yankee – Brookings #2 were constructed on the same poles or in the same right-of-way, both circuits would be at risk during a single event, such as a storm. Consequently, the Route

proposed in this Application for Yankee – Brookings #2 is located on a new right-of-way.

2.3.2 Minnesota Certificate of Need Process Summary

In Minnesota, no large energy facility can be constructed without the issuance of a Certificate of Need by the Commission. Minn. Stat. § 216B.243, subd. 2. The definition of a “large energy facility” includes “any high voltage transmission line with a capacity of 100 kilovolts or more with more than ten miles of its length in Minnesota or that crosses a state line.” Minn. Stat. § 216B.2421, subd. 2(3). The Minnesota PUC granted the Company a Certificate of Need to construct the BRIGO projects by order dated September 14, 2007 (“Certificate of Need”).¹

2.4 ELIGIBILITY FOR THE ALTERNATIVE PERMITTING PROCESS

Minnesota Statutes Section 216E.03, subdivision 2 provides that no person may construct a high voltage transmission line (“HVTL”) without a route permit from the Commission. An HVTL is defined as a transmission line of 100 kV or more and greater than 1,500 feet in length in Minnesota Statutes § 216E.01; subd. 4. The 115 kV transmission line project proposed here is a HVTL and therefore a permit is required prior to construction.

Minnesota Statutes § 216E.04 and Commission rules provide for an Alternative Permitting Process for certain facilities. The proposed transmission line qualifies

¹ In the Matter of Application of Northern States Power Company d/b/a Xcel Energy for Certificates of Need for Three 115 kV Transmission Lines in Southwestern Minnesota, Docket No. E-002/CN-06-154, Order Granting Certificates of Need (Sept. 14, 2007) (“Certificate of Need Order”). A copy of the Certificate of Need Order is attached as Appendix B.

for the Alternative Permitting process because it is 115 kV and is an HVTL between 100 and 200 kV as authorized by Minnesota Statutes § 216E.04, subd. 2(C) and Minnesota Rules Chapter 7849.5500, Subp. 1(C). This Application is submitted pursuant to the provisions of the Alternative Permitting Process outlined in Minnesota Rules 7849.5500 to 7849.5720.

2.5 NOTICE TO THE COMMISSION

Xcel Energy notified the Commission by letter dated December 18, 2007, that the Company intended to apply for a route permit under the Alternative Permitting Process for the proposed Project. This letter complies with the requirement of Minn. Rule 7849.5500, Subp. 2, that the Applicant notifies the Commission at least ten days prior to submitting an application for a route permit. A copy of this notice is attached in Appendix C.

3.0 PROJECT INFORMATION

3.1 PROJECT LOCATION

The proposed Project is located in Lincoln County, Minnesota, and Brookings County, South Dakota (Figure 1). Figure 2 shows the proposed Route for the entire Project, including the Minnesota and South Dakota sections. Aerial photograph maps for the entire Project, including the Minnesota and South Dakota sections, are provided in Appendix A (Figures A-1 through A-4).

In Minnesota, the proposed Project is located almost entirely within Drammen Township in Lincoln County. The townships, ranges, and sections in the Minnesota portion of the proposed Route are listed below in Table 2.

Table 2: Minnesota Project Area (Section, Township, and Range)

Township	Range	Sections
109N	46W	6
110N	46W	7, 18, 19, 30, 31, 32
110N	47W	12, 13, 24, 25, 36

3.2 PROJECT PROPOSAL

Xcel Energy proposes to construct an approximately 13-mile single-circuit 115 kV transmission line in Lincoln County, Minnesota and Brookings County, South Dakota, to provide a second 115 kV connection between the Yankee Substation and the Brookings County Substation. Approximately 6.5 miles of the line will be located in Minnesota. The Project also includes necessary modifications to both substations. The line is one of three 115 kV transmission line projects in the area that together will improve the overall system's capability to support further wind generation development in southwestern Minnesota and eastern South Dakota.

3.3 PROJECT SCHEDULE

Xcel Energy anticipates a spring 2009 in-service date for the Yankee Substation to Brookings County Substation 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

The Company estimates that the transmission line and substation improvements will cost approximately \$18.7 million, as follows:

Yankee – Brookings County 115 kV Transmission Line	\$7,700,000
Yankee Substation Modifications	\$5,000,000
Brookings County Substation Modifications	<u>\$6,000,000</u>
Total Project Costs:	<u>\$18,700,000</u>

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. Annual operating and maintenance costs for 115 kV transmission voltages across Xcel Energy's Upper Midwest system have averaged in the range of \$300 to \$500 per mile of transmission right-of-way over the last five years. 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 PROPOSED ROUTE

The proposed Route in Minnesota begins at the Yankee Substation at the corner of 120th Avenue and 160th Street in Lincoln County and proceeds west for one-mile along 160th Street and then turns northward along 110th Avenue on the Minnesota side of the state line until it reaches a point approximately one-half mile north of 200th Street. (See Figures 2 and Appendix A). At this point, the Route turns northwest and west toward the South Dakota border along a half-section line. The Route then jogs north along the South Dakota border for approximately one-third mile and connects with 209th Street in South Dakota. (See Appendix A, Figure A-2). This northernmost segment of the Route in Minnesota was developed in consultation with the affected landowners (See Section 4.5.1). In South Dakota, the Route follows 209th Street west for approximately one and three-fourths mile to the intersection with 486th Avenue. At 486th Avenue in South Dakota, the proposed Route then turns north for two miles to connect with the existing East River Electric Power Cooperative (“East River”) White to Ivanhoe 115 kV line, which runs parallel to and south of 207th Street. Along this portion of the Route, Xcel Energy proposes to remove the existing East River 115 kV structures and consolidate the new 115 kV circuit with the existing 115 kV transmission circuit on new single-pole, double-circuit structures. This 115 kV/115 kV “double-circuit” segment of the Route then follows 207th Street for two miles until reaching 484th Avenue. The line will then head north and run parallel to the Buffalo Ridge to Brookings 115 kV transmission line for approximately 0.4 mile and enter the Brookings County Substation. This last segment will be constructed on single circuit structures.

Key features along the proposed Route in Minnesota include the Yankee – Brookings County #1 line, and a wetland that is associated with an unnamed tributary to Medary Creek, which is also located at the point the proposed Route crosses County Highway 13 (180th Street). (See Figure 2 and Appendix A, Figure A-2).

This tributary is identified by the U.S. Fish and Wildlife Service (“USFWS”) as critical habitat for the Topeka Shiner. The wetland/tributary at this intersection is also a Minnesota Department of Natural Resources (“Mn DNR” or “Minnesota DNR”) protected waterway. The wetland/tributary at this intersection likely cannot be spanned. Therefore, the proposed Route will jog to the west around this wetland. Other construction options will be evaluated during detailed design in this area to avoid construction in the wetland. A discussion of construction and mitigative methods to address these issues is contained in Section 6.

There is also a 34.5-kV feeder line owned by PPM Energy, Inc. (“PPM”) located along three miles of the proposed Route in Minnesota (one mile along 160th Street, and two miles along 110th Avenue. (See Figure A-1). These feeder lines are needed to connect the new PPM Energy wind turbines in the Project area to the Yankee Substation (and eventually the NSPM Transmission system). MinnDakota Wind, LLC (“MinnDakota”), an affiliate of PPM, is the owner of the 34.5-kV facilities. In one approximately 500-foot segment of the Route, just south of 170th Street, the new 115 kV line will be placed approximately 35-40- feet parallel to and west of the 34.5 kV feeder line to minimize impacts to trees in front of the house located on the east side of 110th Avenue.

4.2 SUBSTATIONS

4.2.1 Yankee Substation

The existing Yankee Substation was built 2007 and was constructed to accommodate expansion. The existing substation will be modified to accommodate the switching gear, bus work and new transformers necessary to integrate the proposed 115 kV transmission line into the transmission network. The new equipment at Yankee Substation will be placed within the existing fenced area.

The new equipment will include a 115 kV dead end structure with a 115 kV, 2000A motor-operated disconnect; two empty circuit breaker bays to connect the new line to the existing Main Bus #1; a 115 kV, 3000A breaker between the Main Bus #1 and the second transformer; a single-phase coupling capacitor voltage transformer on the second transformer position; and four 115 kV, 3000A group-operated disconnects. All controls and protection for the new breaker also need to be installed, as well as all foundations, steel, conductor, trenching, and grounding for the equipment installations for the modified substation. No additional grading will be required.

4.2.2 Brookings County Substation

The Brookings County Substation in South Dakota will be modified to accommodate the Yankee – Brookings #2 line. The required work will include adding a new 345/115 kV transformer and upgrading the 345- and 115 kV yards. The upgrades will include new circuit breakers for protecting the new transmission line, as well as bus work and switches to complete connections. No additional grading work will be needed. All new equipment will be installed within the existing substation fence.

4.3 STRUCTURE OPTIONS ALONG PROPOSED ROUTE

The Minnesota portion of the Project is proposed to be constructed with single-circuit, single-pole steel structures. In South Dakota, two miles of the Route are proposed to be double circuited with an existing East River line. The balance of the South Dakota portion would be constructed on single circuit structures.

4.4 PROPOSED TRANSMISSION LINE ROUTE WIDTH

In general, the Company requests a route width of 200 feet on each side of the road centerline (400 feet total width). Along all but one section of the proposed Route, this width should be sufficient to allow for any adjustments required during detailed design. The Company, however, requests a wider route along one segment: a 1,200-foot wide route (total width) is requested in the area where the proposed Route crosses the recently constructed Yankee – Brookings #1 transmission line at the intersection of County Highway 13 (180th Street) and 110th Avenue. (See Appendix A, Figure A-2). The wider route is needed in this area to provide flexibility during detailed design to develop the best method for both crossing the Brookings – Yankee #1 line and avoiding the large wetland located on this route segment.

4.5 ROUTE SELECTION PROCESS

The Project Area was initially studied during the planning process by a team of siting, right-of-way, ecological and engineering personnel. The team reviewed the general area identified for significant routing issues that might arise. Additional field studies were conducted to identify natural resources along the route alternatives. In consultation with affected landowners, route alternatives were further developed using the process described below, and ultimately one route was selected for this Application in accordance with Minnesota Rule 7849.5530.

4.5.1 Initial Route Selection Criteria

Xcel Energy first developed potential routes using digital data such as aerial photographs and topographic maps. The siting group requested input from various natural and cultural resource regulatory agencies and affected landowners. The group analyzed the Project Area and identified preliminary route options based on the following criteria:

- Minimize impacts to reliability (*e.g.*, consider if existing lines can be double-circuited);
- Parallel roads and existing transmission lines to help decrease the amount of right-of-way required;
- Parallel field lines and property lines, where access is adequate and the transmission line would cause minimal conflicts; and
- Minimize the length of the transmission line to reduce the impact area and costs for the Project.

The routes were further refined to avoid the following to the extent possible:

- Existing or planned farm homesteads or other residences;
- Areas where clearances are limited because of trees or nearby structures;
- Conflicts with agricultural areas or agricultural operations, or other land uses;
- Areas with higher potential for archeological or historic features or artifacts; and

- Environmentally sensitive sites such as wetlands, significant sites, areas with threatened and endangered species and species of special concern, areas of significant biological or cultural significance, and state and federal lands.

Xcel Energy did not consider any route that required double-circuiting or sharing right-of-way with the existing Yankee – Brookings #1 line. As noted above, the primary purpose of the Project is to provide a second, redundant 115 kV circuit between the Yankee and Brookings County substations. Under North American Electric Reliability Corporation (“NERC”) reliability standards, constructing a second 115 kV transmission line in the same right-of-way as the Yankee – Brookings #1 line would not provide the same reliability benefit as two lines on separate rights-of-way because both lines on a shared right-of-way are at risk of being taken out of service by a single event – *e.g.*, a tornado. Likewise, route segments were rejected if they would closely parallel the existing Yankee – Brookings #1 line to reach the Brookings County Substation.

Xcel Energy also rejected routes that would require a crossing into South Dakota along 160th Street because of their greater impacts on nearby residences. To reach the Brookings County Substation, these routes would then have had to turn north along Highway 14 or 487th Avenue to meet the existing East River 115 kV line. Both of these roads have more homes adjacent to the roadway than the north/south portions of the Route along 110th Avenue in Minnesota and 486th Avenue in South Dakota. Figure 3, below, shows the residences along this alternative and other alternatives evaluated.

4.5.2 Detailed Route Selection Criteria

Once the overall route strategy was developed, Xcel Energy identified a route heading west from the Yankee Substation along 160th Street and then north along 110th Avenue between 160th Street and 210th Street. North of 210th Street, where 100th Avenue ends, various route options to the Brookings Substation were considered. (See Figure 3.) To evaluate these route options, the Company considered the following criteria in more detail:

- **Number of residences passed:** For comparing alternatives, residences along each of the alternatives were identified. The number of residences within 300 feet of each alternative was tabulated as well as residences within 300 feet to 1,500 feet. These impacts for each alternative were then compared.
- **Number of wetlands to be spanned:** Wetlands to span are primarily small emergent wetlands associated with drainages and/or small depressions near or adjacent to the road. Two larger wetland areas lie within segments of the route that are common to all alternatives. These are:
 - Emergent wetland in the southeast corner of the intersection of 180th Street and 110th Avenue (described in Section 4.1, above); and
 - Emergent and scrub-shrub wetland associated with drainage along the north edge of 207th Street in South Dakota between 484th and 485th Avenues.
- **Number of streams and drainages to be spanned:** The two required stream crossing in Minnesota are all narrow, and include both perennial streams and drainage swales tributary to the

perennial streams. Spanning stream crossings should not pose a design or construction challenge.

- **Cultural resources:** The entire Project Area has some potential to contain archeological sites because of the geography and history of the area. Past surveys in the area for other transmission line and wind energy projects have found minor, scattered artifacts, particularly in areas with rolling topography near streams. (See Section 6.4). For example, Route Option 1 (See Section 4.5.5, below and Figure 3) crosses through an area with no roads and also may have increased potential for cultural resources artifacts because of its proximity to streams and rolling topography similar to where other artifacts have been found in the area.

4.5.3 Public Participation

In addition to using the route criteria listed above, the Company held two open houses in the Project Area to inform potentially affected residents and government officials about the Project, to listen to any concerns, and review potential route options. The first open house was held on July 17, 2007 at the Midwest Center for Wind Energy, which is about 6 miles south of Hendricks, Minnesota. The second open house was held in Elkton, South Dakota on December 12, 2007. Xcel Energy mailed notices or otherwise contacted potentially affected landowners in both Minnesota and South Dakota to inform them of these open houses. Written public comments from both open houses are provided in Appendix E. In addition, in some cases Xcel Energy contacted landowners by telephone or in person to discuss potential options affecting their property.

First Open House

The primary purpose of the first open house in July, 2007, was to inform local residents about the project and hear about initial concerns or route suggestions. Approximately 40 to 45 people, including two Lincoln County Commissioners, attended.

Primary issues raised at the open house included the need for the Project, the extent to which the second 115 kV line can cross or run parallel to the first 115 kV line, and the details of where and how the existing East River 115 kV line could be double-circuited with the proposed new Xcel Energy 115 kV transmission line. Residents and landowners on the initial route had detailed questions regarding exact pole placement, tree conflicts, and route plans. Several alternative routes in Minnesota and South Dakota were suggested and evaluated informally. However, only one nearby resident filled in or mailed a formal written comment. (See Appendix E).

Second Open House

At the second open house held in December, 2007, the Company presented a preferred route, explained how the route was selected and received public comments and about the preferred route. Twelve persons signed in at the open house, and five submitted formal written comments. In addition to general concerns regarding avoiding tree damage where possible, one resident on the South Dakota side of the border identified a potential conflict with his personal air strip. Also, in consultation with one of the affected landowners, Xcel Energy developed the proposed final segment of the route in Minnesota. (See Appendix A, Figure A-2). Based on discussions with affected landowners, the proposed Route in this area heads west from 110th Avenue across a half-section line to the South Dakota border (through Section 12, T110N, R47W)

and then turns north along the border for one-third mile before crossing into South Dakota.

4.5.4 Final Route Selection

Based on the information described above, the Company refined its route proposal as detailed in this Application. The Company believes the proposed Route best meets the objectives stated above. The proposed Route includes the following features:

- Land use impacts are minimized by sharing road and transmission right-of-way. Approximately 93 percent of the Route shares road right-of-way. There are only two short sections that do not follow existing roadway right-of-way: (1) an approximately 0.4 mile segment near 180th Street and 110th Avenue in Minnesota where the Route shifts off the roadway to avoid a large wetland; and (2) an approximately 0.5 mile segment near the state border, where the route was developed with input from the affected landowners.
- Impacts to residents are minimized. There are four occupied residences within 300 feet of the proposed Route (three in Minnesota and one in South Dakota). Impacts to these residences will be further minimized during detailed design by constructing the Project across the roadway from affected residences where possible.
- Impacts to environmental resources are minimized. In Minnesota, the line crosses only two streams, and potentially impacts only one Minnesota DNR protected water (a tributary to

Medary Creek), which is also a Topeka Shiner critical habitat. The Company anticipates that the tributary and associated wetland area will be spanned or otherwise avoided and no impact to this resource will occur. If during detailed design it is determined that the wetland cannot be spanned, impacts will be mitigated by following the recommendations outlined by the USFWS in their publication “Construction Projects Affecting Waters Inhabited by Topeka Shiners (*Notropis topeka*) in Minnesota”.

4.5.5 Rejected Options

In developing the proposed Route, Xcel Energy considered and rejected various segment alternatives. In addition to the general alternatives discussed above, multiple route options were considered primarily in the area north of 200th Street in Minnesota where 110th Avenue ends. (See Figure 3).

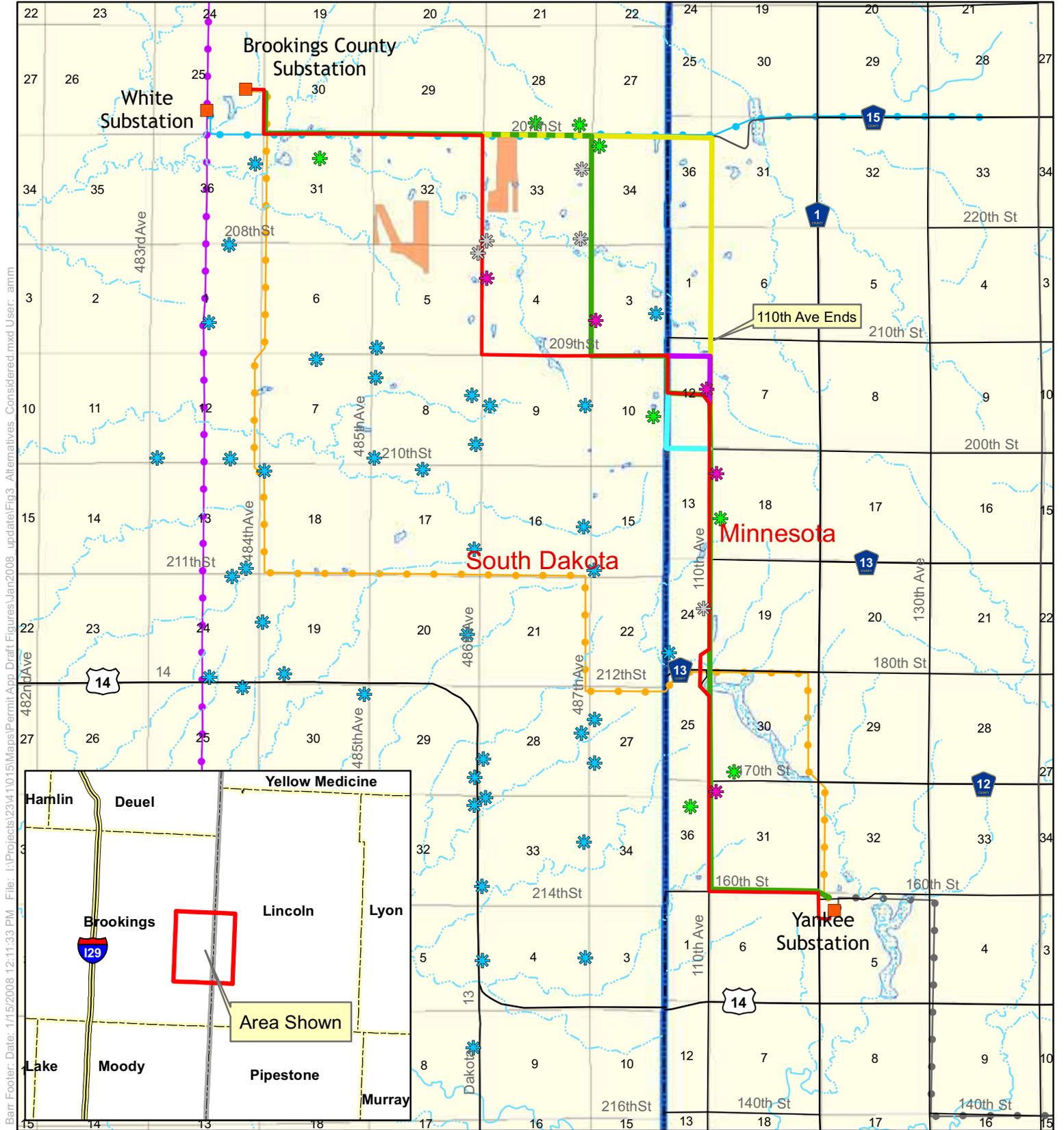
One option would continue north from 200th Street/110th Avenue north to 207th Street and connect into the East River 115 kV line at 110th Avenue. (Option 1 on Figure 3.) This option would provide additional double-circuiting opportunities with the existing East River 115 kV transmission line and has few wetlands and streams to cross. However, it would require crossing through an approximately two-mile segment of pasture where there is no existing right-of-way. This option also appears to have a higher potential for archeological artifacts because of the rolling topography and streams in the area.

Other options in this area, shown in Figure 3, were considered but rejected—primarily based on landowner concerns regarding conflicts with their farming operations. Two other options were rejected because they would cross an

unnamed tributary of Deer Creek twice in the area just south and west of intersection of 210th Street and 110th Avenue. (See Figure 3).

The Company also considered alternatives on the South Dakota portion of the Project using a crossing at 209th Street. One alternative would turn north along 487th Avenue to reach the existing East River 115 kV line on 207th Street (instead of using 486th Avenue). Shown as Option 2 on Figure 3, this option was rejected because, overall, the alternative would pass within 300 feet of three more residences than the proposed Route, and approximately the same number of wetlands and streams.

The Company also considered using separate right-of-way for two miles near the Brookings County Substation in South Dakota, rather than double-circuiting with the East River 115 kV line. The double-circuit approach was preferred to consolidate transmission lines near the substation and to avoid impacts to the wetland north of 207th Street. This proposed double circuit configuration does not cause any reliability concerns because the East River 115 kV line does not serve the same purpose as the proposed line.



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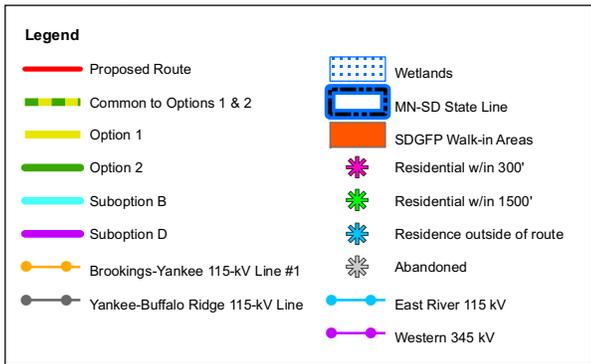


Figure 3. Alternatives Considered
BRIGO Yankee-Brookings County
Transmission Line

Xcel Energy
Route Permit Application
January 2008

4.6 DESIGN OPTIONS TO ACCOMMODATE FUTURE EXPANSION

The transmission line portion of the Project is being designed to provide a reliable second 115 kV circuit between the Yankee Substation and the Brookings County Substation. Xcel Energy does not anticipate the need to connect the two substations at a higher voltage within the foreseeable future and is, therefore, not proposing to build the line to accommodate greater voltage or transfer capacity than proposed. As noted, both the Brookings County and Yankee substations were designed and constructed to accommodate future transmission line interconnections.

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

5.1 TRANSMISSION STRUCTURES AND RIGHT-OF-WAY DESIGN

5.1.1 Transmission Structures

Xcel Energy proposes to use the same structure and conductor types as used for the Yankee – Brookings #1. The structures will be steel, single circuit poles with davit arms. (See Figure 4 below). The poles will have a galvanized or weathering steel finish and constructed on concrete foundations and. The poles will average 90 feet in height, and there will be an average span of 500 feet between structures. The conductors will be bundled 795 kcmil 26/7 Aluminum Core Steel Supported (“ACSS”). A bundled conductor configuration consists of two conductors spaced approximately 18 inches apart at the end of each insulator string. Table 3 summarizes the structure design for the line.

Figure 4: 115 kV Single-Circuit Davit Arm Structure

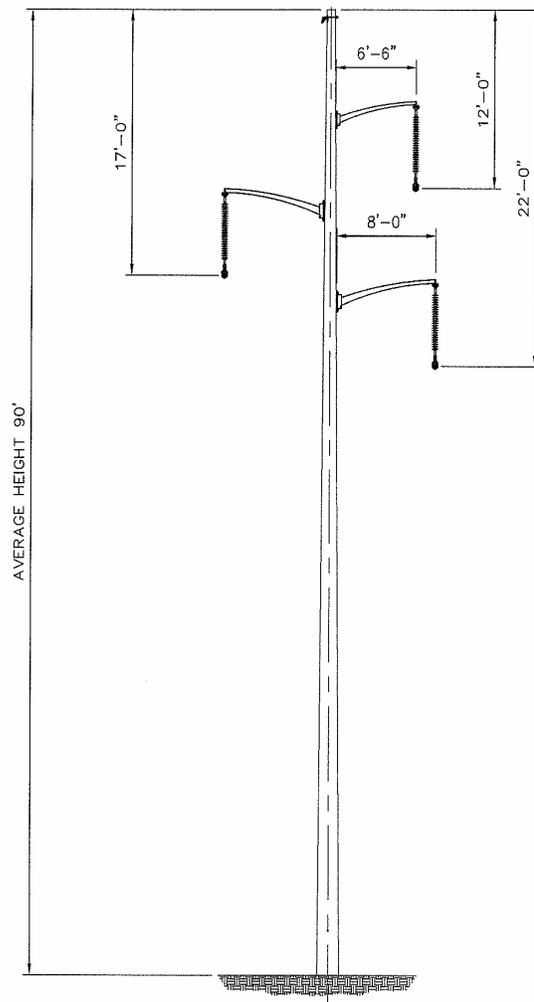


Table 3: Minnesota Structure Design Summary

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

The proposed transmission line will be designed to meet or surpass all relevant local and state codes, NERC **standards**, the National Electric Safety Code (“NESC”), 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.

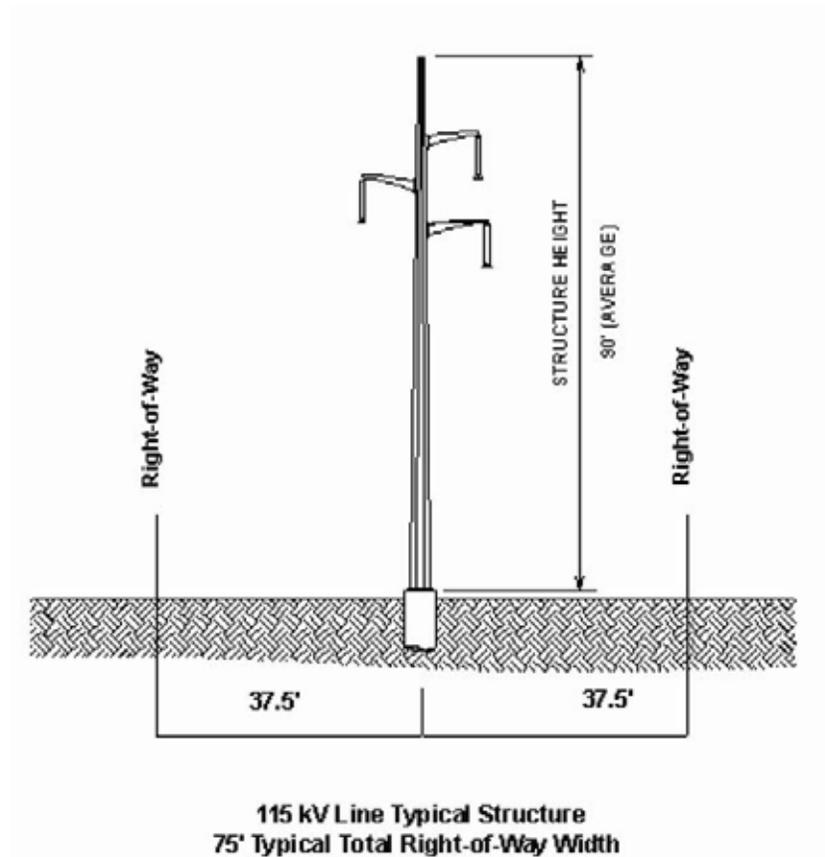
5.1.2 Right-of-Way

The Yankee Substation to Brookings County Substation 115 kV transmission line will include construction of approximately 13 miles of new transmission line. Approximately 6.5 miles of the proposed line will be located in Minnesota. The proposed 115 kV transmission line will parallel existing roadway right-of-way for approximately 95 percent of its route.

The 115 kV transmission line will require a 75-foot right-of-way. (See Figure 5). When the line is not adjacent to a roadway, the Company will require a 75-foot easement from the landowner. When the line is adjacent to a roadway, the line will share the existing road right-of-way and an easement of lesser width will be required from the landowner depending on road configuration and structure requirements. The amount of new easement required will depend upon the road

configuration and the distance between the road and the transmission line. Along township roads, the Project will be located parallel to and 38 feet from the section line upon which the road is centered. 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.

Figure 5: 115 kV Right-of-Way



5.2 RIGHT-OF-WAY ACQUISITION

The right-of-way acquisition process begins early in the detailed design process. For transmission lines, utilities acquire easement rights 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 identified, 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. This contact is typically made after a route permit is issued for a project, but may occur earlier in some instances.

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, 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, the Company is able to work with the landowners to address their concerns and an agreement is reached for the utility's 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 Company'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, the Company 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.

5.3 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, available workforce, and materials.

The actual construction will follow standard construction and mitigation practices that were developed by the Company 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 factors. 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 percent or less slope will not be graded or leveled. Sites with more than 10 percent 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. 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 laydown 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 such 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 wetland 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 state, county, or local 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; and
- When construction during winter is not possible, construction mats will be used where wetlands would be impacted.

5.4 RESTORATION PROCEDURES

During construction, crews will attempt to limit ground disturbance wherever possible. Areas, however, generally 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 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:

- Prompt seeding;
- Silt fences; and
- Erosion control blankets.

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.

5.5 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. But, practically speaking, HVTLs are seldom completely retired. Transmission infrastructure has few mechanical elements and is built to withstand weather extremes that are normally encountered. Except in instances of severe weather such as tornadoes and heavy ice storms, transmission lines rarely fail. When such a failure occurs, a fault is sensed on the system and the transmission line is automatically taken out of service by the operation of protective relaying equipment. 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 percent.

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 Company transmission lines in Minnesota and the surrounding states vary. However, past experience shows that average costs are approximately \$350 to \$500 per mile for voltages from 115 kV through 345 kV. 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 NESC 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.

5.6 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); therefore, the resulting EMF is at 60 hertz.

5.6.1 Electric Fields

Voltage on any wire (conductor) produces an electric field in the area surrounding the wire. The electric field associated with a HVTL 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 Designs (3.28 feet above ground)

Structure Type	Nominal Voltage	Distance to Proposed Centerline										
		-300'	-200'	-100'	-50'	-37.5'	0' ^a	37.5'	50'	100'	200'	300'
Single Circuit 115kV Steel Pole Davit Arm	121 kV	0.005	0.012	0.057	0.253	0.408	0.862	0.413	0.248	0.062	0.014	0.006

^a Maximum electric field for this line is 1.114, which is at 12.5' from the proposed centerline

The proposed 115 kV single-circuit transmission line will have a maximum electric field density of approximately 0.862 kV/m, at centerline, one meter above ground. This is significantly less than the maximum limit of 8 kV/m that has been a permit condition imposed by the State of Minnesota in other route proceedings. This standard was designed by the MEQB in the 1970s to prevent serious hazard from shocks when touching large objects, such as tractors, parked under extra HVTLs of 500 kV or greater.

5.6.2 Magnetic Fields

Current passing through any conductor, including a wire, produces a magnetic field in the area around the wire. The magnetic field associated with a HVTL surrounds the conductor and decreases rapidly with increasing distance from the conductor. The magnetic field is expressed in units of magnetic flux density, expressed as gauss (“G”).

The question of whether exposure to power-frequency (60 hertz) magnetic fields can cause biological responses or even health effects has been the subject of considerable research for the past three decades. There is presently no Minnesota statute or rule that pertains to magnetic field exposure. The most recent and exhaustive reviews of the health effects from power-frequency fields conclude that the evidence of health risk is weak. The National Institute of Environmental Health Sciences (“NIEHS”) issued its final report, “NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields” on June 15, 1999, following six years of intensive research. NIEHS concluded there is little scientific evidence correlating EMF exposures with health risk.

The Minnesota State Interagency Working Group on EMF Issues, consisting of members from the Minnesota Department of Health, Department of Commerce, the Commission and Pollution Control Agency, conducted research related to EMF, which resulted in similar findings to the NIEHS report. (EMF Policy and Mitigation Options, Sept. 2002). That paper stated:

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, and 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.

Id. at 1. While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate. In addressing this issue, Xcel Energy provides information to the public, interested customers, and employees for them to make an informed decision about EMF. Xcel Energy will provide measurements for landowners, customers, and employees who request them. In addition, Xcel Energy has followed the “prudent avoidance” guidance suggested by most public agencies. This includes using structure designs that minimize magnetic field levels and siting facilities in locations with the fewest number of people living nearby.

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)

100' Structure Type	System Condition	Current (Amps)	Distance to Proposed Centerline										
			-300'	-200'	-100'	-50'	-37.5'	0'	37.5'	50'	100'	200'	300'
Single Circuit 115kV Steel Pole Davit Arm	Peak	1080	1.25	2.67	12.13	30.31	45.18	144.06	56.40	36.35	10.18	2.50	1.07
	Average	648	0.75	1.60	5.75	18.19	27.11	86.43	33.84	21.81	6.11	1.50	0.64

5.7 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.

6.0 ENVIRONMENTAL INFORMATION

This section provides a description of the environmental setting, potential impacts and mitigative measures Xcel Energy has proposed to minimize the impacts of siting, constructing, and operating the proposed Project. If the 115 kV line and/or substation were removed in the future, the land could be restored to its prior condition and/or put to a different use. Minn. Rule 7849.5220, Subp. 3h, requires an applicant to provide cost estimates for the various mitigative measures proposed to address impacts. 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. All mitigation costs are included in the identified cost of the Project.

6.1 ENVIRONMENTAL SETTING

The Project Area between the Brookings County and Yankee substations is located within the Coteau Moraines and Inner Coteau subsections of the North Central Glaciated Plains Section identified by the Ecological Classification System.

6.1.1 Topography

The Project Area is characterized by rolling to steeply rolling moraines and a well-developed drainage system with few lakes. Prior to settlement, the landscape was characterized by tall grass prairie with wet meadows and floodplain forests surrounding streams. Existing streams and surface water drainage patterns are shown generally in Figure A-1. Figure 6 provides an overview of the topography in the Project Area.

The elevation near the Yankee Substation is about 1,870 feet. In rolling terrain that slopes to the southwest along the Medary Creek and Deer Creek watersheds, the elevation along the Route first increases to nearly 2000 feet near the South Dakota border and then drops to approximately 1780 feet near the Brookings County Substation in South Dakota. Surface water in the Minnesota portion of the Project Area generally flows into the intermittent tributaries to Medary Creek from where it then flows south and west toward the Big Sioux River. As the Project Area extends northward, the overall slope switches to the northwest and toward the Deer Creek watershed near the Brookings County Substation.

6.1.2 Geology and Soils

The surface geology of the corridor consists of unconsolidated glacial materials deposited during the Wisconsin glacial advance. These materials generally consist of till intermixed with outwash deposits. The till is made up of mostly calcareous clay and silt with inclusions of rock fragments. Outwash materials consist of sands and gravels deposited by glacial melt water. Unconsolidated glacial materials are generally over 400 feet thick in the Project Area. The bedrock geology of this area consists of the Upper Cretaceous Pierre Shale and Niobara Formation, and the Precambrian Sioux Formation.

Soils in the Project Area consist primarily of loam, silty loam, silty clay loam, clay loam, and sandy clay loam. Slopes range from nearly flat to up to 40 percent, which is characteristic of the rolling topography. Approximately 50 percent of the soils within the Project Area are listed as prime farmland; approximately 16 percent of the soil is listed as prime farmland when drained (USDA 2004).

6.2 HUMAN SETTLEMENT

6.2.1 Public Health and Safety

The issue of the potential health impacts of electric and magnetic fields is addressed above in Section 5.6. In addition, the Project will be designed in compliance with local, state, NESC, and Xcel Energy standards regarding clearance to ground, clearance to crossing 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 circuit breakers and relays located where the line connects to the substation. The protective equipment will de-energize the line should such an event occur. In addition, the substation facility will be fenced and access limited to authorized personnel. Proper signage will be posted warning the public of the risk of coming into contact with the energized equipment.

Mitigative Measures

Xcel Energy will meet electrical safety codes and Company standards in construction of the line and will minimize proximity to residences per its “prudent avoidance” strategy summarized in Section 5.6.2. No additional mitigative measures are proposed.

6.2.2 Land Use

The Project area is mostly zoned agricultural, reflecting the typical land use of Lincoln County. Figure 7 shows the general land use in the Project Area (U.S.G.S National Land Cover Database, 2001). The south part of the Route in Minnesota primarily passes through cultivated cropland. The only places of future residential development in the area appear to be concentrated along the southwestern side of Lake Benton, Minnesota, which is east of the Yankee Substation and the Project Area (Minn. Planning, 1999).

There are four occupied residences within 300 feet of the proposed Route that may require tree removal. Three of these residences are in Minnesota, and one is in South Dakota. (See Figure 3 and Appendix A). There are an additional six occupied residences between 300 and 1,500 feet of the Route from which the line will likely be visible. Impacts will be minimized to the extent possible through detailed Project design.

Total permanent impacts (area where the existing land use will be changed) due to the Project are well below one acre.

Mitigative Measures

Xcel Energy has selected a proposed Route that avoids occupied residences and associated tree groves as much as possible. In addition, during detailed design, Xcel Energy will attempt to place the new line on the opposite side of the road from residences and avoid existing tree groves as much as possible. No other mitigative measures are proposed.

6.2.3 Displacement

Displacement is required when a business or residence is located within the right-of-way for a new transmission facility. No displacement is anticipated as a result of this Project. The line will be designed so that all existing structures are located outside of the right-of-way.

Mitigative Measures

Because no displacement will occur, no mitigative measures are proposed.

6.2.4 Noise

Noise is defined as unwanted sound. It may be comprised of a variety of sounds of different intensities across the entire frequency spectrum. Transmission conductors and transformers at substations can produce noise when it is foggy, damp, or rainy. Under these conditions, for example, power lines can create a subtle crackling sound due to the small amount of the electricity ionizing the moist air near the wires. The level of noise or its loudness depends on conductor conditions, voltage level, and weather conditions. During heavy rain the general background noise level is usually greater than the noise from a transmission line. Noise levels produced by a 115 kV transmission line are generally less than outdoor background levels and are therefore not usually audible.

Mitigative Measures

Minimal impacts are anticipated and therefore no mitigative measures are proposed.

6.2.5 Radio and Television Interference

Under certain circumstances, 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.

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. 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 adjusting the receiving antenna. Moreover, AM radio frequency interference typically only 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.

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed. 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. 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 pre-Project level, including the appropriate modification of receiving antenna systems if necessary.

6.2.6 Aesthetics

The Project Area has historically been largely agricultural; however, wind energy generation projects are rapidly causing changes to the area. Land use now includes a mixture of residential, commercial, and industrial land uses. The transmission line structures will contribute to changing the views throughout the Project Area. There are existing transmission lines, including Yankee – Brookings County #1, within one-half mile of all residences and businesses along the proposed Route, which largely follows existing roadway corridors.

The Yankee – Brookings County #1 line is constructed of galvanized poles. For Yankee – Brookings County #2, Xcel Energy requests the flexibility to use a combination of weathering and galvanized poles because of the higher cost of galvanized poles compared to weathering steel (over 10 percent higher) and a lack of any established preference for one finish over the other. It is anticipated that galvanized structures would be used near substations and at the line crossing where there are existing galvanized poles and weathering structures would be used for the rest of the Project..

Mitigative Measures

Although the line will be a contrast to some surrounding land uses, Xcel Energy has identified the route that utilizes existing corridors and avoids homes to the extent possible. Xcel Energy will work with landowners to identify and address concerns related to the transmission line pole types and location and/or substation aesthetics.

6.2.7 Socioeconomics

Approximately eight to twelve workers will be required by Xcel Energy for transmission line construction. The transmission crews are expected to spend approximately six months constructing the transmission line. During construction, it is expected there will be a small positive impact on the community due to the expenditures by the construction crews in the local community.

Once the Project is operational, its socioeconomic effects are generally positive because of their impacts on the local tax base. First, the underlying purpose of the proposed project is to allow continued wind energy development in the Project Area. Second, the effect on the local tax base is proportional to the size of an area's tax base valuation after the construction of the transmission line.

In rural areas with relatively small tax bases, the added valuation resulting from transmission lines can be significant.

The population and economic characteristics based on the 2000 U.S. Census are presented in Table 6.

Table 6: Population and Economic Characteristics

Location	Population	Minority Population (Percent)	Caucasian Population (Percent)	Per Capita Income	Percentage of Population Below Poverty Level
State of Minnesota	4,919,479	10.4%	89.6%	\$23,198	8.1%
Lincoln County	5693	0.7%	99.3%	\$16,009	8.4%

Source: U.S. Census Bureau, Quick Facts

As reported in the 2000 U.S. Census, the population density of Lincoln County is 12 people per square mile. Minorities and persons living in poverty make up 0.7 percent and 8.4 percent of the population, respectively. For comparison, minorities comprise 10.4 percent of the statewide population and 8.1 percent of Minnesota residents live in poverty. The town of Thompsonburg, Minnesota, is the only settlement with a concentration of residents. The town has an estimated population of 35 (U.S. Census Bureau, 2000).

Per capita incomes within the Project area are similar to those found throughout Lincoln County. The percentages of the population within the townships in the Project area are comparable to the levels found in Lincoln County. The Project Area does not contain disproportionately high minority populations or low-income populations. No impacts are anticipated to minority or low-income populations.

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed.

6.2.8 Cultural Values

Cultural values include those perceived community beliefs or attitudes that provide a framework for unity in a given community. The communities near the Project corridor appear to value pioneer roots and the local history. The economy of these areas depends on agricultural practices (typically corn, soybeans, grains, and grazing), manufacturing, and tourism. Tourist attractions in Lincoln County are primarily around Lake Benton and outdoor activities, as well as around the growing wind farm presence in the Project area. Lincoln County displays the Buffalo Ridge Project prominently in its tourism materials (Lincoln County, 2007b). Tourist attractions in the Project vicinity in Brookings County are centered primarily on outdoor activities (Brookings County, 2007).

No impacts are anticipated to cultural values.

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed.

6.2.9 Recreation

In addition to numerous regional recreation areas, such as nearby Lake Shaokatan, recreational opportunities near the Project Area include a bike trail in Lincoln County along the north-south County Road 1, (listed in Lincoln County, 2007b). 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 impacts are anticipated and therefore no mitigative measures are proposed.

6.2.10 Public Services (including transportation)

There are no planned roadway expansions within the Project Area, in either Minnesota or South Dakota. The Lincoln County Highway Engineer has requested that the poles not be placed on the west or north sides of the roads to minimize potential problems with snow drifts. The Company will accommodate this request where it does not conflict with other land use constraints, such as residences along the Route. Lincoln County and Brookings County provide typical emergency public infrastructure to the community (Lincoln County, 2007a).

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed.

6.3 LAND-BASED ECONOMIES

6.3.1 Agriculture

The U.S. Department of Agriculture (“USDA”) 2002 Census of Agriculture found that Lincoln County has 271,345 acres of farmland with 88 percent of that acreage in cultivation. In South Dakota, Brookings County has 418,115 acres of farmland with 83.9 percent of that acreage in cultivation. Corn (*Zea mays*) and soybean (*Glycine max*) are the predominant crops; wheat (*Triticum aestivum*) and forage are also common. Cattle and hogs are the predominant livestock operations (USDA, 2002). Under current drainage conditions, approximately 65 percent of the acreage in Lincoln County is considered prime farmland or farmland of statewide importance. Federal regulations define

prime farmland as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is available for these uses.” (7 CFR § 657.5 (a)(1)). An additional 25 percent of the land in Lincoln County can be considered prime farmland if it is drained and/or protected from flooding. Under current drainage conditions, approximately 65 percent of the acreage in Brookings County is considered prime farmland or farmland of statewide importance. An additional 15 percent of the land in Brookings County can be considered prime farmland if it is drained or irrigated. (NRCS, 2005).

Mitigative Measures

Landowners will be compensated for the use of their land through easement payments. Additionally, 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 outside of the public roadway right-of-way. When possible, Xcel Energy will attempt to construct the transmission line before crops are planted or following harvest. The Company will compensate landowners for crop damage and soil compaction that occurs as a result of the Project. Soil compaction will be addressed by compensating the farmer to repair the ground or by using contractors to chisel-plow the site. Normally, a declining scale of payments is set up over a period of a few years.

Where possible, the Company avoids spring time construction. However, the Certificate of Need Order requires the Project to be completed by Spring 2009, which may require the Company to accelerate construction that would otherwise occur later in 2009. 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.

6.3.2 Forestry

There are no commercially harvested forested areas or woodlots within 20 miles of the Project.

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed.

6.3.3 Tourism

The Project is not located near any tourist attractions that would be impacted.

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed.

6.3.4 Mining

There are no active mining operations in the Project Area

Mitigative Measures

No impacts are anticipated and therefore no mitigative measures are proposed.

6.4 ARCHAEOLOGICAL AND HISTORIC RESOURCES

6.4.1 Previous Cultural Surveys

Relatively few cultural resources investigations have been conducted so far in the Project Area. Of the four major project surveys completed in the Minnesota, two were conducted by Braun Intertec in the late 1990s for wind

projects. These two surveys focused on lands located partly within, partly to the east and north of the current Project Area:

- A survey for the Northern States Power Company Wind Generation Resources, 110 MW Phase II Project which identified several Native American sites on uplands in the northern half of Drammen Township, two of them (21 LN 0030 and 0033) less than a mile east of the rejected Option 1 shown in Figure 3. (Ollendorf, 1997a; Ollendorf, 1997b); and
- A survey for the Northern Alternative Energy, Inc. Micon and Vestas Wind Generation Projects which identified five historic farmsteads and four Native American archaeological sites in southwestern Shaokatan Township, the latter sites (21 LN 0037, 0038, 0039, and 0040) less than a mile to the north/northeast of the rejected Option 1 corridor (Peterson, 1999a; Peterson, 1999b). (See Figure 3).

Two other studies were completed in 2005-2006. The first is a records review and a Phase I-level inventory survey completed along the 28-mile transmission corridor between the Buffalo Ridge and White substations, an area that includes the Yankee Substation (Palmer, 2006). Since the White Substation is owned by the Western Area Power Administration, a federal agency, the survey was conducted in compliance with Section 106 of the National Historic Preservation Act. The second is a 2005-2006 survey in the area was for the MinnDakota wind farm project that is currently under construction in the area to the north and west of the Yankee Substation.

The historical literature search indicates there are five known archeological resources within one mile of the Project Area in Minnesota. Table 7 identifies those cultural resources within one mile of the Minnesota portion of the Project Area.

Table 7: Cultural Resources in Minnesota Within One Mile of Project Area

County	Township	Range	Section	Site Number	Site Type	NRHP Status
Lincoln	110N	46W	30	21-LN-0053	Single item (lithic flake) in cultivated field	Unknown
Lincoln	110N	47W	24	21-LN-0069	Single item (lithic flake) in cultivated field	Unknown
Lincoln	110N	46W/47W	25/30	21-LN-0064	Single item (scaper of Knife River Flint) found in cultivated field	Unknown
Lincoln	110N	46W	31	21-LN-0065	Single item (lithic flake) in cultivated field	Unknown
Lincoln	110N	46W	31	21-LN-0052	Structural remnants and surface scatter artifacts in cultivated field	

The literature search conducted for this Application for both the Minnesota and South Dakota portions of the Project indicates that there is some potential for archeological artifacts in the Project Area, particularly near streams and rolling topography. Although cultural artifacts have been found in the area, to date they have not been significant. Therefore, there is little indication, from existing data, that the proposed undertaking would affect archaeological resources.

Mitigative Measures

Xcel Energy does not anticipate finding any cultural resources during Project design or construction. However, based on the relatively small size of archaeological sites found in the area to date, should a cultural resource be

identified in the Project Area, they are likely to be small enough that they can be easily avoided by design modification (moving the planned structure placement) or mitigated by data recovery (selective excavation).

6.5 NATURAL ENVIRONMENT

6.5.1 Air Quality

The only direct air pollution issue associated with transmission lines is ozone formation due to the corona effect. Corona consists of the breakdown or ionization of air within a few centimeters of conductors. Usually some imperfection such as a scratch on the conductor or a water droplet is necessary to cause corona. Corona can produce ozone and oxides of nitrogen in the air surrounding the conductor. Ozone also forms 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 and moisture, the same factors that increase corona discharges from transmission lines, inhibit the production of ozone. Ozone is a very reactive form of oxygen molecules and combines readily with other elements and compounds in the atmosphere. Because of its reactivity, it is relatively short-lived.

Currently, both state and federal governments have regulations regarding permissible concentrations of ozone and oxides of nitrogen. The state and national ambient air quality standards for ozone are similarly restrictive. The national standard is 0.08 parts per million (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.

Most calculations of the production and concentration of ozone assume high humidity or rain, with no reduction in the amount of ozone due to oxidation or air movement. These calculations would therefore overestimate the amount of ozone that is produced and concentrated at ground level. Studies designed to monitor the actual production of ozone under 115 kV transmission lines have generally been unable to detect any increase due to the transmission line facility.

Mitigative Measures

Xcel Energy anticipates nominal impacts to air quality; therefore, no mitigative is proposed.

6.5.2 Water Quality

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.

The surface water resources that could be affected by the construction of the Project include approximately ten small wetlands that are in line with or adjacent to the Project. In addition, the line would make eight crossings of small intermittent and perennial streams. These eight waterways are unnamed tributaries to Deer Creek and Medary Creek.

Minnesota Public Waters Inventory

The proposed Route crosses one water body listed on Minnesota DNR Public Water Inventory (“PWI”) on the Public Waters Inventory Maps. It is a large wetland that is an unnamed tributary to Medary Creek that is located just south of the point that the Route crosses 180th street. (See Appendix A, Figures A-1 and A-2). Minnesota DNR Public Waters are designated to indicate those lakes, wetlands, and watercourses over which the Minnesota DNR has regulatory jurisdiction. The statutory definition of public waters can be found

in Minnesota Statutes section 103G.005, Subdivisions 15 and 15a. A Minnesota DNR License to Cross Public Waters will be required for these crossings. There are no USFWS Waterfowl Production Areas near the Route segments.

Wetlands

The Project design will incorporate spacing of structures to span wetlands and streams. No structures will be placed in wetlands; therefore, no federal Section 404 permit will be required. No additional mitigative measures are proposed.

Floodplain

The Project is not within a mapped 100-year floodplain (FEMA, 1981). No permanent direct impacts to the surface water resources are anticipated.

Mitigative Measures

During construction there is a possibility of sediment reaching surface waters as the ground is disturbed by excavation, grading, and construction traffic. Both Deer Creek and Medary Creek flow into the Big Sioux River. The Big Sioux River in South Dakota already is impaired for Total Suspended Solids (“TSS”), so any sediment reaching these streams has the potential to adversely affect water quality in an impaired water.

Although a National Pollution Discharge Elimination System stormwater permit is not anticipated, during construction Xcel Energy will follow standard erosion control measures identified in the applicable Stormwater Best Management Practices (“BMP”) Manual such as using silt fences to minimize the potential for erosion and sedimentation into water bodies within the Project area. Xcel Energy will maintain sound water and soil conservation practices during construction and operation of the transmission line to protect topsoil and adjacent water resources and minimize soil erosion. Practices may

include containing excavated material, protecting exposed soil, and stabilizing restored soil. Once the Project is completed, it will have no impact on surface water quality. With implementation of BMPs the Project is not expected to affect water quality (*i.e.*, fecal coliform or TSS levels) within the watershed.

6.5.3 Flora

The majority of the land adjacent to the Project is in row crops, pasture, and hay lands. Row crops in the area include corn and soybeans. For a discussion on impacts to agriculture, please see Section 6.3.1.

There are four areas along the Project where the adjacent land contains native prairie species. These areas are dominated by typical prairie grasses, including big bluestem (*Andropogon gerardii*) and Indian grass (*Sorghastrum nutans*), with prairie forbs, including rough blazing star (*Liatris aspera*), prairie rose (*Rosa arkansana*), sweet coneflower (*Rudbeckia subtomentosa*), hoary vervain (*Verbena stricta*), and leadplant (*Amorpha canescens*). These are medium-quality prairie areas, with moderate plant diversity and evidence of grazing. A higher-quality tract of prairie is located approximately 1.2 miles northwest of the Project Area, along County Road 15, approximately one-half mile east of the state line.

Impacts to trees may occur at several points along the Project. These impacts will be small land, isolated to a few trees at scattered locations. The area of trees that will be impacted by the proposed Project is expected to be approximately 0.25 acre (~11,000 ft²). In general, a width of 40 feet will be cleared for the 115 kV transmission line right-of-way in areas of the Route where trees are present. See Section 6.2.2 for a summary of impacts to and methods to avoid damage to residential tree groves.

Mitigative Measures

To minimize impacts to trees in the Project Area, Xcel Energy will only remove trees located in the right-of-way for the transmission lines, or that would impact the safe operation of the facility. Trees outside the right-of-way that would need to be removed include trees that are unstable and could potentially fall into the transmission facilities. (See Land Use Section 6.2.2, above).

6.5.4 Fauna

Wildlife along the Project is primarily deer, small mammals, waterfowl, raptors, and perching birds. These are species typically observed in areas that are primarily agricultural, with limited opportunities for nesting and cover.

There is a potential for temporary displacement of wildlife during construction and the loss of small amounts of habitat from the Project. 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 be displaced only a short distance.

The primary potential impact presented by high-voltage transmission lines is potential injury and mortality to raptors, waterfowl and other bird species. Avian collisions, for example, 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.

However, unlike other nearby areas, there are no open water areas immediately adjacent to the Project, and the wetlands present are primarily small basins that provide minimal wildlife support. In areas near wetlands, Xcel Energy will evaluate mitigative measures where feasible as described below. As a result, the Project has a low potential for avian collisions.

Additionally, the electrocution of large birds, such as raptors, can be a concern 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 minor and temporary in nature. No long-term population-level effects are anticipated; therefore, no mitigative measures are proposed.

The Company 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 Company, entered into a voluntary memorandum of understanding ("MOU") with the USFWS to work together to address avian issues throughout its service territories. This includes the development of Avian Protection Plans ("APP") for each state the Company serves: Minnesota, South Dakota and North Dakota. Work is currently underway on the NSPM APP. In cooperation with the Minnesota DNR 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

For the Minnesota portion of the Project Area, the Natural Heritage Databases of the Minnesota DNR were consulted for known occurrences of sensitive species and other rare or unique natural resources. In the Minnesota section of the Route, there is one record of a Federally-endangered fish species, the Topeka shiner (*Notropis topeka*), in an unnamed tributary to Medary Creek. The Topeka shiner has a Federal Status of endangered and is listed by Minnesota as a special concern species (ranked S3). The Topeka shiner is a small minnow that inhabits small, quiet pools in clear upland creeks. There are several records of this species in the prairie streams of southwest Minnesota and the USFWS has designated many of the streams in this area as critical habitat for the Topeka Shiner.

A critical habitat stream (an unnamed tributary to Medary Creek) flows through the southern portion of the project area. The proposed Route crosses this tributary at County Road 13 (the location where the Route crosses the existing line). A wetland associated with this creek will be near the project but preliminary design options avoid any construction within the wetland. (See Figure A-1).

Outside the Project Area, the Minnesota and South Dakota Natural Heritage Database information also identified eight additional known locations of Topeka shiner populations in waters crossed by the Route. Two of these locations are near the confluence of Medary Creek itself and the unnamed tributary crossed by the Project. These populations are at least five stream miles downstream of the Project's crossing of the tributary. The other six Topeka shiner records are either upstream of the Project's crossing of the tributary, or are over eight stream miles downstream.

Other sensitive species known in the area are in a tract of native prairie approximately 1.2 miles northeast of the Project. In this area, the Minnesota DNR has records of the Ottoe skipper (*Hesperia ottoe*), a butterfly, and the slender milk-vetch (*Astragalus flexuosus*), a vascular plant. The Ottoe skipper is a Minnesota-threatened species. The slender milk-vetch is a Minnesota special concern species. The Project will have no impact on either of these species or their habitat.

Mitigative Measures

To mitigate potential impacts to the Topeka shiner, the structures will be placed so that the conductor spans all stream crossings, including the wetlands and channel associated with the unnamed tributary to Medary Creek. 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 the unnamed tributary to Medary Creek. Mitigative measures for Topeka shiners will involve construction techniques that will reduce or prevent the amount of sediment reaching adjacent waterways and may include:

- Minimizing removal of riparian vegetation. If vegetation must be removed, Xcel Energy will mulch disturbed soils and reseed or stabilize soils promptly following construction to prevent erosion of the stream bank,
- Silt fences, and
- When construction operations occur over the waterway, Xcel Energy will ensure that the operations are controlled in a manner to prevent materials from falling into the water body. If materials do fall into the

water, they will promptly be removed by hand or by equipment working from the stream banks.

There are no Project activities proposed in the area of the Ottoe skipper or the slender milk-vetch.

7.0 AGENCY CONTACTS, REQUIRED PERMITS AND APPROVALS

7.1 AGENCY CONTACTS

This section summarizes state, county, and local agency contacts to date.

Copies of the correspondence are provided in Appendix E. A list of required permits is provided in section 7.3.

7.1.1 Minnesota Department of Natural Resources

The Minnesota DNR Natural Heritage and Non-Game Research Program was contacted in February 2007 to obtain information from the Minnesota DNR Natural Heritage Database regarding sensitive species and rare or unique natural resources. The Minnesota DNR responded on February 23, 2007, by sending a set of electronic maps identifying documented sensitive species locations and other unique natural resources within the Project Area.

7.1.2 Minnesota Office of the State Archaeologist

The Minnesota State Archaeologist was provided a copy of the Phase Ia Cultural Resources Inventory for the vicinity of the Project on October 11, 2007. The report was provided for the State Archaeologist's review and concurrence with its findings. The State Archaeologist has not provided comments as of the date of Application.

7.1.3 Lincoln County, Minnesota Highway Department

The Lincoln County Highway Department was sent a letter on September 20, 2007 describing the route alternatives and explaining the purpose and need for the Project. A map illustrating the alternatives was included with the letter. Lee Amundson, Lincoln County Highway Engineer, attended the December 12, 2007 open house and stated a preference that the poles not be placed on the west or north sides of the roads to minimize problems with snow drifts.

7.1.4 Lincoln County, Minnesota Environmental Office, Division of Planning and Zoning

The Lincoln County Environmental Office was sent a letter on September 20, 2007, describing the route alternatives and explaining the purpose and need for the Project. A map illustrating the alternatives was included with the letter. The Lincoln County Environmental Office responded in a letter on October 2007, indicating that they had no comment on the Project at that time.

7.1.5 South Dakota Department of Game, Fish and Parks

The South Dakota Department of Game, Fish and Parks (“SD DGFP”) was contacted on June 12, 2007, to obtain information from the South Dakota Natural Heritage Database regarding sensitive species and rare or unique natural resources in the South Dakota portion of the Project Area. SDDGFP responded on June 26, 2007, with a list of Element Occurrence Records identifying documented sensitive species locations and other unique natural resources within the area.

7.1.6 Brookings County, South Dakota Highway Department

The Brookings County Highway Department was sent a letter on September 20, 2007, describing the Project alternatives and explaining the purpose and need for the Project. A map illustrating the route alternatives was included with the letter. As of December, 2007, no response has been received from the Brookings County Highway Department. Brookings County staff, however, have attended the public meetings and have provided informal comments.

7.2 IDENTIFICATION OF LAND OWNERS

A list of all the landowners is in Appendix E. There are 23 landowners along the proposed Route included in this Application. This list does not include landowners along the rejected route alternatives.

7.3 REQUIRED PERMITS AND APPROVALS

No federal permits or approvals are needed for the Project. Other state and local permits that may be required in addition to a Certificate of Need and Route Permit are listed in Table 8.

Table 8: Potential Required Permits

Permit	Jurisdiction
Local Approvals	
Road Crossing Permits	County, Township, City
Lands Permits	County, Township, City
Over-width Loads Permits	County, Township, City
Driveway/ Access Permits	County, Township, City
State of Minnesota Approvals	
License to Cross Public Waters	Mn DNR
State of South Dakota Approvals	
Facilities Permit	Public Utilities Commission

7.3.1 Local Approvals

Road Crossing Permits

These permits may be required to cross or occupy county, township, and city road right-of-way.

Lands Permits

These permits may be required to occupy county, township, and city lands such as park lands, watershed districts, and other properties owned by these entities.

Over-Width Loads Permits

These permits may be required to move over-width loads on county, township, or city roads.

Driveway/Access Permits

These permits may be required to construct access roads or driveways from county, township, or city roadways.

7.3.2 State of Minnesota Approvals

The Project will require a Mn DNR License to Cross Public Waters. The Minnesota DNR Division of Lands and Minerals regulates utility crossings over, under, or across any state land or public water identified on the Public Waters and Wetlands Maps. A license to cross public waters is required under Minnesota Statute, Section 84.415 and Minnesota Rules, Chapter 6135. Xcel Energy works closely with the Mn DNR on these permits and will file applications when line design is complete.

7.3.3 State of South Dakota Approvals

A high-voltage transmission line cannot be constructed without a facilities permit approved by the SDPUC. The Company anticipates submitting the companion application for the portion of the Project in South Dakota to the SDPUC in early 2008.

7.4 ACRONYMS

Following are a list of acronyms used in this Application:

ACSS	Aluminum Core Steel Supported
APP	Avian Protection Plans
BMP	Best Management Practices
BRIGO	Buffalo Ridge Incremental Generation Outlet
EMF	Electric and Magnetic Fields
G	Gauss
GIS	Geographic Information System
MW	Megawatt
MEQB	Minnesota Environmental Quality Board
FEMA	Federal Emergency Management Agency
HVTL	High Voltage Transmission Line
kV	Kilovolt

kV/m	Kilovolts Per Meter
MnDNR	Minnesota Department of Natural Resources
MOU	Memorandum Of Understanding
MPUC	Minnesota Public Utilities Commission
NERC	North American Electric Reliability Corporation
NRCS	National Resources Conservation Services
NESC	National Electric Safety Code
NIEHS	National Institute of Environmental Health Sciences
NRHP	National Register of Historic Places
NSPM	Northern States Power Company, a Minnesota corporation
PPM	PPM Energy, Inc.
ppm	Parts Per Million
PWI	Public Water Inventory
SDPUC	South Dakota Public Utilities Commission
SFD	Swan Flight Diverters
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

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9.0 DEFINITIONS

Avian	Of or relating to birds.
Breaker	Device for opening an electrical 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.

10.0 FIGURES

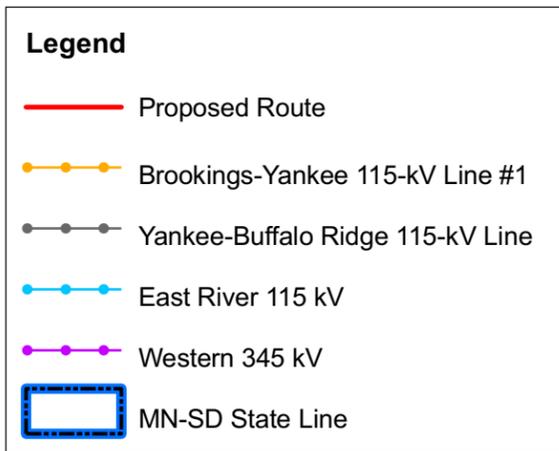
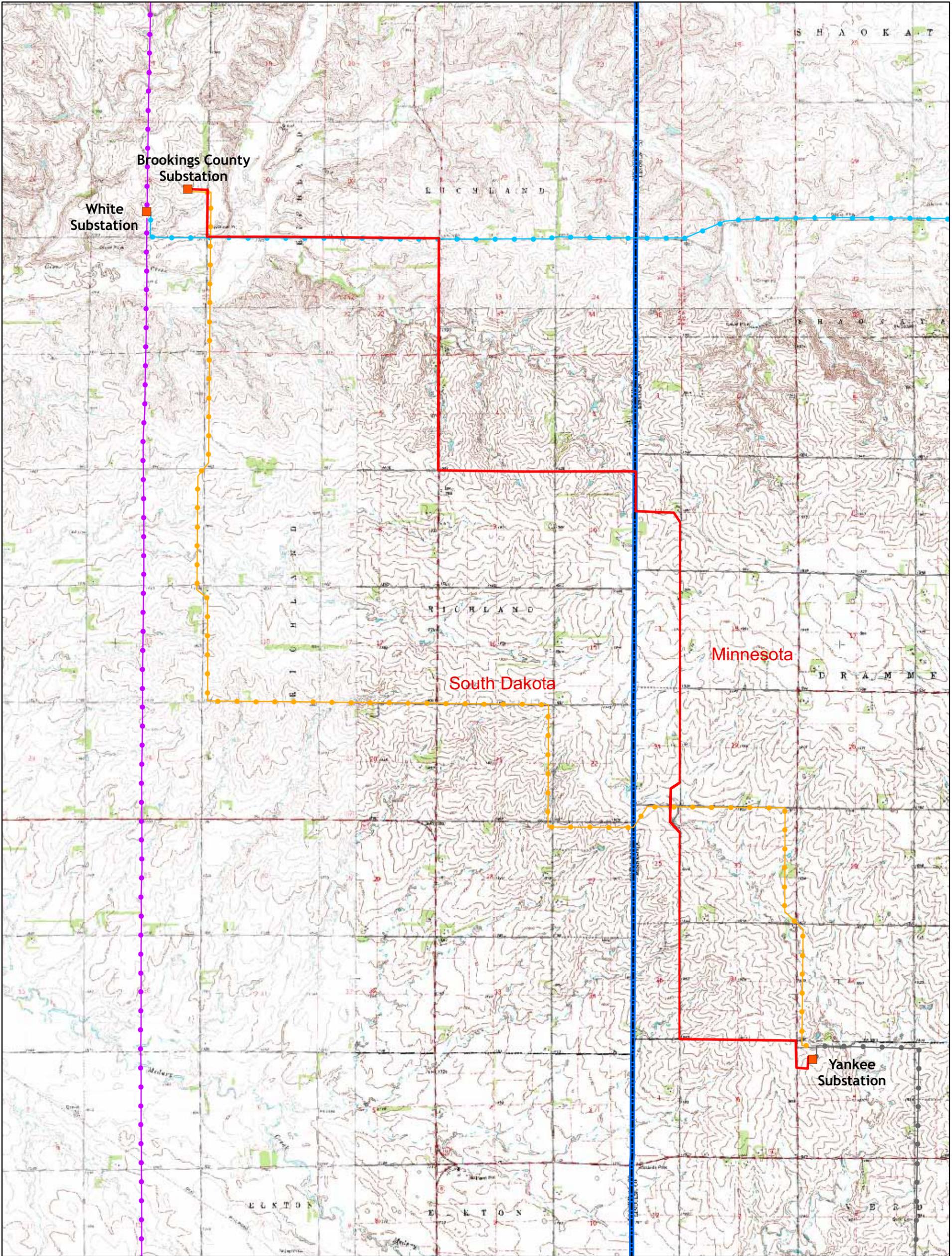
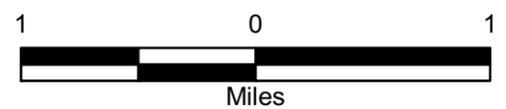
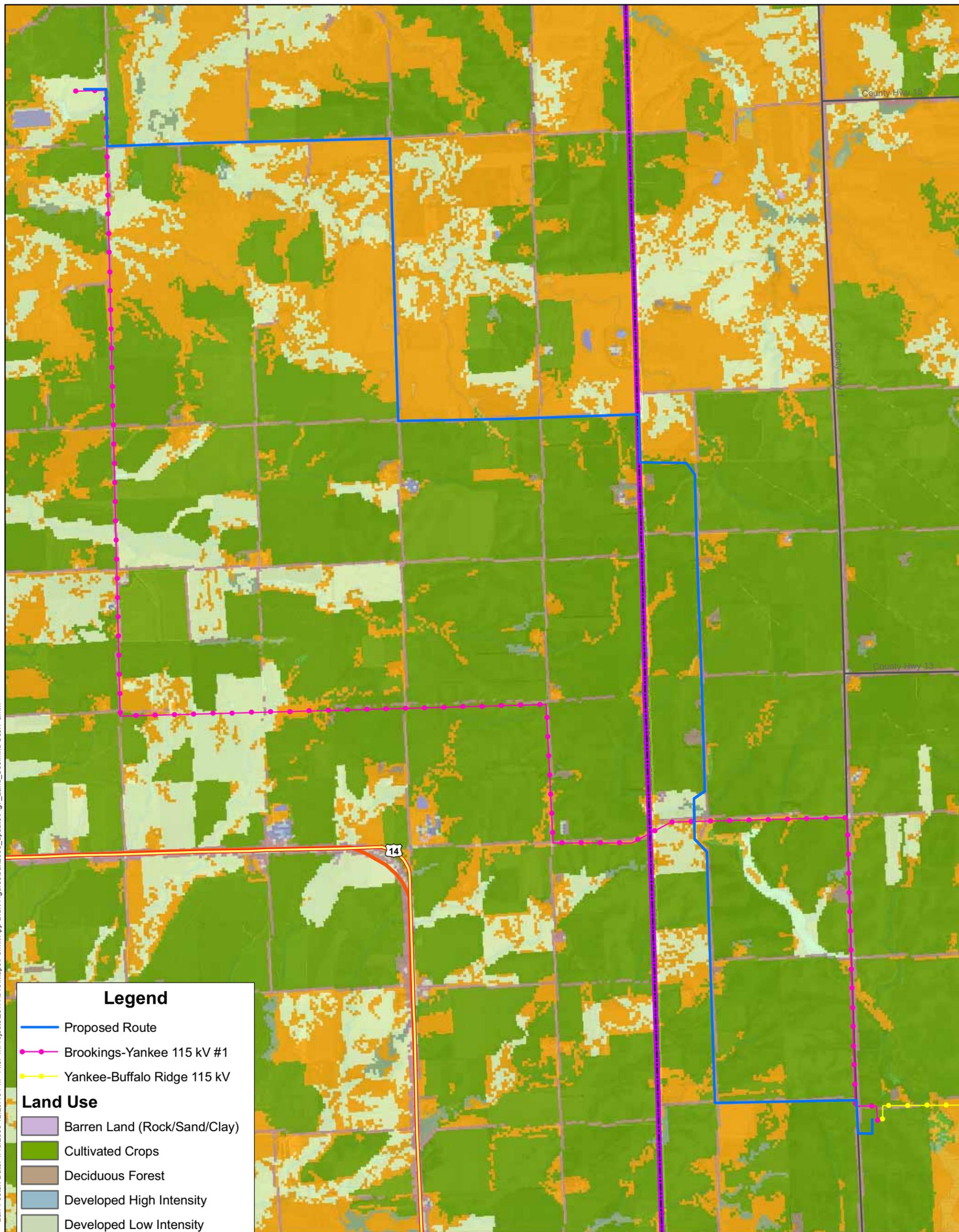


Figure 6. Topography
BRIGO Yankee-Brookings County
Transmission Line

Xcel Energy
Route Permit Application
January 2008





Legend

- Proposed Route
- Brookings-Yankee 115 kV #1
- Yankee-Buffalo Ridge 115 kV

Land Use

- Barren Land (Rock/Sand/Clay)
- Cultivated Crops
- Deciduous Forest
- Developed High Intensity
- Developed Low Intensity
- Developed Medium Intensity
- Developed Open Space
- Emergent Herbaceous Wetlands
- Evergreen Forest
- Grassland/Herbaceous
- Mixed Forest
- Open Water
- Pasture/Hay
- Shrub/Scrub
- Woody Wetlands

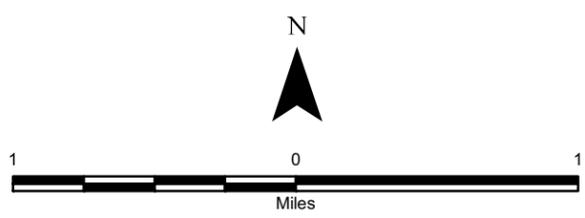
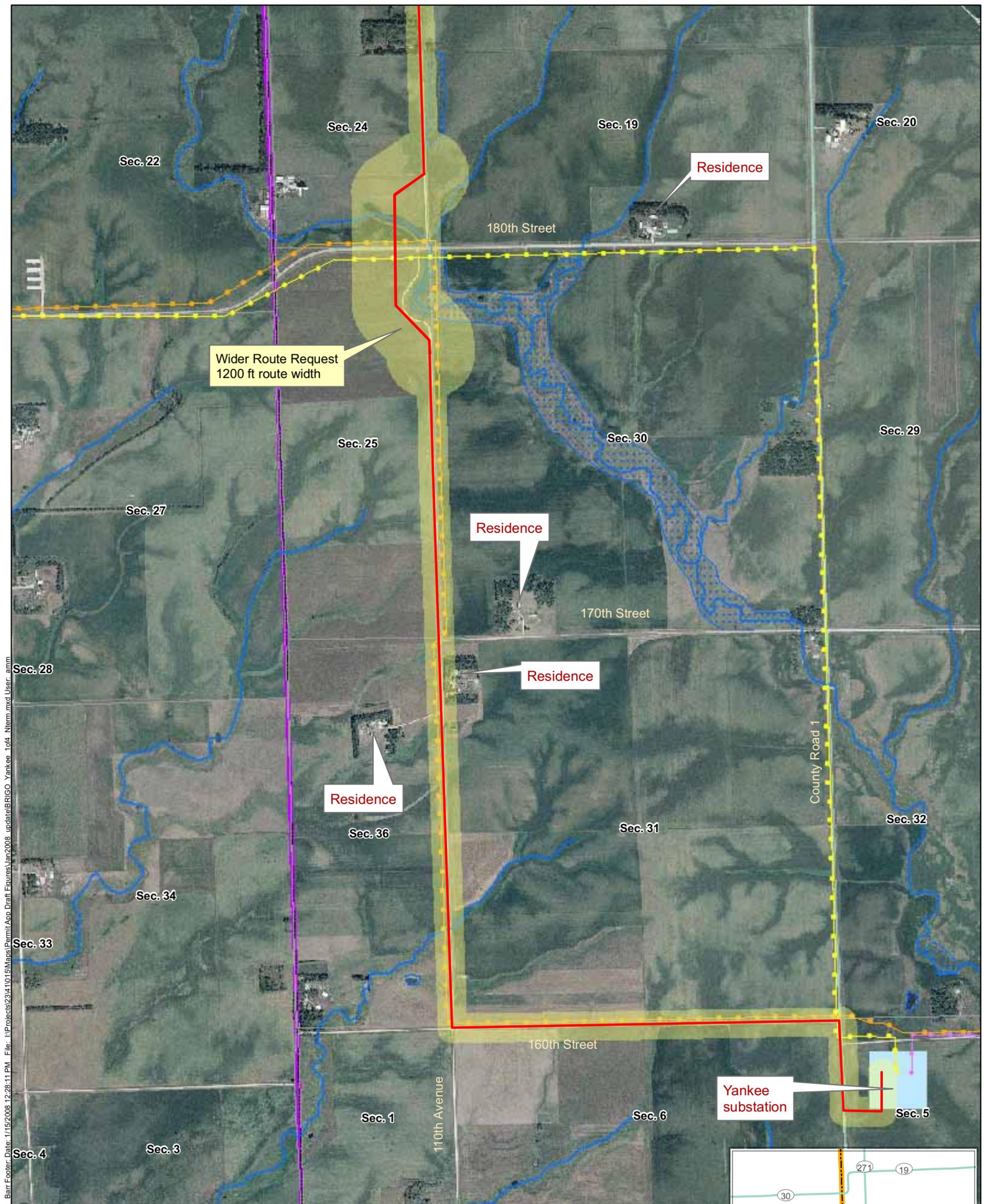


Figure 7. Land Use
BRIGO Yankee-Brookings County
Transmission Line

Xcel Energy
Route Permit Application
January 2008

Appendix A: Detailed Route Maps



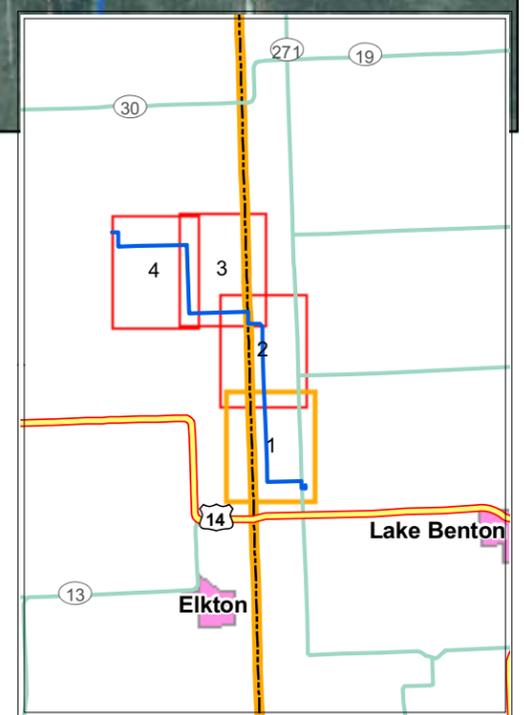
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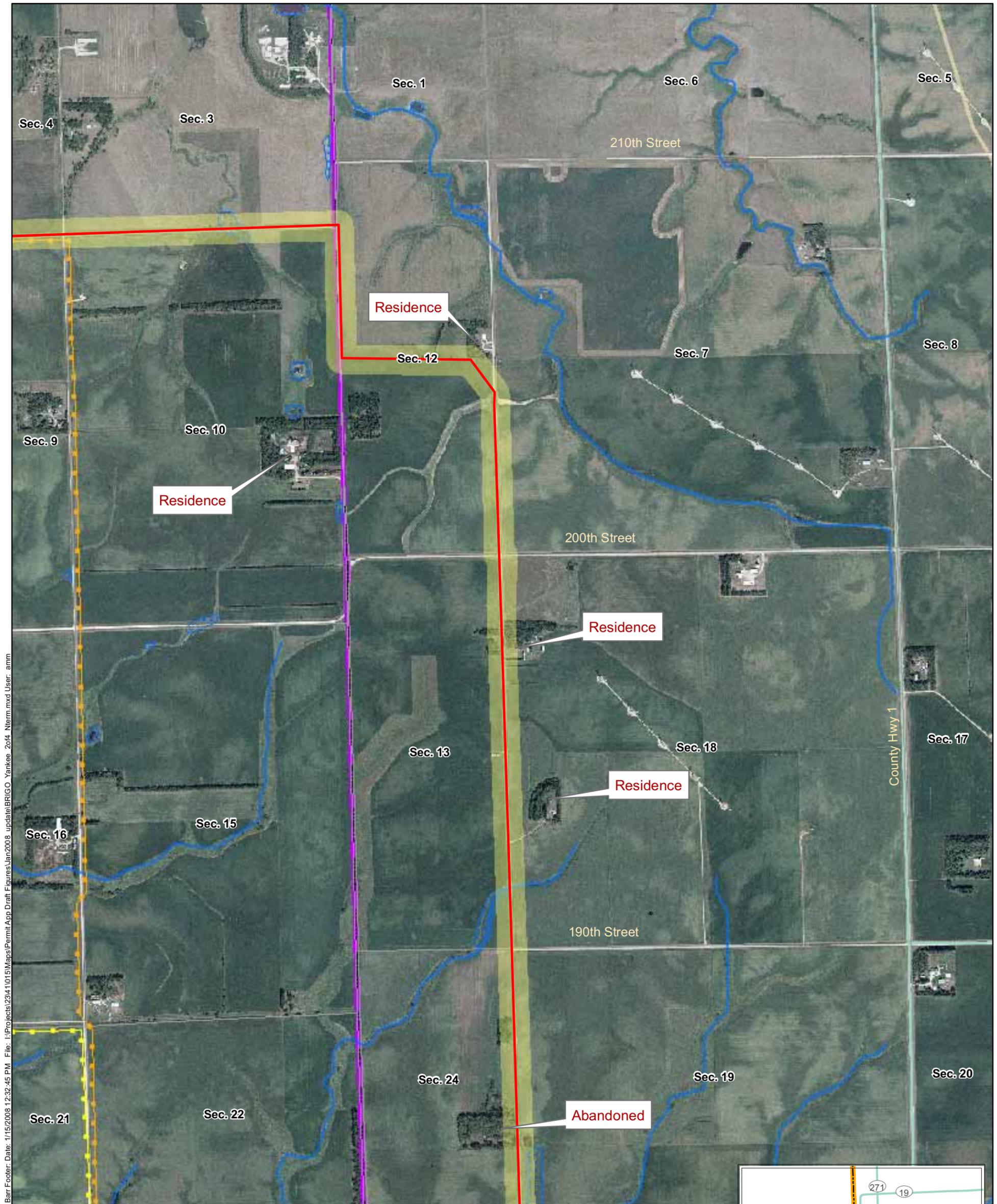
- Proposed Route Centerline
- 400' Route Width
- PPM feeder line
- Brookings-Yankee 115 kV #1
- Yankee-Buffalo Ridge 115 kV
- Rivers & Streams
- Wetlands
- State Line



Figure A-2 - Detailed Route Map
Map 1 of 4
 BRIGO Yankee-Brookings County
 Transmission Line

Xcel Energy
 Route Permit Application
 January 2008





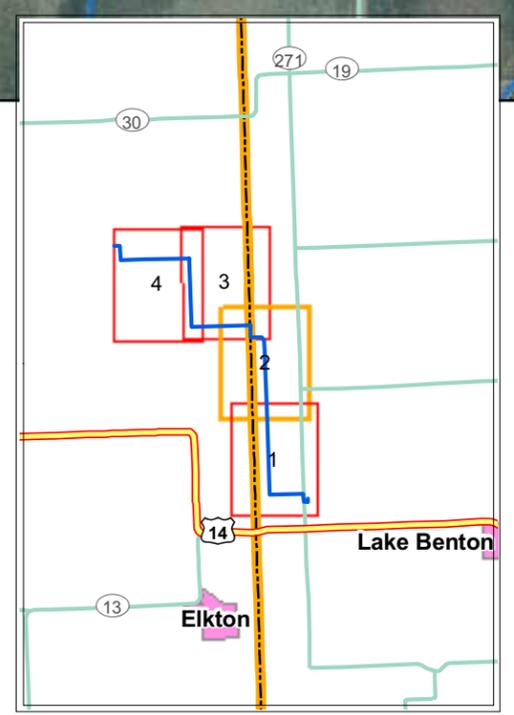
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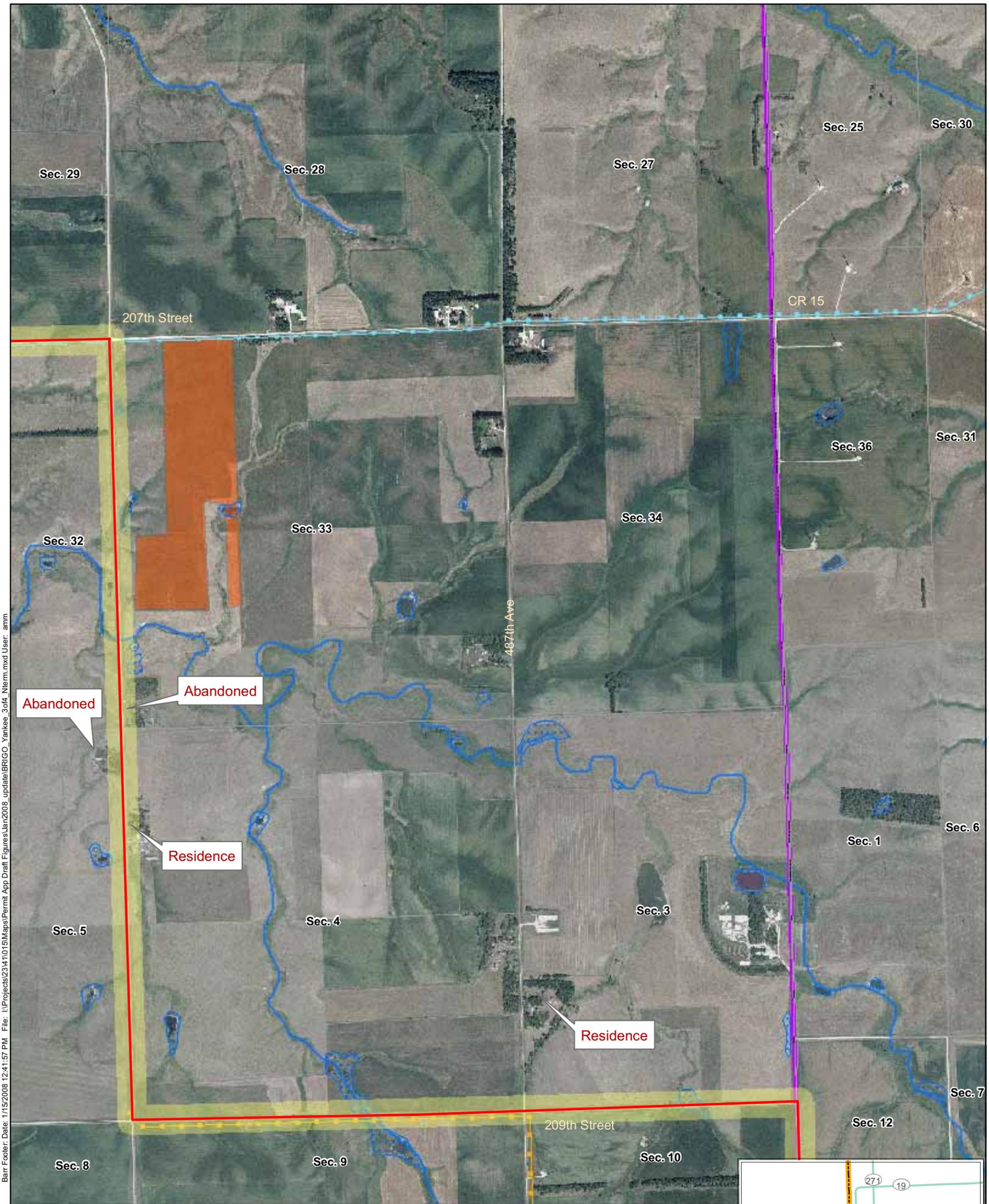
- Proposed Route Centerline
- 400' Route Width
- PPM feeder line
- Rivers & Streams
- Wetlands
- State Line
- Brookings-Yankee 115 kV #1
- Yankee-Buffalo Ridge 115 kV



Figure A-3. - Detailed Route Map
Map 2 of 4
 BRIGO Yankee-Brookings County
 Transmission Line

Xcel Energy
 Route Permit Application
 January 2008

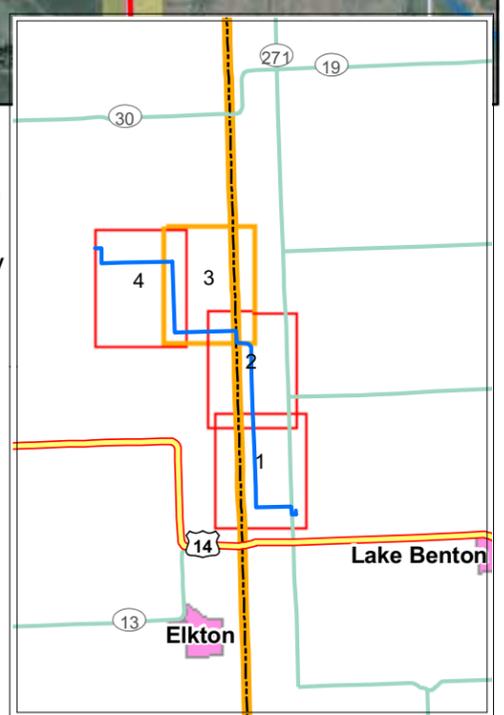


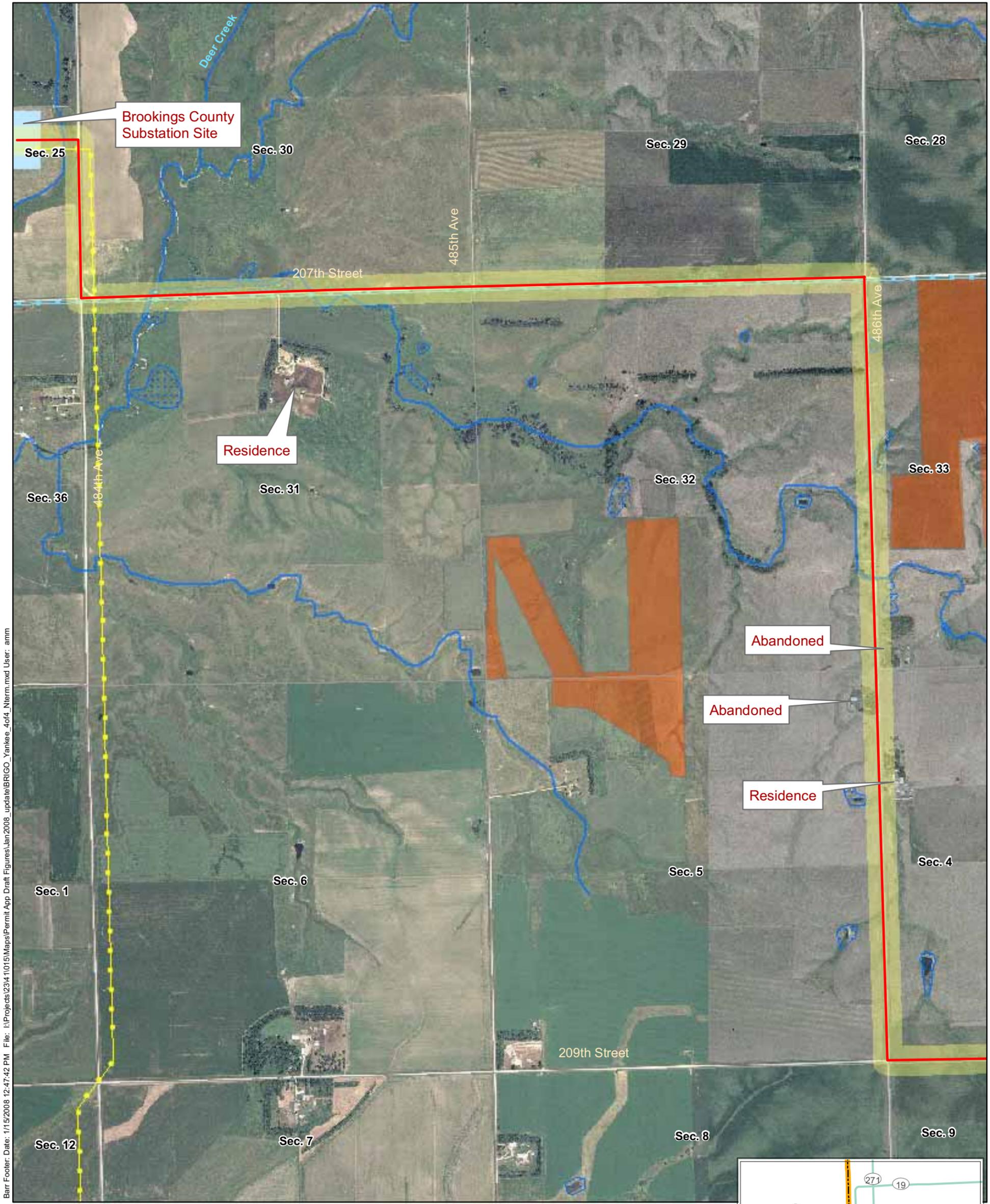


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- Proposed Route Centerline
- 400' Route Width
- Existing East River 115 kV
- PPM feeder line
- Rivers & Streams
- Wetlands
- SD Walk-in Areas
- State Line

Figure A-4. Detailed Route Map
Map 3 of 4
 BRIGO Yankee-Brookings County
 Transmission Line
 Xcel Energy
 Route Permit Application
 January 2008





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- Proposed Route Centerline
- 400' Route Width
- Existing East River 115 kV
- Existing Yankee-Brookings 115 kV #1
- Streams
- SD Walk-in Areas
- Wetlands

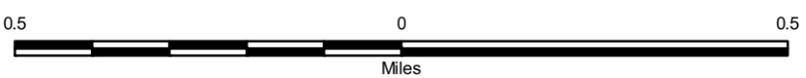
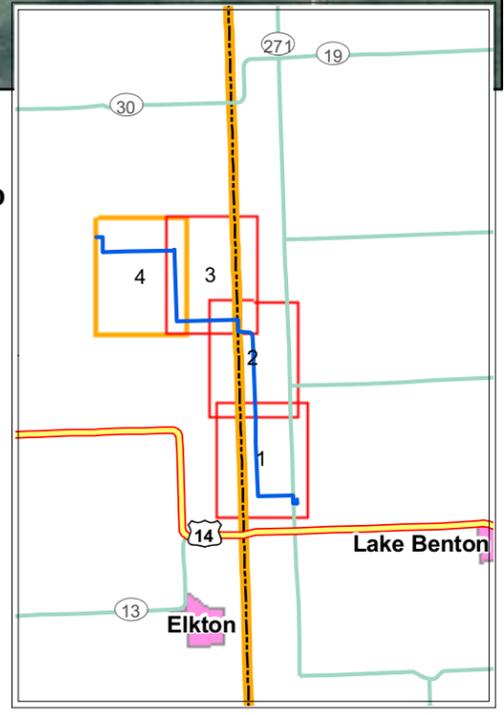


Figure A-5 - Detailed Route Map
Map 4 of 4
 Yankee-Brookings County
 115 kV Transmission Line
 Xcel Energy
 Route Permit Application
 January 2008



Appendix B: Commission Certificate of Need Order

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

LeRoy Koppendraye
David C. Boyd
Marshall Johnson
Thomas Pugh
Phyllis A. Reha

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Application for Certificates
of Need for Three 115 kV Transmission Lines
in Southwestern Minnesota

ISSUE DATE: September 14, 2007

DOCKET NO. E-002/CN-06-154

ORDER GRANTING CERTIFICATES OF
NEED

PROCEDURAL HISTORY

I. Initial Proceedings

In 2005 Northern States Power Company d/b/a Xcel Energy (Xcel) informed the Commission of its proposal to build three 115 kilovolt (kV) transmission lines in southwestern Minnesota.¹ The Lyon County line would extend from the Lake Yankton Substation near Balaton, Minnesota, to a new substation near Marshall, Minnesota. The Murray/Nobles Counties line would extend from the Nobles County Substation northwest of Worthington, Minnesota, to the Fenton Substation near Chandler, Minnesota. And the Lincoln County line would extend from the Yankee Substation south of Hendricks, Minnesota, to the Minnesota/South Dakota boarder, meeting a new line extending from the Brookings County Substation near Brookings, South Dakota. Xcel's proposal would also entail modifying various electric substations in the region.

On May 23, 2006, Xcel asked to be exempted from providing certain information normally required for an application for a Certificate of Need. The Commission granted Xcel's request with conditions.²

On December 4, 2006, Xcel applied for Certificates of Need for the three 115 kV lines; Xcel supplemented that application on December 28. On February 7, 2007, the Commission accepted

¹ See *In the Matter of the 2005 Minnesota Biennial Transmission Filing*, Docket No. E-999/TL-05-1739, Xcel's filing (Issue No. 2005 SW-N2, the Buffalo Ridge Incremental Generator Outlet additions).

² This docket, ORDER GRANTING EXEMPTIONS (July 24, 2007).

the application as substantially complete contingent upon the filing of certain additional data,³ and provided for an Administrative Law Judge (ALJ) to develop the factual record required to determine whether the proposed transmission lines are needed.⁴

On February 12, 2007, Xcel filed the additional data required by the Commission.

On February 21 and 22, 2007, the Minnesota Department of Commerce (the Department) convened public meetings to address the scope of the analysis it would conduct in preparing the required Environmental Report for Xcel's proposal as required by Minnesota Rules, part 7849.0230. The Department issued its Environmental Report Scoping Decision on March 22.

On April 24, 2007, Xcel and the Department filed testimony, including the Department's Environmental Report.

On May 16 and 17, 2007, ALJ Beverly Jones Heydinger convened hearings to receive public comment in Slayton, Ivanhoe and Marshall, Minnesota. On May 22, the ALJ convened evidentiary hearings at the Commission's offices in St. Paul, Minnesota. Xcel subsequently filed proposed Findings of Fact, Conclusions of Law and Recommendation for all parties' consideration; the Department stated that it had no objection to the document's substance.

On June 21, 2007, the ALJ filed her own Findings of Fact, Conclusions of Law and Recommendation (ALJ's Report). No one took exception to the ALJ's Report.

The Commission met on August 23, 2007 to consider this matter. At that hearing Xcel stated that if the Commission would grant the necessary Certificates of Need for its proposed transmission lines, Xcel would promptly file applications for route permits and would seek to make its three proposed transmission lines operational by the Spring of 2009.

II. The Parties and their Representatives

Xcel was represented by James P. Johnson, Xcel Energy Services Inc., 414 Nicollet Mall, 5th Floor, Minneapolis, Minnesota 55401, and by Michael C. Krikava and Lisa M. Agrimonti, Briggs and Morgan, P.A., 2200 IDS Center, 80 South 8th Street, Minneapolis, Minnesota 55402.

The Department was represented by Julia E. Anderson and Valerie M. Means, Assistant Attorneys General, 445 Minnesota Street, Suite 1400, St. Paul, Minnesota 55101.

³ ORDER ACCEPTING CERTIFICATE OF NEED APPLICATION AS SUBSTANTIALLY COMPLETE, CONTINGENT ON SUBMISSION OF ADDITIONAL DATA (February 7, 2007).

⁴ NOTICE AND ORDER FOR HEARING (February 7, 2007).

FINDINGS AND CONCLUSIONS

I. Xcel's Proposed Project

In 2003, the Commission granted Xcel Certificates of Need to construct four high-voltage transmission lines that, coupled with the existing system, would achieve up to 825 megawatts (MW) of generation outlet transmission capacity in southwestern Minnesota.⁵

Shortly thereafter, Xcel states, it initiated the Buffalo Ridge Incremental Generation Outlet (BRIGO) Study to determine what additional system improvements would be needed to meet growing demand for wind generation development in the Buffalo Ridge area. Xcel states that demand for transmission capacity in the region will warrant the eventual construction of 345 kV transmission lines. Given the delay involved in designing, permitting and constructing such large lines, however, Xcel began exploring cost-effective interim remedies.

Xcel argues that the three 115 kV lines proposed in this docket should be undertaken as an interim step to provide a few hundred megawatts of additional generation outlet capacity until the higher voltage projects can be developed. In addition, Xcel states that the Lake Yankton/Marshall line would help meet a forecasted growth in demand for electricity in the City of Marshall and enhance the transmission system's ability to supply all the electricity demanded under a variety of circumstances.

II. The Legal Standard

Anyone seeking to build in Minnesota more than 10 miles of a high-voltage transmission line with a capacity of 100 kV or more⁶ must first obtain a Certificate of Need from the Commission demonstrating that the line is needed.⁷ Because each of Xcel's proposed 115 kV lines exceeds these thresholds, Xcel will require a Certificate of Need for each line.

Minnesota Statutes § 216B.243 lists factors the Commission must consider when determining whether a line is needed. For example, the Commission must determine whether an applicant could meet the demand for electricity more cost-effectively through energy conservation and load-management measures,⁸ and whether the applicant has given adequate consideration to obtaining energy from renewably sources.⁹ Minnesota Rules Chapter 7849 codifies many of these factors.

⁵ *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificates of Need for Four Large High Voltage Transmission Line Projects in Southwestern Minnesota*, Docket No. E-002/CN-01-1958, ORDER GRANTING CERTIFICATES OF NEED SUBJECT TO CONDITIONS (March 11, 2003).

⁶ Minn. Stat. § 216B.2421, subd. 2(3).

⁷ Minn. Stat. § 216B.243.

⁸ Minn. Stat. § 216B.243, subd. 3.

⁹ Minn. Stat. § 216B.243, subd. 3a.

Those rules are detailed, but in brief they require the Commission to consider the following:

- The probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states.
- A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record.
- By a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.
- The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.¹⁰

As noted above, Minnesota Rules part 7849.0230 provides for the Commission to receive an Environmental Report to aid in its analysis.

Finally, when evaluating the need for a proposed facility the Commission must consider opportunities for installing small, efficient distributed generators that produce few emissions.¹¹

III. Analysis of Need

Xcel, the Department and the ALJ discuss the application in light of the certificate of need criteria. All three conclude that the proposed facilities are needed; their arguments are summarized below.

- A. Xcel has demonstrated that the need for the proposed facilities cannot be met more cost-effectively through energy conservation and load-management measures.**

Xcel argues that efforts to control consumer demand for electricity will not obviate the need for any of the three proposed transmission lines. The City of Marshall has such programs in place, and additional programs are unlikely to make enough difference. Xcel denies that the needs for its proposed lines are driven by activities promoting the consumption of electricity. Moreover, no amount of programs to control demand would alter Xcel's statutory obligations under the RES to secure additional sources of wind power.

The Department supports Xcel's conclusions.

¹⁰ Minn. Rules 7849.0120.

¹¹ Minn. Stat. § 216B.2426, citing the definition of "distributed generation" at § 216B.169, subd. 1(c).

Based on the foregoing analysis, the ALJ concludes that Xcel has demonstrated that the energy conservation and load-management measures cannot displace the need for the proposed facilities. ALJ's Report, Findings of Fact 89 - 91.

B. Xcel's proposal demonstrates due regard for the goal of obtaining electricity from renewable sources.

Xcel claims that its proposal is designed to permit electricity generated by wind power to flow to customers.

Xcel identifies five wind-related factors affecting the need for its proposed transmission lines. First, the newly-enacted Renewable Energy Standard (RES)¹² will require Xcel by 2020 to acquire 30 percent of the amount of electricity it sells at retail from qualified renewable sources, including 25 percent from wind power. Second, the Commission-prescribed resource planning process identifies wind power as the most cost-effective source of renewable generation. Third, developers of Community-Based Energy Development programs have already asked Xcel for more transmission capacity in the Buffalo Ridge area than Xcel can currently accommodate. Fourth, developers of wind power generators have asked the Midwest Independent Transmission System Operator, Inc., for permission to connect more wind-powered generation to the transmission grid in the Buffalo Ridge area than the grid can accommodate. Finally, no other part of Minnesota provides a better location for wind-powered generators than the Buffalo Ridge. Xcel cites all these dynamics to support the conclusion that its proposals are driven in large part by a desire to facilitate the use of electricity from renewable sources.

The Department supports Xcel's conclusions.

Based on the foregoing analysis, the ALJ concludes that Xcel's proposal demonstrates due regard for the goal of obtaining electricity from renewable sources. ALJ's Report, Findings of Fact 71 - 77.

C. Withholding the requested Certificates of Need would likely harm the future adequacy, reliability and efficiency of the energy supply.

Xcel argues that the Lake Yankton/Marshall line is needed to ensure that electric service around the growing City of Marshall, Minnesota, continues to meet the reliability standards established by the North American Electric Reliability Corporation (NERC).¹³

While Xcel acknowledges that it offers its proposal merely as an interim measure, Xcel emphasizes that it remains mindful of its duty to make efficient use of resources. In particular, Xcel argues that the wind on Buffalo Ridge is the best source of windpower in the region, yet Xcel must curtail the operation of wind generators whenever their combined output exceeds the capacity of the region's transmission lines. Timely addition of transmission capacity would help make better use of these wind resources.

¹² Minn. Stat. § 216B.1691; see Laws 2007, Chap. 3, § 1.

¹³ Pursuant to the authority of the Energy Policy Act of 2005 (Pub.L. 109-058), the Federal Energy Regulatory Commission designated NERC the nation's "Energy Reliability Organization."

Ultimately Xcel argues that it requires Certificates of Need in order to fulfill its duties to provide reliable electric service and meet the new statutory obligations. While Xcel could pursue – and is pursuing – modifications to its plant that do not require a Certificate of Need in order to enhance transmission capacity, these modifications will not obviate the need for larger changes.

The Department supports Xcel's conclusions.

Based on the foregoing analysis, the ALJ concludes that denying Xcel Certificates of Need to build the proposed transmission lines would likely harm the adequacy, reliability and/or efficiency of the energy supply. ALJ's Report, Findings of Fact 67 - 96.

D. The preponderance of the record evidence indicates that the proposed alternative is the most reasonable and prudent alternative.

The BRIGO study addresses more than a dozen alternatives for increasing the capacity for exporting electricity from Buffalo Ridge while also making electric service to Marshall more reliable. Alternatives under consideration included building a direct-current line out of Buffalo Ridge, modifying existing facilities, stringing additional transmission lines on existing towers, building an underground transmission line, and building new electric generators to offset the need for power from Buffalo Ridge. Based on this analysis Xcel concludes that the three proposed transmission lines are the best alternative based on factors such as capital costs, system electrical losses, technical performance and construction time.

Regarding timing, Xcel argues that new facilities can be built more quickly than existing facilities can be upgraded. Xcel would need to remove existing facilities from service before modifying them. Yet the very constraints that prompt the need for new lines also discourage Xcel from removing more than one line from service at a time. These same constraints do not apply to the construction of new facilities.

In many respects, Xcel argues, the alternatives explored in the BRIGO Study have comparable benefits. They tended to have similar environmental effects. Each alternative would produce some economic development in the area, creating new employment and tax revenues. And each of the proposed transmission line alternatives would produce similar reliability: According to Xcel, transmission lines tend to be available more than 99% of the time and with regular maintenance can last almost indefinitely.

While the Department finds fault in Xcel's analysis of electrical system losses, the Department's own analysis supports the view that Xcel's favored alternative would produce the least system losses. Ultimately the Department concludes that the record supports Xcel's conclusion that the proposed 115 kV transmission lines represent the most reasonable and prudent alternative.

Based on the analysis summarized above, the ALJ concludes that the preponderance of the record evidence indicates that the proposed alternative is the most reasonable and prudent alternative. ALJ Report, Findings of Fact 97-122.

E. The preponderance of the record evidence indicates that the proposed alternative will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.

Much of state policy reflects the principle that wind-powered electricity can help displace reliance on electricity from sources with more harmful effects.¹⁴ But Xcel argues that this principle can be implemented only if the electricity can reach consumers. By enabling wind power to reach those who need it, the proposed facilities would benefit society in a manner that promotes the protection of the natural environment and human health.

Additionally, given the harms that would arise from a power failure in Marshall, Xcel argues that adding a transmission line to make electric service more reliable would benefit society in a manner that promotes the socioeconomic environment, including human health.

Whether or not the proposed facilities would induce future development in Marshall, Xcel provides evidence that the facilities would enable the development of additional wind-powered generators along Buffalo Ridge. The record shows that wind power developers have already contracted to provide more than 900 MW of power, which is more than Xcel says the current transmission system can reliably support. Adding transmission capacity would facilitate further development.

The Department agrees with Xcel's analysis. And based on the analysis summarized above, the ALJ concludes that the preponderance of the record evidence indicates that the proposed alternative will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health. ALJ Report, Findings of Fact 123-131.

F. The record does not demonstrate that the design, construction, or operation of the proposed facilities would fail to comply with any applicable jurisdiction's policies, rules, or regulations.

Xcel commits to complying with all relevant policies, rules and regulations from the federal, state and local governments, and even lists the regulatory requirements of which it is aware. The ALJ finds no evidence that any aspect of Xcel's proposal would conflict with any applicable legal standard. ALJ's Report, Findings of Fact 132.

G. Requirements for environmental review have been fulfilled, and no alternative proposals appear to produce better environmental outcomes.

Xcel's application contains a discussion of environmental consequences of its proposal and all considered alternatives, including the alternative not to build any new large energy facilities. In its Environmental Report, the Department concludes that –

¹⁴ Minn. Stat. §§ 216B.1612, 216B.169, 216B.1691, 216B.2423. See also *In the Matter of the Application of Northern State's Power Company for Approval of its 1998 Resource Plan*, Docket No. E-002/RP-98-32, ORDER MODIFYING RESOURCE PLAN, REQUIRING ADDITIONAL WIND GENERATION, REQUIRING FURTHER FINDINGS, AND SETTING STANDARDS FOR NEXT RESOURCE PLAN (February 17, 1999).

... none of the alternatives considered have significantly fewer human, environmental or economic impacts than the proposed BRIGO Project. The existing lines or alternative corridor options appear to have similar or slightly greater environmental impacts, higher energy losses, and higher costs than the BRIGO Project. The non-build, conservation, and generation alternatives do not meet the need to create approximately 350 MW of additional transmission system capacity in the Buffalo Ridge region and resolve reliability issues in Marshall.¹⁵

The ALJ concludes that the Environmental Report fulfills all of the requirements established in the Scoping Decision of March 22, 2007, and reasonably supports the granting the Certificates of Need. ALJ's Report, Conclusion 9.

H. The proposed facilities would increase opportunities for installing small, efficient distributed generators that produce few emissions.

The ALJ concludes that by expanding transmission capacity, Xcel's proposal would increase opportunities for installing small, efficient distributed generators that produce few emissions. ALJ's Report, Conclusion 10.

I. Summary

Based on many of the facts discussed above, the ALJ concludes as follows:

134. The Project will ensure safe and reliable service to [Marshall]'s customers during peak periods. The Project will also provide transmission facilities that can be used by renewable-based generation. That energy can then be used by electric utilities to meet their load serving obligations in the State.

135. The need for the Project cannot be avoided through the use of energy conservation programs.

136. The Project will help meet regional energy needs, particularly the need for increased use of renewable energy.

137. The Project has not been motivated by any promotional activities. Rather, it is driven by the demand for additional transmission capacity for renewable generation and electrical system reliability needs.

138. The Project will increase reliability of the energy supply in Marshall and increase the supply of renewables-based generation available to Minnesota load serving entities.

139. The Project cannot be avoided through upgrading existing facilities, load-management programs or distributed generation.

¹⁵ Environmental Report (April 24, 2007) at 3.

140. The Project will comply with the policies, rules and regulations of applicable state and federal agencies and local governments.

141. The Project will improve electric service reliability for [Marshall] and its retail customers and for wind generation within the Buffalo Ridge region, improving the robustness of the transmission system.

142. The Project also meets the requirements of Minn. Stat. § 216B.243, subd. 3(10) [regarding Xcel's compliance with the Renewable Energy Standards]. The Project will further Xcel Energy's and other utilities' ability to meet the RES with additional wind generation from the Buffalo Ridge area.

ALJ's Report, Findings of Fact 134-142 (footnotes omitted). Finding that Xcel has satisfied the criteria set forth at Minnesota Statutes § 216B.243 and Minnesota Rules part 7849.0120, the ALJ recommends granting Xcel's application for Certificates of Need. ALJ's Report, Recommendations 13 - 15.

IV. Commission Action

The Commission has examined the full record in this case, and its reading of the evidence leads to the same findings and conclusion reached by the ALJ. The Commission concurs in and adopts the ALJ's findings and conclusions.

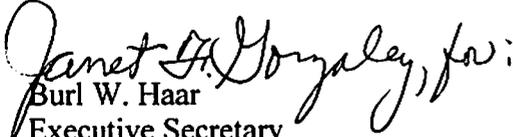
Having secured Certificates of Need, Xcel will now need to obtain permits identifying the specific routes where Xcel may build the transmission lines. To ensure that Xcel makes timely progress toward completing building these lines, the Commission will direct Xcel to file a status report identifying the authorities from whom Xcel will seek route permits. Additionally, the Commission will direct Xcel to file applications for route permits no later than January 2008, and to take the necessary steps to bring the new lines into service by Spring 2009.

ORDER

1. The Commission accepts and adopts the Findings of Fact, Conclusions of Law and Recommendation of the Administrative Law Judge, including the conclusion that the Environmental Report of April 24, 2007, fulfills the requirements of the Department's Scoping Decision of March 22, 2007.
2. The Commission grants a Certificate of Need for the proposed 115 kV transmission line in Lyon County between Lake Yankton Substation near Balaton, Minnesota to a new substation near Marshall, Minnesota.
3. The Commission grants a Certificate of Need for the proposed 115 kV line in Murray and Nobles Counties between Fenton Substation near Chandler, Minnesota and Nobles County Substation northwest of Worthington, Minnesota.

4. The Commission grants a Certificate of Need for the proposed 115 kV transmission line in Lincoln County between Yankee Substation south of Hendricks, Minnesota and the Minnesota/South Dakota border near Brookings County Substation near Brookings, South Dakota.
5. Xcel shall file a status report identifying the authorities from whom Xcel will seek route permits. Xcel shall file applications for route permits no later than January 2008, and shall take the necessary steps to bring the new lines into service by Spring 2009.
6. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION


Burl W. Haar
Executive Secretary

(SEAL)

This document can be made available in alternative formats (i.e. large print or audio tape) by calling (651) 201-2202 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1 (800) 627-3529 or by dialing 711.

STATE OF MINNESOTA)
)SS
COUNTY OF RAMSEY)

AFFIDAVIT OF SERVICE

I, Margie DeLaHunt, being first duly sworn, deposes and says:

That on the 14th day of September, 2007 she served the attached
ORDER GRANTING CERTIFICATES OF NEED.

MNPUC Docket Number: E-002/CN-06-154

- XX By depositing in the United States Mail at the City of St. Paul, a true and correct copy thereof, properly enveloped with postage prepaid
- XX By personal service
- XX By inter-office mail

to all persons at the addresses indicated below or on the attached list:

- Commissioners
- Carol Casebolt
- Peter Brown
- Eric Witte
- Marcia Johnson
- Kate Kahlert
- AG
- Bob Cupit
- David Jacobson
- Bret Eknes
- Mary Swoboda
- Jessie Schmoker
- Sharon Ferguson - DOC
- Julia Anderson - OAG
- Curt Nelson - OAG

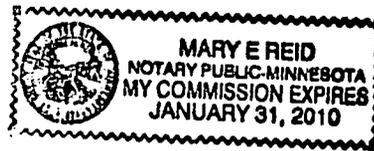
Margie DeLaHunt

Subscribed and sworn to before me,

a notary public, this 14th day of

Sept., 2007

Mary E. Reid
Notary Public



10:
MN PUC

James Alders
Xcel Energy
7th Floor
414 Nicollet Mall
Minneapolis MN 55401-1993

LeRoy and Myrna Pedersen
28502 - 395th Street
Renville MN 56283

Burl W. Haar (0+15)
MN Public Utilities Commission
Suite 350
121 East Seventh Place
St. Paul MN 55101-2147

Annette Bair
Southwest Regional Development Comm.
Suite 1
2401 Broadway Avenue
Slayton MN 56172

John C. Reinhardt
Laura A. Reinhardt
3552 26Th Avenue South
Minneapolis MN 55406

20:
Dept. of Commerce

Jean Christoffels
Murray County Planning and Zoning
2500 28th Street
P.O. Box 57
Slayton MN 56172

Marilyn Remer
Mn/DOT
Office of Technical Support
395 John Ireland Boulevard
St. Paul MN 55155-1899

Sharon Ferguson (4)
MN Department Of Commerce
Suite 500
85 7th Place East
St. Paul MN 55101-2198

Christopher Clark
Xcel Energy
4th Floor
414 Nicollet Mall
Minneapolis MN 55401-1993

Brad Roos
Marshall Municipal Utilities
113 4th Street South
Marshall MN 56258

30:
Inter-Office Mail

Elizabeth Goodpaster
Minnesota Center for
Environmental Advocacy
26 E. Exchange Street, #206
St. Paul MN 55101

Matthew J. Schuerger P.E.
Energy Systems Consulting Services, LLC
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St. Paul MN 55116

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St. Paul MN 55101-2131

Beverly Heydinger
Office Of Administrative Hearings
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Minneapolis MN 55401-2138

Janet Shaddix Elling
Shaddix And Associates
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Bloomington MN 55431

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1400 BRM Tower
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5th Floor
414 Nicollet Mall, 5th Flr
Minneapolis MN 55401-1993

Mrg Simon
Missouri River Energy Services
P.O. Box 88920
Sioux Falls SD 57109-8920

Curt Nelson
OAG-RUD
900 BRM Tower
445 Minnesota Street
St. Paul MN 55101-2130

Michael C. Krikava
Briggs And Morgan, P.A.
2200 IDS Center
80 South 8th Street
Minneapolis MN 55402

Beth H. Soholt
Wind on the Wires
Suite 203
1619 Dayton Avenue
St. Paul MN 55104-6206

40:
Regular Postal Mail

David R. Moeller
Minnesota Power
30 West Superior Street
Duluth MN 55802-2093

Juliann Sturm
6090 Pagenkopf Road
Maple Plain MN 55359

Lisa M. Agrimonti
Briggs And Morgan, P.A.
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80 South 8th Street
Minneapolis MN 55402

Robert Olsen
Lincoln County Environmental Office
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PO Box 29
Ivanhoe MN 56142

James Swanson
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501 South Victory Drive
Mankato MN 56001-5302

**Mukhtar Thakur
Mn/DOT
Office of Technical Support
395 John Ireland Blvd.
St. Paul MN 55155-1899**

**SaGonna Thompson
Xcel Energy
7th Floor
414 Nicollet Mall
Minneapolis MN 55401-1993**

**Dave Trooien
Mn/DOT District 8
Willmar MN 56281**

**John Wachtler
Barr Engineering Co.
4700 West 77th Street
Minneapolis MN 55435-4803**

**Harold Wall
301 2nd Street East
Balaton MN 56115**

**Brian Zavesky
Missouri River Energy Services
P.O. Box 88920
3724 West Avera Drive
Sioux Falls SD 57108**

Appendix C: Commission Notice



414 Nicollet Mall
Minneapolis, Minnesota 55401-1993

December 18, 2007

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

Re: Notification of Intent to File Application Pursuant to Alternative Permitting Process

For a proposed 115 kV transmission line connecting the Yankee Substation to the Brookings County Substation (one of three 115 kV Transmission lines under Docket No. E002/CN-06-154)

Dear Dr. Haar:

In accordance with Minnesota Rule 7849.5500, Subpart 2, Northern States Power Company, a Minnesota Corporation (Xcel Energy), hereby notifies the Minnesota Public Utilities Commission of its intent to submit an application for a route permit for the Yankee to Brookings County project following the alternative permitting procedures in Minnesota Rules 7849.5500 to 7849.5720.

The proposed project would construct an approximately 13 mile 115 kV transmission line connecting the existing Yankee Substation in Lincoln County, Minnesota to the existing Brookings County Substation in South Dakota. Approximately 6.5 miles of the line would be in Minnesota.

Xcel Energy plans to file the application in early January. We will work with PUC and Department of Commerce Staff to address any comments they have in order to expedite application acceptance and completion of the environmental assessment.

If you should have any questions, please contact me at (612) 330-6538.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Hillstrom'.

Thomas G. Hillstrom
Senior Permitting Analyst

cc: Jim Alders, Xcel
Pam Rasmusen, Xcel
Lisa Agrimonti, Briggs & Morgan
Robert Cupit, MN PUC
Adam Sokolski, MN DOC

Appendix D: Agency Correspondence



Minnesota Department of Natural Resources

Natural Heritage and Nongame Research Program, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5107 Fax: (651) 296-1811 E-mail: sarah.wren@dnr.state.mn.us

February 26, 2007

Daniel Jones, Senior Environmental Scientist
Barr Engineering Company
4700 West 77th Street
Edina, MN 55435

Dear Daniel:

You have requested that the Limited License to Use Copyrighted Material No. LA-425, granted to Barr Engineering Company by the State of Minnesota, be amended to include additional data and an additional use. Consequently, I hereby amend (additions underlined) Section 1.A. to read, "....in Minnesota within Dakota, Itasca, Lincoln, Morrison, Ramsey, Scott, St. Louis, and Washington Counties." and Section 2.A. to read, "...only for environmental review and planning associated with the following projects: Ramsey Washington Metro Watershed District Watershed Management Plan Update; Polymet Mine; Minnesota Steel Mine; Mittal Steel Mine; Koch Pipeline Company, Little Falls Oil Spill; Storm Water Storage Study within the Sand Creek and Southwest Watershed; City of Burnsville Natural Resource Master Plan, and the Xcel Energy Buffalo Ridge Incremental Generation Outlet (BRIGO), Brookings to Yankee Segment.". All other terms and conditions of License LA-425 remain unchanged and in effect.

Please feel free to contact me if you have any questions or concerns about this amendment. An invoice itemizing the charges associated with the amendment will be issued to you shortly following your receipt of these data.

Sincerely,

A handwritten signature in cursive script that reads "Sarah Wren".

Sarah Wren
NHIS Data Distribution Coordinator

Appendix E: Landowner List and Public Comment

Sign-In Sheet

Yankee to Brookings 115 KV Transmission Line 7/17/07

<u>Name</u>	<u>Address</u>	<u>email</u>	<u>Phone</u>
Paul + Lois Erschens			
Dave Buchholz			
Marty Buchholz			
Anton Buchholz			
Char Lage			
Kelly Nichols			
Jim Nichols			
Germa Petersen			
Ted + Edonna Schwung			
Jim Krugh			
Joel Koch			
Thomas Kuhn			
John + Shari Leiferman			
John + Shari Leiferman			
Sebastian + Beverly Schwung			
David Tarrell			
Jim Johnson			
Charles N. Oypelt			
Richard Mottler			
Morris + Jean Jels			
Rufus + Patty Deleenw			
Ted Eggebraten			
PEE LEIFERMAN			

**PROPOSED YANKEE TO BROOKINGS 115 Kv TRANSMISSION LINE
JULY 17, 2007 meeting
COMMENT FORM**

FROM:

Name	Theodore C. Schwing & Sadonna Schwing
Address	[REDACTED]
Representing	self

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

Parcel #1 Sec. 18, TWP 110, Range 46 Lots 3 & 4 79.6 acres
Parcel #2 Sec. 13, TWP 110, Range 47 NE 1/4 NE 1/4 & N 1/2 Lot 1 62.06 acres

My concerns regarding this project are:

We attended the open house on 7-17-07.
Here are comments for the proposed line you indicated to go west one mile from yankee then north to existing large transmission line.

Proceed on east side of road between section 19 & 24. This avoids 2 areas of trees.

Proceed on east side of road between section 13 & 18 1/2 mile on my property. Continue north on east side on Sebastian Schwing farm for 1/4 mile, then switch to west side of road on my Parcel #2. Two small areas of trees on my Parcel #2 would be less tree removal that would be required on property of Sebastian Schwing and I have no reason to object to tree removal on my property.

To avoid 2 miles of "no-roads" and "range country" between Sec 1 and 6 of Drammer twsp and 31 & 36 of Shakotin twsp, we suggest you go west on my side of the road along north side of Parcel #2 for 1 mile, then north to the existing power line.

Call, stop by, let's talk!

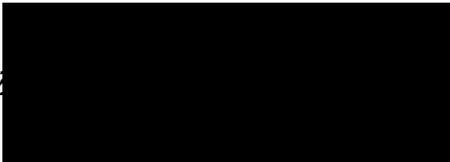
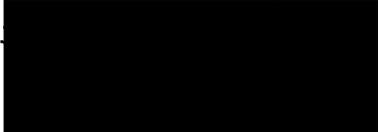
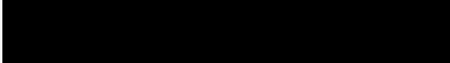
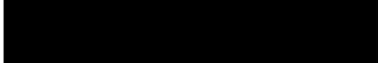
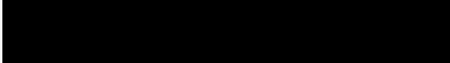
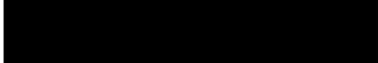
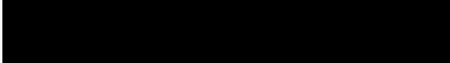
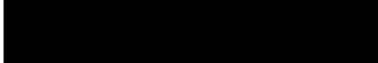
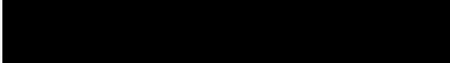
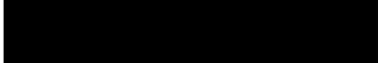
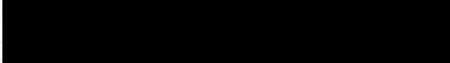
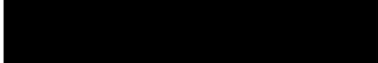
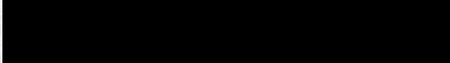
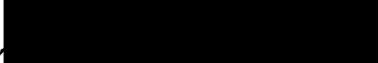
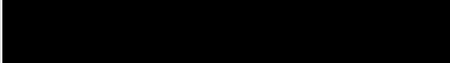
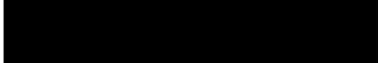
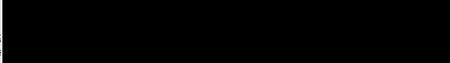
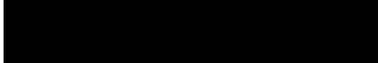
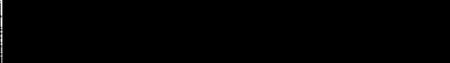
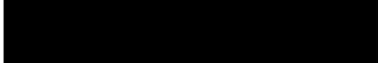
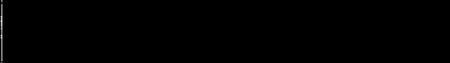
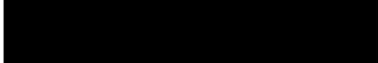
Theodore C. Schwing

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

December 12, 07

ELKTON OPEN HOUSE

Please sign in to be added to
mailing list

NAME	ADDRESS	PHONE #
Ted Schwering Sodome Schuy		
Richard Matter		
Ralph Lynn		
Joel Koster		
David Mueller		
Walter D. Mueller		
Sebastian S Schwering		
Robert Hill		
Randy + Deb Bushman		
Joel Koch		
Lee Amundson		



PROPOSED YANKEE TO BROOKINGS 115 Kv TRANSMISSION LINE
December 12, 2007 meeting
COMMENT FORM

FROM:

Name	SEBASTIAN SCHWING
Address	[REDACTED]
Representing	Self

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

NW 1/4 Sec 18 110 26

My concerns regarding this project are:

No concerns, east side of Road, AVOID My Grove

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.



PROPOSED YANKEE TO BROOKINGS 115 Kv TRANSMISSION LINE
December 12, 2007 meeting
COMMENT FORM

FROM:

Name: Joel Koster
Address: [Redacted]
Representing: Koster's Inc & Drammen Corp.

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

110-24-47 24-110-47W

My concerns regarding this project are:

No great concerns - may have questions when it is determined which side of the road the line will be on.

Drammen Corp.

We feel the 3 miles of road around sec. 31-110-46W should be gravelled next year as they were used extensively due to the storage area used in the SW corner of Sec. 31 during construction of existing line built in 2006-2007.

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.



PROPOSED YANKEE TO BROOKINGS 115 Kv TRANSMISSION LINE
December 12, 2007 meeting
COMMENT FORM

FROM:

Name	Ted Schwinn
A	[REDACTED]
Representing	SELF

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

My concerns regarding this project are:

Sec 18 W 1/2 SW 1/4 Drammer
Fr Sec 13 No. 62 ave

Prefer line to be on east side of road in Sec 18
until it reaches my brother, Sebastian's land.
Go to west side of road on my 60 in Fr Sec 13
and west along Co Rd 131 on my side of road

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.



PROPOSED YANKEE TO BROOKINGS 115 Kv TRANSMISSION LINE
December 12, 2007 meeting
COMMENT FORM

FROM:

Name	Richard Motter
Address	[REDACTED]
Representing	Richard Motter and Motter Farms, Inc.

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

12-110-47 in Drammen Township, Lincoln County Minnesota
10-110-47 in ~~Richland~~ Richland Township, Brookings County, SD.

My concerns regarding this project are:

See enclosed letter

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

48754 210th St.
Elkton, SD 57026
December 28, 2007

Xcel Energy
Attention: Tom Hillstrom
414 Nicollet Mall MP-8A
Minneapolis, MN 55401

My concerns relate to the sub-options in section 12-110-47 in Drammen Township, Lincoln County, Minnesota. Option B which follows 200th St. on the south and then turns north along the state line is of special concern. The south end of this north-south line follows our driveway into the farmstead. Pole placement close to the driveway would be at least inconvenient if not unsafe for wide farm machinery as well as for truck traffic entering our farmstead. In addition, the tower bases could cause snow drifts to form on the driveway. To avoid these problems, the towers would need to be set out into the field making farming very inconvenient.

The other proposed option which would cross our land is option C which crosses in the middle of section 12. This would have much less impact on our farming operation than option B, if in fact, the slanted portion at the east end was short enough that it did not require a center pole in the middle of the field. I would not object to the trees near the center of that line being removed so that the line could be placed close to the fence line

I am also concerned about the line that follows 110th Avenue on the east side of section 12. Both the rural water line and the local power line are on the west side of that road. I hope arrangements can be made to fit the proposed line between the water line and road right-of-way if the line is built on the west side of the road. If not, the poles will be out in the field so that farming will be quite difficult.

Thank you for your consideration of these matters.

Sincerely,

Richard D. Motter

Landowner List

Name	Company
JOHNSON/B F/ET AL	
MOTTER/RICHARD D	
ANDREW J & ROXANE WEBER AS TRUSTEES OF THE ANDREW J WEBER RLT 4-24-6 ET AL	
SCHWING/SEBASTIAN G	
	DELANEY HEREFORDS INC
SCHWING/THEODORE C/ET UX	
PENNER/MELROY	
LERDAL/PAUL M	
	KOSTER'S INC
BUSHMAN/RANDALL R & DEBRA/JT	
FLEMING/MARY J	
KROESE/PAMELA J	
RASMUSSEN/ALLEN L	
KALOUSEK/VIOLET & ALVER/JT	
MUELLER/DAVID	
VENEKAMP/DOUGLAS W/ET UX	
NICHOLS/KELLY G & CYNTHIA/JT	
GARBERS/VIRGIL G & DEBRA/JT	
JOHANNSEN/EARL	
GARMATZ/STELLA & LEROY JT	