

**PROPOSED ROUTE PERMIT
FOR CONSTRUCTION OF
THE CHISAGO TRANSMISSION PROJECT 115/161 kV
TRANSMISSION LINES, SUBSTATION UPGRADES AND THE
NEW LAWRENCE SUBSTATION
IN
CHISAGO COUNTY
ISSUED TO
NORTHERN STATES POWER COMPANY dba XCEL ENERGY
PUC DOCKET No. E002/TL-06-1677**

In accordance with the requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7849, this Route Permit is hereby issued to:

NORTHERN STATES POWER COMPANY dba XCEL ENERGY

Northern States Power Company (herein after “Xcel Energy” or the “Permittee”) is authorized to 1) replace the existing 69 kV transmission line located between the Chisago County substation and the proposed Lawrence Creek Substation near Taylors Falls, Minnesota with a new 115 kV transmission line; 2) replace the 69 kV transmission line with a new 161 kV transmission line between the new Lawrence Creek Substation and the St. Croix River crossing in Taylors Falls; and 3) modify the existing Chisago County, Lindstrom, and Shafer substations and construct a new Lawrence Creek Substation. The project shall be built along the route identified in this Permit and portrayed in the attached maps and in compliance with the conditions specified in this Permit.

Approved and adopted this _____ day of January 2008

BY ORDER OF THE COMMISSION

Burl W. Haar,
Executive Secretary

I. ROUTE PERMIT

The Minnesota Public Utilities Commission (PUC) hereby issues this Route Permit to Xcel Energy (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules 7849.5500-5720. The Permit authorizes the Permittee to 1) replace the existing 69 kV transmission line located between the Chisago County substation and the proposed Lawrence Creek Substation near Taylors Falls, Minnesota with a new 115 kV transmission line; 2) replace the 69 kV transmission line with a new 161 kV transmission line between the new Lawrence Creek Substation and the St. Croix River crossing in Taylors Falls; and 3) modify the existing Chisago County, Lindstrom, and Shafer substations and construct a new Lawrence Creek Substation.

II. PROJECT DESCRIPTION

This Permit authorizes the Permittee to construct new high voltage transmission lines and a new substation and modify existing substations, specifically to:

- rebuild the existing 69 kV transmission line to 115 kV from CSAH 19 through the Lindstrom Substation to 1st Avenue,
- rebuild the existing 69 kV transmission line to 115 kV between 1st Avenue and the Great River Energy Shafer Substation tap,
- replace the existing 69 kV transmission line with underground 115 kV from 1st Avenue south to Newell Avenue, east to Broadway Street and north to rejoin the existing line north of Hwy 8, east of Broadway. Rebuild the existing 69 kV transmission line to overhead 115 kV from a point east of Broadway Street to the Great River Energy Shafer Substation tap,
- rebuild the existing 69 kV line to 115 kV east of the Shafer Substation tap, with a new 0.2 mile alignment into the new Lawrence Creek Substation near Taylors Falls,
- realign 0.25 miles of the existing 69 kV Arden Hills line to enter the Lawrence Creek Substation.
- rebuild the existing 69 kV transmission line to 161 kV operation between the new Lawrence Creek Substation and CSAH 20 in Taylors Falls, with a new 0.4 mile alignment where the line enters the Lawrence Creek Substation,
- replace the existing 69 kV transmission line with underground 161 kV transmission line from CSAH 20 through TH 95 in Taylors Falls,
- rebuild the existing 69 kV transmission line to 161 kV between TH 95 and the St. Croix Falls Substation,

- modify equipment at the existing Chisago County and Shafer substations to change the line operation from 69 kV to 115 kV,
- modify equipment and expand the existing Lindstrom substation to change the voltage from 69 kV to 115 kV, and
- construct a new Lawrence Creek Substation.

All portions of the overhead transmission line will use a 795 kcmil 26/7 ACSS. For lightning protection, Xcel Energy will use 3/8-inch EHS steel shield wire. All portions of the underground transmission line will be buried within a concrete duct bank. Each of the three phases will consist of a 3000 kcmil copper XLPE cable. The underground transmission line will also include a ground continuity conductor. The ground continuity conductor is typically a 600-V insulated 4/0 cable.

Xcel Energy is granted a 200-foot wide corridor for the majority of the designated route, allowing reasonable flexibility in locating the transmission line along the rebuild portions of the route. In the vicinity of the new alignments going into and out of the proposed Lawrence Creek Substation, Xcel Energy is granted a 0.5-mile route width for the new 115 kV transmission line alignment entering the Substation from the south. Xcel Energy is granted a 0.5-mile route width to realign the Arden Hills 69 kV line to terminate at the Lawrence Creek Substation. For the new 161 kV transmission line alignment exiting the substation to the east, Xcel Energy is granted a 500-foot route width in order to provide for flexibility in siting the substation and transmission line configurations. The location of the proposed substation will be determined following consultation with the city of Taylors Falls regarding the future expansion of the city's wastewater treatment ponds located north of the proposed substation site.

Along 1st Avenue in Lindstrom, Xcel Energy will build on the existing alignment, except where necessary between Elm Street and Olinda Trail to accommodate MN/DOT plans for the expansion of HWY 8.

Along the Newell Avenue alternative, Xcel Energy will build underground within Lindstrom City ROW under the city streets. Transition structures will be built within the existing alignment.

The ROW that will be acquired from landowners for the transmission line will be 50 feet wide (25 feet each side of the transmission line centerline).

III. DESIGNATED ROUTE AND SUBSTATION SITES

A. 115/161 kV High Voltage Transmission Line Route

The route designated by the PUC is described below and shown by segments on the maps in Attachment B to this Permit:

Segment 1 of the approved route begins with a line west of the intersection of Karmel Avenue and Stacy Trail/CSAH 19 and continues east to Lincoln Road, where it turns south along Lincoln Road to the Lindstrom Substation. From there it continues east along the existing route to a point north of 1st Avenue. The structures will be 75 foot (average) 115 kV single-circuit, single wood poles with distribution underbuild.

Segment 2 follows 1st Avenue to HWY 8 along the proposed alignment of the northern “reversed pair” segment of MN/DOT’s HWY 8 proposal. The structures will be 85-90 foot (average) 115 kV single-circuit, single steel poles with distribution underbuild. At HWY 8 east of Olinda Trail, the structures will revert to 115 kV single-circuit, single wood poles through Broadway Street.

Segment 2 follows 1st Avenue to HWY 8 along the proposed alignment of the northern “reversed pair” segment of MN/DOT’s HWY 8 proposal. The structures will be 85-90 foot (average) 115 kV single-circuit, single steel poles. Xcel Energy will bury the distribution that is currently underbuilt on the existing poles along this segment. At HWY 8 east of Olinda Trail, the structures will revert to 115 kV single-circuit, single wood poles through Broadway Street.

Segment 2 will be undergrounded under 1st Avenue down Linden Street, turning east down Newell Avenue, returning north up Broadway Street, passing under HWY 8 and rejoining with the original overhead alignment at that point. The structures will be 3x3 115 kV single-circuit underground duct banks with access vaults. Steel overhead and underground transition structures will be required at each end. Xcel Energy will remove the transmission lines along the original 1st Avenue right of way and trim the existing poles to an appropriate height to accommodate the existing distribution and utilities.

Segment 3 runs from the Broadway Street end of segment 2 to the Shafer Tap. The structures will be 80 foot (average) 115 kV single-circuit, single wood poles with distribution underbuild (70 foot average wood H-frames will be used to span large wetland complexes).

Segment 4 runs from the Shafer Tap along the existing route to the new Lawrence Creek Substation. The structures will be 70 foot (average) 115 kV single-circuit, single wood poles with distribution underbuild. The Arden Hills 69 kV will be realigned along this segment to terminate at the new substation.

Segment 5 continues east from the new Lawrence Creek Substation to a point at CSAH 20 in Taylors Falls. The structures will be 70 foot (average) 161 kV single-circuit, single wood poles with distribution underbuild.

Segment 6 runs underground down the river bluff east of CSAH 20 and under TH 95. The structures will be 3x3 161 kV single-circuit underground duct banks with access vaults. Steel overhead and underground transition structures will be required at each end. Xcel Energy will bury the existing distribution circuits paralleling the route down the bluff.

Segment 7 will cross the St. Croix River into St. Croix Falls, Wisconsin. The structures used will be 80 foot (average) 161 kV single-circuit wood H-frame poles from TH 95 to the river. The structures employed for the river crossing will be a 70 foot (average) 161 kV single-circuit wood H-frame pole on each side of the St. Croix.

B. Substation Modifications and Construction Sites

The site designated by the PUC for the new Lawrence Creek Substation and the other substation modifications authorized for the project are described below:

Chisago County Substation. Modifications to this substation to accommodate the upgrade of the 69 kV section of the existing double-circuit 115/69 kV transmission line to 115 kV include the addition of one 115 kV circuit breaker and associated foundations and structural steel within the existing graded and fenced area. This work will not require expansion of the existing substation.

Lindstrom Substation. Modifications to this substation accommodate the single-circuit 115 kV transmission line. The existing graded area will be expanded approximately 50 feet to the east, to accommodate the new equipment. At the northeast corner, an area approximately 100 feet east to west and 23 feet north to south will also be expanded and graded. Steel structures and associated concrete pier foundations will be installed to support high-voltage switches and bus work. Concrete pad foundations will be installed to support high-voltage circuit breakers and transformers. The existing 69/12.5 kV power transformers will be replaced with two new 115/12.5 kV power transformers. One new 115 kV circuit breaker will be installed.

Shafer Substation. Modifications to this substation accommodate the single-circuit 115 kV transmission line. The existing 69/12.5 kV power transformer will be replaced with a new 115/12.5 kV power transformer. A new 115 kV three-way switch mounted on a transmission line structure will be installed along the transmission line route to facilitate the new 115 kV connection to the substation. This work will not require expansion of the existing substation.

Lawrence Creek Substation. The new Lawrence Creek Substation is to be sited north of County Road 82 in Section 25, Township 34N, Range 19W (see Map #5 in Attachment B). Approximately 8.0 acres of property will need to be acquired to accommodate the substation construction for this Project.

The initial fenced area will be approximately 475 x 206 feet, or approximately 2.2 acres. The ultimate size of the fenced area will be 475 x 375 feet, or approximately 4.1 acres. Concrete pier foundations will be installed to support numerous steel w-flange (I-beam) columns and platforms positioned throughout the substation for the placement of high-voltage bus work and switches. Concrete pad foundations will be installed for supporting high-voltage circuit breakers and transformers. A steel control house will also be erected within the fenced area that will enclose protective relay and control equipment. The main pieces of electrical equipment are included in the following list. However, the substation will be designed and constructed in a manner that will allow the future installation of additional circuit breakers and transformers:

- (4) 115kV Circuit Breakers
- 69 kV Circuit Breaker
- 115/161 kV Power Transformer

- 115/69 kV Power Transformer
- 115/12.5 kV Power Transformer
- Control House
- (1) 12.5 kV Switchgear Enclosure
- High-voltage bus work, switches and associated steel supporting structures

IV. GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction of the transmission line and associated facilities and the life of this Permit.

A. Plan and Profile. At least 14 days before right-of-way preparation for construction begins, the Permittee shall provide the PUC with a plan and profile of the right-of-way and the specifications and drawings for right-of-way preparation, construction, cleanup, and restoration for the transmission line and the substation site. The Permittee may not commence construction until the 14 day period has expired or until the PUC has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes in its plan and profile or the specifications and drawings after submission to the PUC, the Permittee shall notify the PUC at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

B. Construction Practices.

1. **Application.** The Permittee shall follow those specific construction practices and material specifications described in the Permit Application to the Minnesota Public Utilities Commission for a Route Permit for the Chisago Transmission Project dated January 5, 2007, PUC Docket E002/TL-06-1677, unless this Permit establishes a different requirement in which case this Permit shall prevail.
2. **Field Representative.** At least ten days prior to commencing construction, the Permittee shall advise the PUC in writing of the person or persons designated to be the field representative for the Permittee with the responsibility to oversee compliance with the conditions of this Permit during construction. This person's address, phone number, and emergency phone number shall be provided to the PUC, which may make the information available to local residents and public officials and other interested persons. The Permittee may change the field representative at any time upon written notice to the PUC.
3. **Cleanup.** All waste and scrap that is the product of construction shall be removed from the area and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.
4. **Vegetation Removal.** The Permittee shall minimize the number of trees to be removed as part of the construction of the line, taking into account Permit Condition IV.H.1, which recognizes that the Permittee have obligations to comply with clearance requirements.

5. **Erosion Control.** The Permittee shall implement reasonable measures to minimize runoff during construction and shall plant or seed non-agricultural areas that were disturbed where structures are installed. Upon request, the Permittee shall submit to the PUC a copy of any Soil Erosion and Sediment Control Plan prepared for the Minnesota Pollution Control Agency as part of a storm-water runoff permit application.
 6. **Temporary Work Space.** The Permittee shall limit temporary easements to special construction access needs and additional staging or lay-down areas required outside of the authorized right-of-way.
 7. **Restoration.** The Permittee shall restore all temporary work spaces, access roads, and other private lands affected by construction of the transmission line. Restoration must be compatible with the safe operation, maintenance, and inspection of the transmission line. Within sixty days after completion of all restoration activities, the Permittee shall advise the PUC in writing of the completion of such activities.
 8. **Notice of Permit.** The Permittee shall inform all employees, contractors, and other persons involved in the construction of the transmission line of the terms and conditions of this Permit.
- C. Periodic Status Reports.** Upon request, the Permittee shall report to the PUC on progress regarding finalization of the route, design of structures, and construction of the transmission line. The Permittee need not report more frequently than quarterly.
- D. Complaint Procedure.** Prior to the start of construction, the Permittee shall submit to the PUC the company's procedures to be used to receive and respond to complaints. The procedures shall be in accordance with the requirements set forth in Exhibit 1 attached to this Permit.
- E. Notification to Landowners.** The Permittee shall provide all affected landowners with a copy of this Permit at the time of the first contact with the landowners after issuance of this Permit.
- F. Drain Tile Restoration Plan.** Prior to the start of construction, the Permittee shall submit to the PUC its procedures for minimizing drain tile damage during construction and operation and restoration policies. Permittee must submit the Drain Tile Restoration Plan to the PUC for review prior to beginning construction as described in Permit General Conditions, Section IV.A, above.
- G. Completion of Construction.**
1. **Notification to PUC.** At least three days before the line is to be placed into service, the Permittee shall notify the PUC of the date on which the line will be placed into service and the date on which construction was complete.
 2. **As-Builts.** Within 180 days of completion of the project, the Permittee shall submit copies of all the final as-built plans and specifications developed during the project.

3. **GPS Data.** Within sixty days after completion of construction, the Permittee shall submit to the PUC, in the format requested by the PUC, geo-spatial information (GIS compatible maps, GPS coordinates, etc.) for all above ground structures associated with the transmission lines and each substation connected.

H. Electrical Performance Standards.

1. **Grounding.** The Permittee shall design, construct, and operate the transmission line in such a manner that the maximum steady-state short-circuit current shall be limited to five milliamperes rms alternating current between the ground and any non-stationary object within the right-of-way including but not limited to, large motor vehicles and agricultural equipment. All fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, shall be grounded to the extent necessary to limit the short circuit current between ground and the object so as not to exceed one milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code.
2. **Electric Field.** The transmission line shall be designed, constructed, and operated in such a manner that the electric field measured one meter above ground level immediately below the transmission line shall not exceed 8.0 kV/m rms.
3. **Interference with Communication Devices.** If interference with radio or television, satellite or other communication devices is caused by the presence or operation of the transmission line, the Permittee shall take whatever action is prudently feasible to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the line.

I. Other Requirements.

1. **Applicable Codes.** The Permittee shall comply with applicable North American Electric Reliability Corporation (NERC) planning standards and requirements of the National Electric Safety Code (NESC) including clearances to ground, clearance to crossing utilities, clearance to buildings, right-of way widths, erecting power poles, and stringing of transmission line conductors.
2. **Other Permits.** The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of these permits. A list of the required permits is included in the permit application and the environmental impact statement. The Permittee shall submit a copy of such permits to the PUC upon request.
3. **Pre-emption.** Pursuant to Minnesota Statutes section 216E.10, subdivision 1, this Site Permit shall be the sole route and substation site approval required to be obtained by the Permittee for construction of the facilities and this Permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose government.

J. Delay in Construction. If the Permittee has not commenced construction or improvement of the route within four years after the date of issuance of this Permit, the PUC shall consider suspension of the Permit in accordance with Minn. Rules part 4400.3750.

V. SPECIAL CONDITIONS

1. Permanent Right-of-Way Acquisition: Where the Permittee is not restricted to the existing ROW, it may obtain up to 50 feet of right-of-way when the transmission line does not parallel or utilize existing highway right-of-way. Where the transmission line parallels local, county or state roadways, the Permittee may acquire up to 30 feet of right-of-way outside the roadway right-of-way.
2. For Segment 2 in Lindstrom, Xcel Energy must underbuild the existing distribution and work with the city to place poles in order to mitigate impacts. Xcel Energy will negotiate with landowners to replace existing trees with appropriate vegetation to protect the existing visual separation of private homes from the highway ROW.
3. Xcel Energy must submit a mitigation plan to the PUC prior to submitting its Plan and Profile, outlining proposals for mitigating impacts of the transmission line along Segment 2.
4. For Segment 2 in Lindstrom, Xcel Energy must bury the existing distribution and work with the city to place poles in order to mitigate impacts.
5. For Segment 2 in Lindstrom, with the City of Lindstrom providing space for the line within its ROW on Linden Street, Newell Avenue and Broadway Street, Xcel Energy must bury the HVTL within the ROW. Xcel Energy will also dismantle the existing 69 kV line in this segment and trim the existing poles down to an appropriate height to accommodate distribution and other utility lines.
6. Xcel Energy must work with the City of Taylors Falls to coordinate placement of the Lawrence Creek Substation with the placement of the city's wastewater treatment ponds.
7. Xcel Energy must bury the existing distribution along Segment 6 where it is burying the HVTL down the river bluff.

VI. PERMIT AMENDMENT

This permit may be amended at any time by the PUC or authorized successor agency of the State of Minnesota. Any person may request an amendment of this permit by submitting a request to the PUC in writing describing the amendment sought and the reasons for the amendment. The PUC will mail notice of receipt of the request to the Permittee. The PUC may amend the permit after affording the Permittee and interested persons such process as is required.

VII. PERMIT TRANSFER

The Permittee may request at any time that the PUC transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the PUC with such information as the PUC shall require to determine whether the new Permittee(s) can comply with the conditions of the permit. The PUC may authorize transfer of the permit after affording the Permittee, the new Permittee(s), and interested persons such process as is required.

VIII. REVOCATION OR SUSPENSION OF THE PERMIT

The PUC may initiate action to revoke or suspend this permit at any time. The PUC shall act in accordance with the requirements of Minnesota Rule part 7849.6010 to revoke or suspend the permit.

**PUBLIC UTILITIES COMMISSION
COMPLAINT REPORT PROCEDURES FOR
HIGH VOLTAGE TRANSMISSION LINES**

1. Purpose

To establish a uniform and timely method of reporting complaints received by the permittee concerning the permit conditions for right-of-way preparation, construction, cleanup and restoration, and resolution of such complaints.

2. Scope

This reporting plan encompasses complaint report procedures and frequency.

3. Applicability

The procedures shall be used for all complaints received by the permittee.

4. Definitions

Complaint - A statement presented by a person expressing dissatisfaction, resentment, or discontent as a direct result of right-of-way preparation, construction, cleanup and restoration. Complaints do not include requests, inquiries, questions, or general comments.

Substantial Complaint - Written complaints alleging a violation of a specific Site Permit condition that, if substantiated, could result in Permit modification or suspension pursuant to the applicable regulations.

Person - An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

5. Responsibilities

Everyone involved with right-of-way preparation, construction, cleanup and restoration is responsible to ensure expeditious and equitable resolution of all complaints. It is therefore, necessary to establish a uniform method for documenting and handling complaints directed to this project. The following procedures will satisfy this requirement:

- A. The Permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:
1. Name of the permittee and project.
 2. Name of complainant, address and phone number.
 3. Precise property description or tract number (where applicable).
 4. Nature of complaint.
 5. Response given.
 6. Name of person receiving complaint and date of receipt.
 7. Name of person reporting complaint to the EQB and phone number.
 8. Final disposition and date.
- B. The Permittee shall assign an individual to summarize complaints for transmittal to the PUC.

6. Requirements

The permittee shall report all complaints to the PUC according to the following schedule:

Immediate Reports - All substantial complaints shall be reported to the PUC the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to Wind Permit Compliance at the following: DOC.energypermitcompliance@state.mn.us, or 1-800-657-3794. Voice messages are acceptable.

Monthly Reports

By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be sent to Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN, 55101-2147. A copy of each complaint shall be sent to Wind Permit Compliance, Minnesota Department of Commerce, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

7. Complaints Received by the PUC

Copies of complaints received directly by the PUC from aggrieved persons regarding right-of-way preparation, construction, cleanup and restoration shall be promptly sent to the permittee.

Route Maps

Map 1 - Proposed Route Overview

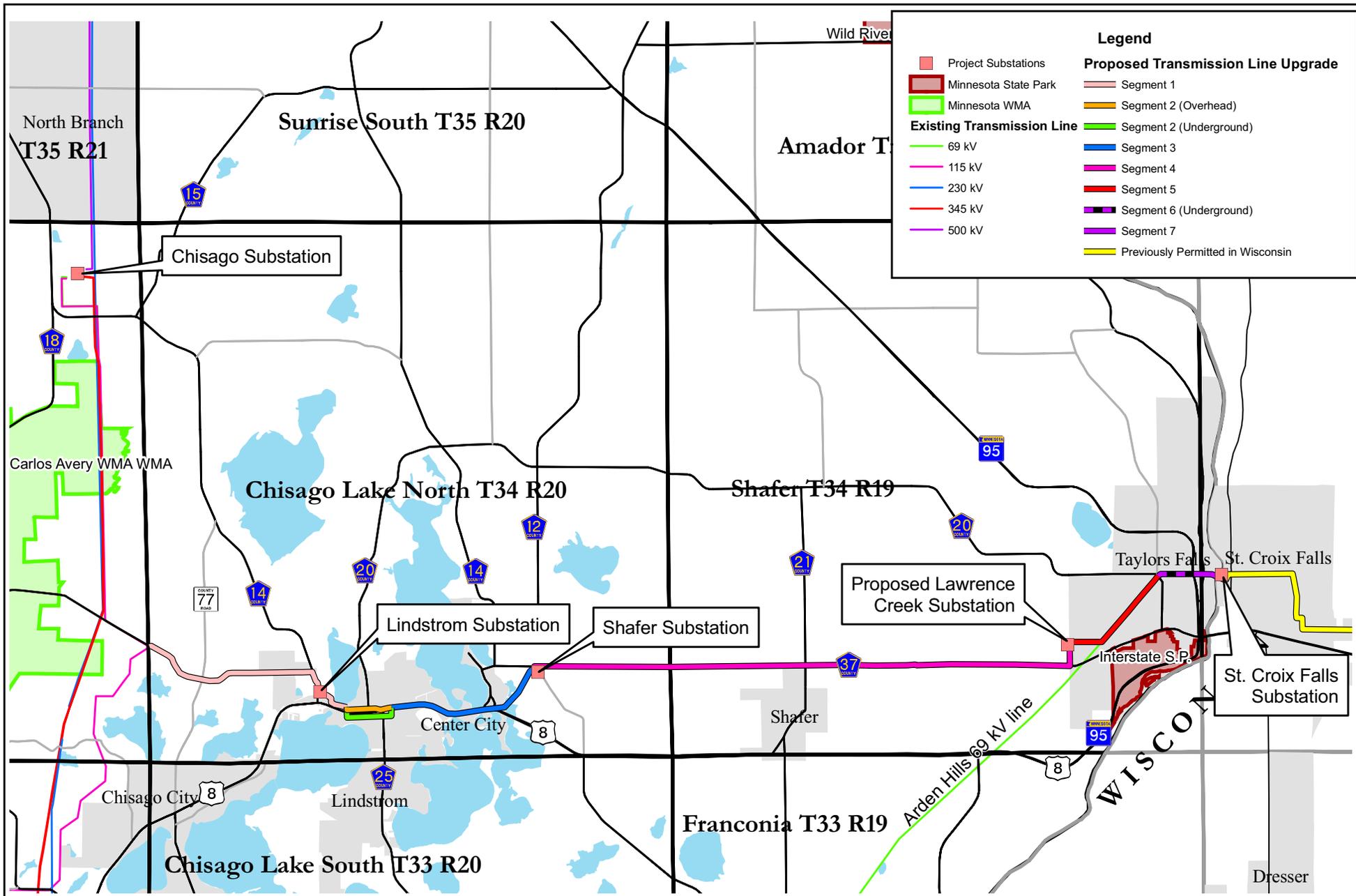
Map 2 - Proposed Route Detail (Chisago Substation)

Map 3 - Proposed Route Detail (City of Lindstrom)

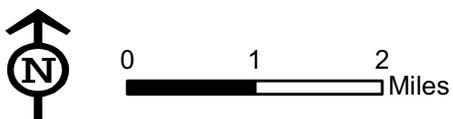
Map 4 - Proposed Route Detail (Shafer Tap to Lawrence Creek Substation)

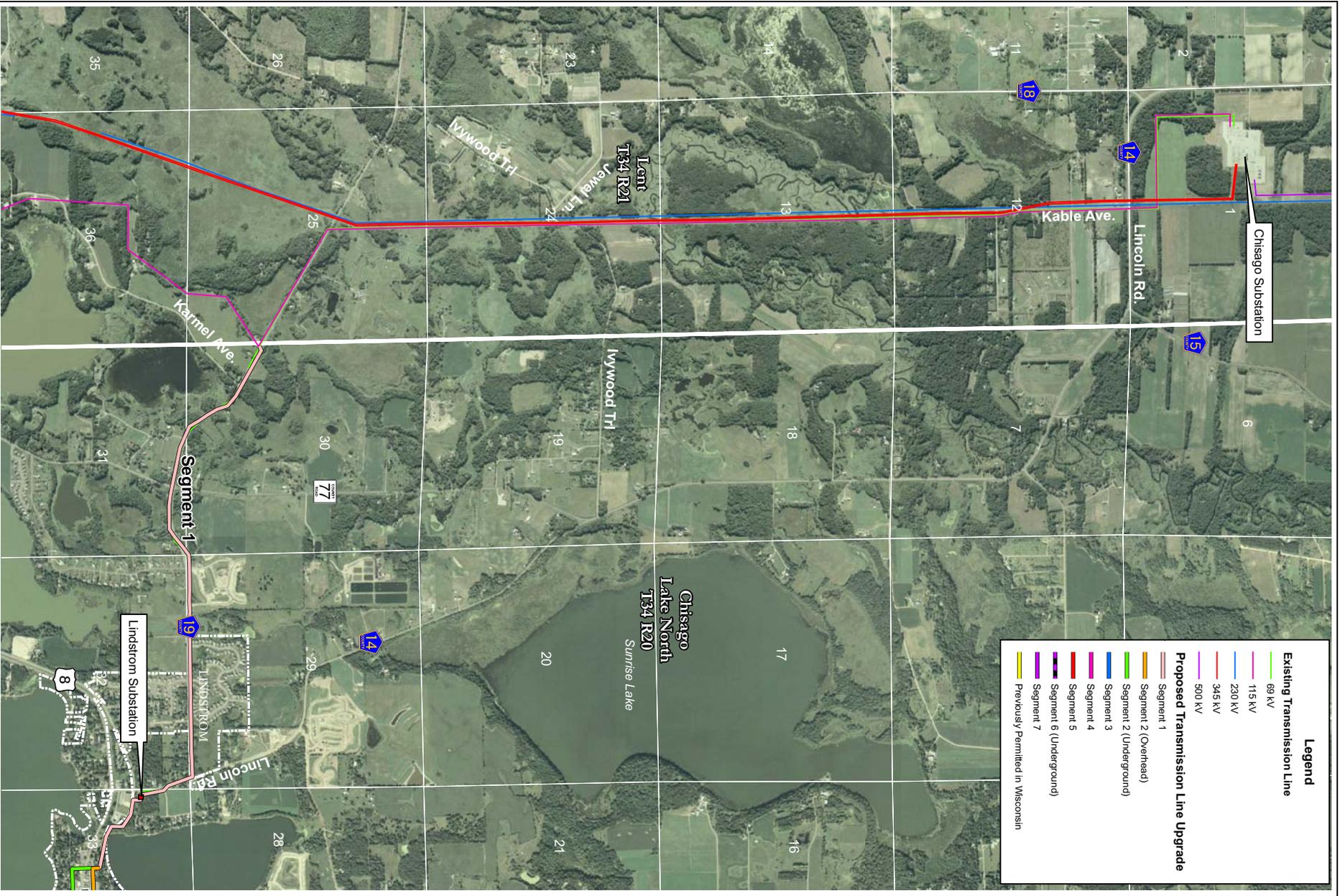
Map 5 - Proposed Route Detail (Lawrence Creek Substation)

Map 6 - Proposed Route Detail (Taylors Falls to St. Croix)



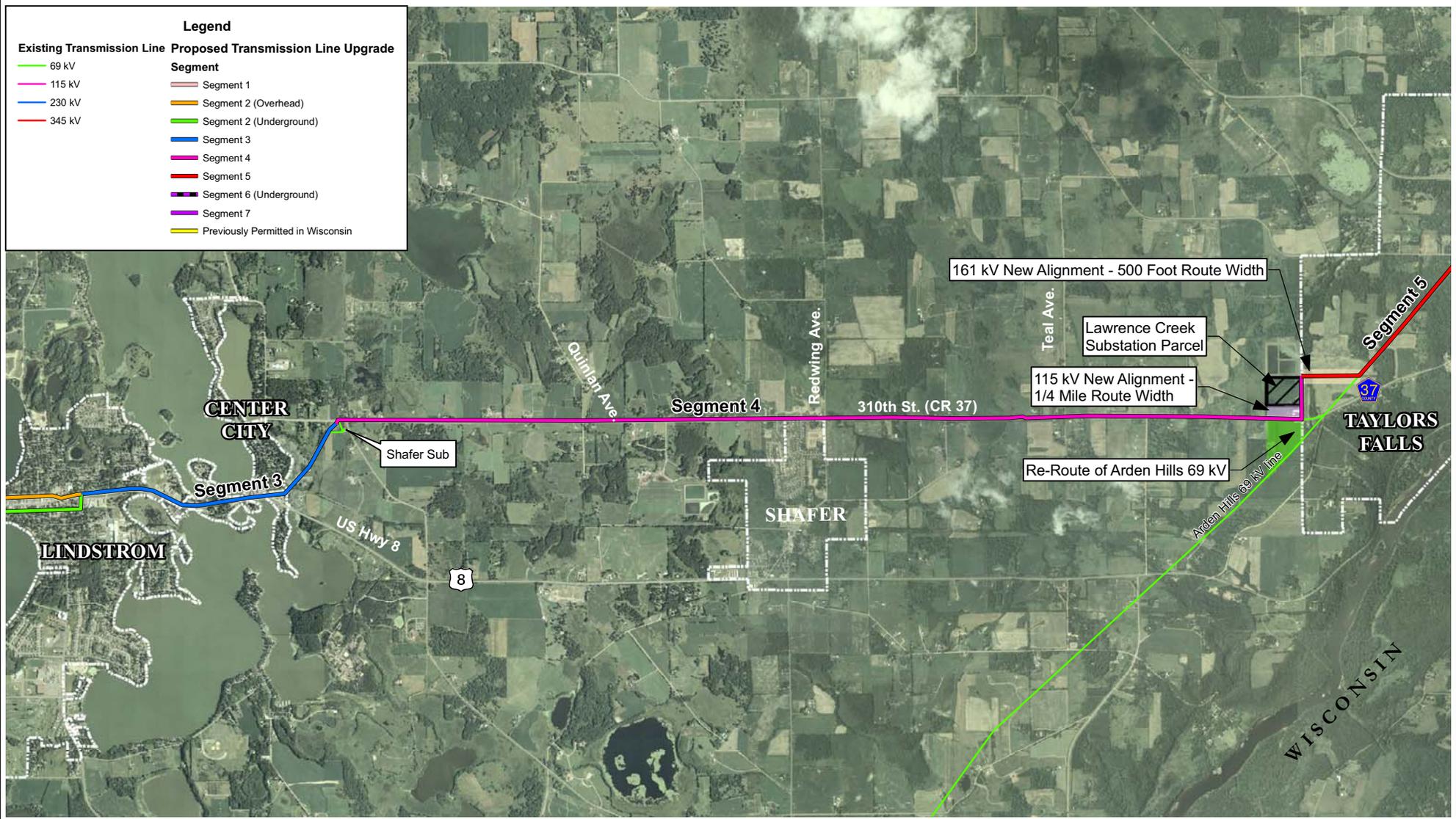
Map 1 Proposed Route Overview Map
 Chisago Transmission Project
 Chisago County, Minnesota





Map 2. Proposed Route - Detailed Maps
 Chicago Transmission Project
 Chisago County, Minnesota





0 1,500 3,000 6,000 Feet

Map 4 Proposed Route - Detailed Maps
 Chisago Transmission Project
 Chisago County, Minnesota

