GREAT RIVER ENERGY

APPLICATION TO THE
MINNESOTA PUBLIC UTILITIES COMMISSION
FOR A
ROUTE PERMIT

ALTERNATIVE PERMITTING PROCESS

WILSON LAKE PROJECT

115 kV TRANSMISSION LINE
and
SUBSTATION MODIFICATIONS

Docket ET-2/TL-06-980

GREAT RIVER ENERGY℠
A Touchstone Energy® Cooperative

28 July 2006

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LIST OF ACRONYMS

ACRONYMS	
AC	Alternating current
ACSR	Aluminum conductor steel reinforced
ACSS	Aluminum conductor steel supported
BPA	Bonneville Power Administration
CFR	Code of Federal Regulations
Commission	Minnesota Public Utilities Commission
Corps	United States Army Corps of Engineers
CSAH	County State Aid Highway
CWP	Crow Wing Power
dB(A)	Decibel
DNR	Minnesota Department of Natural Resources
DOT	Minnesota Department of Transportation
ECE	East Central Energy
EMF	Electromagnetic fields
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
EQB	Minnesota Environmental Quality Board
FAA	Federal Aviation Administration
FWS	United States Fish and Wildlife Service
G	Gauss
GRE	Great River Energy
HEL	Highly Erodible
HVTL	High voltage transmission line
kV	Kilovolt
mG	Milligauss
MHS	Minnesota Historical Society
MLEC	Mille Lacs Energy Cooperative
MP	Minnesota Power
MPCA	Minnesota Pollution Control Agency
MVA	Megavolt-ampere
MW	Megawatt
NAC	Noise area classifications
NERC	North American Electric Reliability Council
NESC	National Electric Safety Code
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
ppm	Parts per million
RUS	Rural Utilities Service
STH	State Trunk Highway
USDOE	United States Department of Energy
USGS	United States Geological Survey
VOR	Very High Frequency Omnirange

Application for a Route Permit for a High Voltage Transmission Line and Associated Substation Upgrades to Support Increased Load Growth in the Wilson Lake Area

Pursuant to Minn. Stat. § 116C.51 to 116C.69 and Minn. Rules pt. 4400.0400 et seq., Great River Energy (GRE) hereby makes application to the Minnesota Public Utilities Commission (Commission) for a Route Permit for an overhead 115 kilovolt (kV) high voltage transmission line (HVTL) and associated substation modifications in Crow Wing County, Minnesota to meet the electrical needs of GRE's member cooperative (Mille Lacs Energy Cooperative, Crow Wing Power, and East Central Energy, collectively "the cooperatives") customers located in the Wilson Lake area. A route permit is required because the proposed HVTL is capable of operating at a nominal voltage of more than 100 kV. A petition requesting a certificate of need (Docket No. ET-2/CN-06-367) from the Commission for the proposed HVTL has been filed simultaneously with this Application.

The Application is submitted under the Alternative Permitting Process (Minn. Rules pt. 4400.2000).

The Application is divided into 12 sections as follows:

1. **EXECUTIVE SUMMARY** – provides background information on GRE and the cooperatives and a brief description of the project.

2. **INTRODUCTION** – provides a discussion of the need for the project, eligibility for the Alternative Permitting Process, and the Certificate of Need process.

3. **PROJECT INFORMATION** – describes the proposed ownership of the line and associated facilities (Minn. Rules pt. 4400.1150, subp. 2A, B); the permittees for the project and contact information; and information about the project location, schedule and costs (Minn. Rules pt. 4400.1150, subp. 2K).

4. **ALTERNATIVES CONSIDERED AND REJECTED** – identifies alternate routes considered by the applicants and the reasons they were rejected (Minn. Rules pt. 4400.2100).

5. **DESCRIPTION OF THE PROPOSED PROJECT** – provides a detailed description of the proposed project (Minn. Rules pt. 4400.1150, subp. 2D), line and substation specifications, and design options to accommodate future expansion (Minn. Rules pt. 4400.1150, subp. 2L).

6. **ENVIRONMENTAL INFORMATION** – provides a description of the environmental setting, effects on environmental and human resources, and mitigative measures (Minn. Rules pt. 7849.0330 (G); Minn. Rules pt. 4400.1150, subp. 2E and 2F, and subp. 3), including the identification of land uses and environmental conditions along the proposed route.

7. **ENGINEERING AND OPERATIONAL DESIGN OF PROPOSED HVTL AND SUBSTATIONS**– describes engineering and operational design concepts for the proposed project, including electric and magnetic fields (Minn. Rules pt. 4400.1150, subp. 2J).

8. **PROPERTY/RIGHT OF WAY ACQUISITION AND RESTORATION** – describes existing utility and public rights of way along the proposed route (Minn. Rules pt. 4400.1150, subp. 2I) and procedures and practices proposed for acquisition and restoration of the right of way (Minn. Rules pt. 4400.1150, subp. 2M).

9. **CONSTRUCTION, OPERATION AND MAINTENANCE OF THE HVTL AND ASSOCIATED SUBSTATIONS** – provides a narrative description of the procedures and practices for construction, operation, and maintenance of the proposed line and substations (Minn. Rules pt. 4400.1150, subp. 2M).

10. **AGENCY/PUBLIC INVOLVEMENT AND PERMITS AND APPROVALS NEEDED** – a summary of agency and public involvement and a list and brief description of federal, state, and local permits that may be required for the proposed project (Minn. Rules pt. 4400.1150, subp. 2N).

11. **SUMMARY** – summarizes the key elements of the Route Permit Application and compares them to the established factors to be considered in evaluating this Application (Minn. Rules pt. 4400.3150 and Minn. Stat. § 116C.57).

12. **REFERENCES** – lists documents referenced in the text of the Application and data sources used to generate maps.

A United States Geological Survey (USGS) topographical map showing the entire length of the proposed route (Minn. Rules pt. 4400.1150, subp. 2H) is provided in Figure 6-1.

1. EXECUTIVE SUMMARY

1.1 General

Great River Energy (GRE) is a not-for-profit generation and transmission cooperative based in Elk River, Minnesota. GRE provides electrical energy and related services to 28 member cooperatives, including Mille Lacs Energy Cooperative (MLEC), Crow Wing Power (CWP), and East Central Energy (ECE), the distribution cooperatives serving the area proposed to be supplied by GRE's new transmission line (Figure 1-1). GRE's distribution cooperatives, in turn, supply electricity and related services to more than 500,000 residential, commercial, and industrial customers in Minnesota and Wisconsin

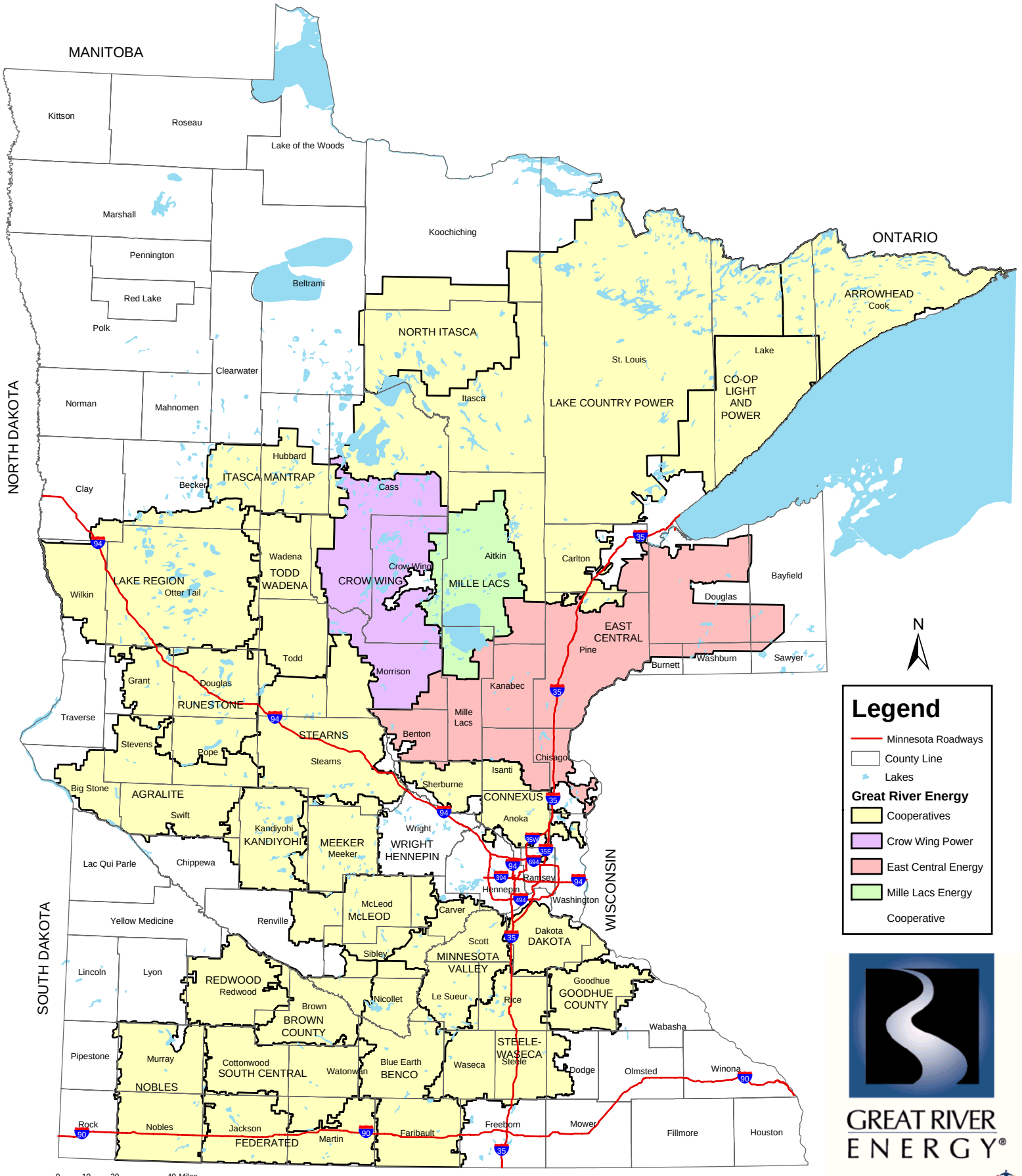
GRE's 2,679-megawatt (MW) generation system includes a mix of baseload and peaking plants, including coal-fired, refuse-derived fuel, and oil plants as well as new wind generators. GRE owns approximately 4,550 miles of transmission line in Minnesota, North Dakota, South Dakota, and Wisconsin.

MLEC, CWP and ECE (collectively, "the cooperatives") provide electricity and related services to approximately 110,000 residential, commercial and industrial customers in Minnesota. Approximately 19,000 residential, commercial and industrial customers in the Wilson Lake area would benefit from the proposed HVTL.

GRE and the cooperative's mission is to provide safe, reliable, competitively priced energy to those it serves. Continuing economic growth in the Lake Mille Lacs region of Minnesota has caused a considerable increase in electrical use in the area, especially on the northwest side of the lake. The addition of new electrical services and the increase in demand from existing services are causing electricity delivery concerns in the area. The existing electrical system, consisting of transmission lines and substations, is approaching its physical limit. Loss of any of four transmission segments may result in potential long-term outages. This situation has become a concern for both winter and summer peak periods, but with continued growth, the number of critical hours when an outage might occur during the year will continue to increase.

The North American Electric Reliability Council (NERC), which develops standards for implementing secure and safe electrical delivery, mandates that certain levels of service be maintained to insure that the transmission grid operates efficiently and reliably. In severe cases the transmission grid could collapse, which could result in regional blackouts. Electric utilities must maintain power quality at a level that prevents damage to all customers' electrical loads. Based on these mandates, transmission improvements are necessary for this region.

Figure 1-1
GRE Service Territory



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Great River Energy is responsible for meeting these mandates by constructing, operating and maintaining a reliable transmission system in the Lake Mille Lacs region of Minnesota.

The transmission alternatives for enhancing the Wilson Lake area's electric system are limited to either expansion or enhancement of the 69 kV system or building a 115 kV system. As explained in detail in Section 3, serving the customers in this growing area with the existing 69 kV transmission system, or even with an enhanced 69 kV transmission system, is not a reasonable, long-term solution for the area. GRE believes that a 115 kV system is the only feasible alternative for satisfying the long-term needs of the area.

1.2 Description of the Proposed Project

GRE has studied the power service to the region and has determined that new 115 kV electrical facilities are needed to meet existing electric load and future electric load requirements. The corridor studied and the proposed route is shown in Figure 1-2. The proposed plan to address the transmission system voltage issues in the area includes:

- Construct approximately 12 miles of new 115 kV transmission line between Minnesota Power's (MP) Mud Lake Substation in Oak Lawn Township and MLEC's Wilson Lake Substation in Bay Lake Township. The route for which GRE is requesting a permit from the Commission exits MP's Mud Lake Substation to the east side of GRE's existing 230 kV transmission line, proceeds north paralleling the 230 kV line for approximately 1.5 miles to the intersection of STH 18, then runs east along STH 18 for approximately 10.5 miles to the MLEC Wilson Lake Substation.

- Remove, upgrade, and attach most of the existing MLEC and CWP overhead distribution lines along STH 18 to the new transmission line. The centerline will be just outside road right of way.

- Modify the Mud Lake Substation to accommodate the termination of the new line.

- Rebuild and expand the Wilson Lake Substation to include a new 115/69 kV substation.

These facility additions will provide a strong power delivery source into the Lake Mille Lacs region. All of the critical contingencies issues will be resolved upon energization of the new facilities. A more detailed discussion of the need for this project is provided in Section 2 of this Application and in the Certificate of Need Application (Docket No. ET-2/CN-06-367) that was filed simultaneously with this Application.

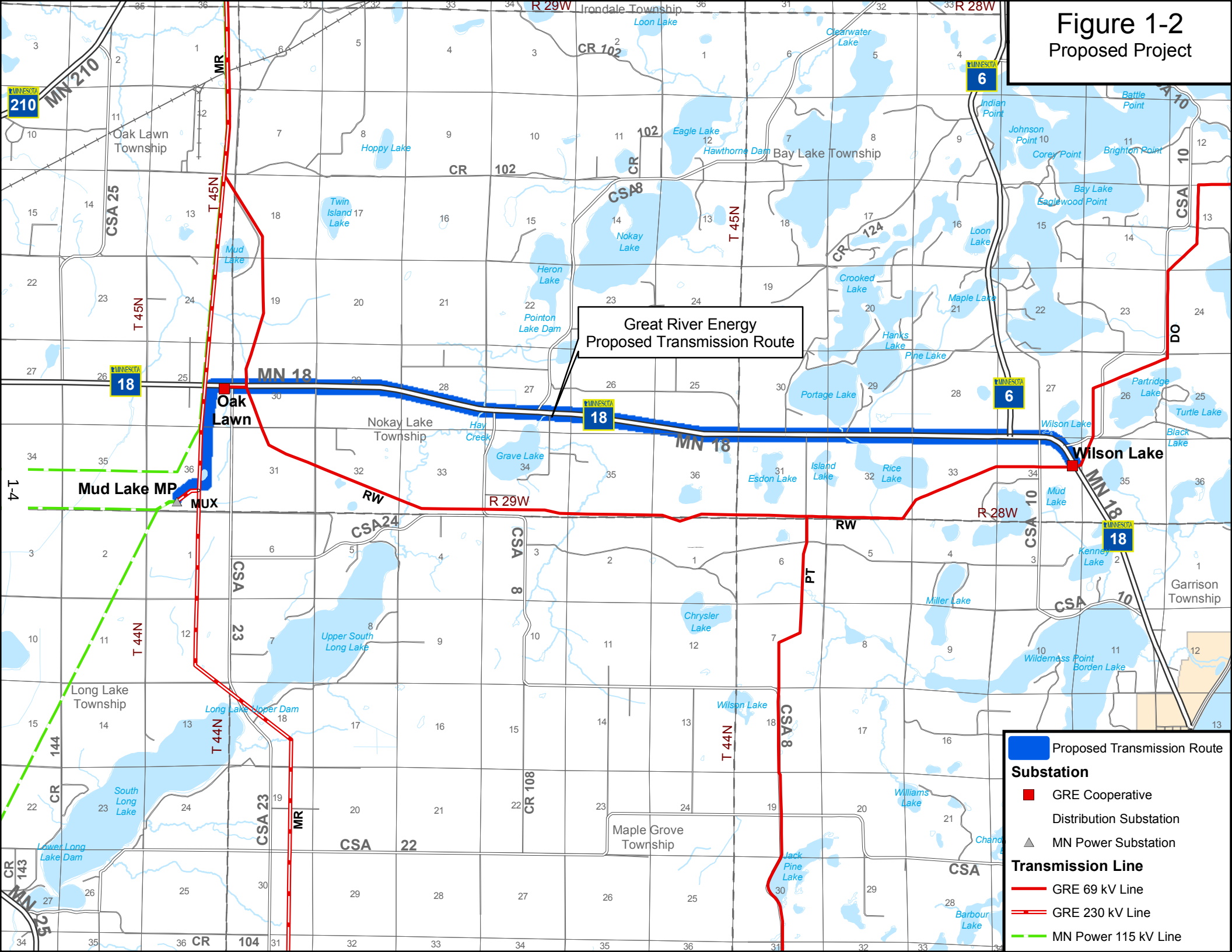
Figure 1-2
Proposed Project
Great River Energy
Proposed Transmission Route
Oak Lawn
Mud Lake MP
MUX
Wilson Lake
Oak Lawn Township
Nokay Lake Township
Bay Lake Township
Irondale Township
Long Lake Township
Maple Grove Township
Garrison Township
MN 18
MN 210
MN 25
CSA 25
CSA 24
CSA 23
CSA 22
CSA 8
CSA 10
T 45N
T 44N
R 29W
R 28W
RW
PT
MR
CR 102
CR 124
CR 108
CR 104
CR 143
CR 144
Proposed Transmission Route
Substation
GRE Cooperative
Distribution Substation
MN Power Substation
Transmission Line
GRE 69 kV Line
GRE 230 kV Line
MN Power 115 kV Line