



BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

**COMMENTS AND RECOMMENDATIONS OF THE
MINNEOSTA OFFICE OF ENERGY SECURITY
ENERGY FACILITY PERMITTING STAFF**

DOCKET NO. ET2/TL-10-86

Meeting Date: November 9, 2010.....Agenda Item # 3

Company: Great River Energy

Docket No: **ET2/TL-10-86**

**In the Matter of the Route Permit Application for the Potato Lake 115 kV
Transmission Line and Substation in Park Rapids, Minnesota.**

Issue(s): Should the Commission find that the environmental assessment and the record adequately address the issues identified in the scoping decision? Should the Commission issue a route permit identifying a specific route and permit conditions for the proposed Potato Lake 115 kV transmission line and substation?

EFP Staff: Scott E. Ek

Relevant Documents

Route Permit Application February 26, 2010
 Public Utilities Commission Application Acceptance Order April 16, 2010
 Environmental Assessment Scoping Decision..... July 18, 2010
 Environmental Assessment..... September 10, 2010
 Office of Administrative Hearings Summary of Public CommentsOctober 22, 2010

The enclosed materials are work papers of the Office of Energy Security (OES) Energy Facility Permitting (EFP) staff. They are intended for use by the Minnesota Public Utilities Commission (Commission) and are based on information already in the record unless otherwise noted.

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Documents Attached

- Figure 1 – Overview of Routes
- Exhibit List
- Findings of Fact, Conclusions of Law, and Order
- Proposed High-Voltage Transmission Line Route Permit

Note: Relevant documents and additional information can be found on eDockets (Docket 10-86) or the Commission’s Energy Facilities Siting and Routing website at: <http://energyfacilities.puc.state.mn.us/Docket.html?Id=26124>.

Statement of the Issues

Should the Commission find that the environmental assessment and the record adequately address the issues identified in the scoping decision? Should the Commission issue a route permit identifying a specific route and permit conditions for the proposed Potato Lake 115 kV transmission line and substation?

Introduction and Background

Great River Energy (GRE) is a not-for-profit generation and transmission cooperative based in Maple Grove, Minnesota. GRE provides electrical energy and related services to 28 member cooperatives, including Itasca-Mantrap Cooperative Electrical Association (Itasca-Mantrap), the distribution cooperative serving the area to be supplied by this proposed transmission line project.

On February 26, 2010, GRE filed a route permit application under the Alternative Permitting Process for 7.25 miles of 115 KV transmission line and a newly proposed Potato Lake Substation. GRE would be named Permittee for the proposed Project and would own the approximately 7.25 miles of 115 kV overhead transmission line. Itasca-Mantrap would own the proposed Potato Lake Substation, and has purchased 3.2 acres of land on which to construct the new facility. Itasca-Mantrap would own and operate all the associated low-voltage distribution facilities.¹

As indicated in GRE’s Route Permit Application, the electrical demand on the existing Itasca-Mantrap system in the Potato Lake area has averaged 6 percent growth since 2002. This growth has stressed the capacity of the Itasca-Mantrap system to reliably serve its membership and is demonstrated by an overload of the Mantrap substation transformer, overloaded system equipment, and low voltages in its service territory in the Potato Lake area. To correct these deficiencies and to maintain its ability to reliably provide electrical services to the Potato Lake area, Itasca-Mantrap is proposing the installation of the Potato Lake substation.

¹ Ex. 2 (Application).

The proposed location of the substation is near the areas of highest demand. Itasca-Mantrap contends that this location is critical in order to relieve loading on overloaded equipment and substations, provide emergency backup capability in case of failure of surrounding substations or circuits, improve the system reliability by reducing distribution line exposure, and provide the proper voltage support to all Potato Lake Area Itasca-Mantrap Members. Itasca-Mantrap further contends that other locations for the substation do not provide this benefit and defeat the intended purpose of adding the substation.

GRE, as transmission service provider to Itasca-Mantrap, is obligated to provide a transmission interconnection to substations owned by its membership (i.e. Itasca-Mantrap). The nearest transmission line to provide the interconnection for the Potato Lake substation is the 34.5 kV line that connects the Mantrap substation to the transmission network.

Project Site

The proposed 115 kV Potato Lake transmission Project would be located northeast of the city of Park Rapids in Hubbard County, Minnesota. The Project would specifically be located in sections of Arago, Lake Emma, Todd, and Henrietta townships (*See Figure 1*).

Project Description

The project as described in the Applicant's Route Permit Application would consist of the following:

- Construction of a new 115 kV Potato Lake Substation that would initially be operated at 34.5 kV until conversion to 115 kV is necessary.
- Construction of approximately 7.25 miles of new overhead 115 kV transmission line between the new Potato Lake Substation in section 21 of Arago Township and a tap point on GRE's existing Mantrap Sub Tap 34.5 kV ("PM Line") line in section 5 of Henrietta Township and section 32 of Lake Emma Township. The newly proposed transmission line would initially be operated at 34.5 kV until the surrounding transmission system is converted to 115 kV.
- Approximately 2.25 miles of existing 12.5 kV distribution line owned by Itasca-Mantrap would be removed, upgraded and attached (underbuilt) to the proposed 115 kV structures along U.S. Highway 71 between the new Potato Lake Substation and 230th Street/Northern Pine Road.
- Installation (underbuild) of new 12.5 kV distribution lines on the proposed 115 kV structures along 230th Street/Northern Pine Road and 141st Avenue up to the intersection with County Highway 18.

Transmission Line Route

The Proposed Route exits the new Potato Lake Substation in section 21 of Arago Township along U.S. Highway 71 and proceed south paralleling U.S. Highway 71 for approximately 1.5 miles to 230th Street (Northern Pine Road); east along 230th Street for approximately 1.5 miles to 141st Avenue; south approximately 1 mile along 141st avenue to County Highway 18; then east paralleling County Highway 18 for approximately 3.25 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township and section 32 of Lake Emma Township along County Highway 4. (*See Route A, Figure 1*).

The Applicant is requesting a 300-foot route width that extends 150 feet on either side of the road centerlines or existing electric utility (distribution) right-of-way for the entire route and depicted in the Official Route Permit Maps.

Alternative Route

The Alternate Route as described in the Route Permit Application is similar to the Preferred Route with the exception that at 230th Street (Northern Pine Road) the route continues east along 230th Street for two miles, south one mile following the boundary between sections 35 and 36 of Arago Township to County Highway 18, then east paralleling County Highway 18 for approximately 2.75 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township and section 32 of Lake Emma Township along County Highway 4. The Alternate Route is 7.25 miles long. (*See Route B, Figure 1*).

Right-Of-Way

A 100 foot right-of-way will be required for construction of the 115 kV transmission line, 50 feet on either side of the transmission centerline.

Regulatory Process and Procedures

In accordance with Minn. R. 7850.1300, subp. 2, “No person may construct a high voltage transmission line without a route permit from the commission. A high voltage transmission line may be constructed only within a route approved by the commission.” In this case, Minn. R. 7850.1000, subp. 9, defines a high-voltage transmission line as, “...a conductor of electric energy and associated facilities designed for and capable of operating at a nominal voltage of 100 kilovolts or more either immediately or without significant modification. Associated facilities shall include, but not be limited to, insulators, towers, substations, and terminals.”

The route application was reviewed under the Alternative Permitting Process (Minn. R. 7850.2800 to 7850.3900) of the Power Plant Siting Act (Minn. Stat. § 216E). The Alternative Permitting Process is shorter than the full permitting procedures and does not require the Applicant to propose alternative routes to the preferred route, but does require the Applicant to disclose rejected route alternatives and an explanation of why they were rejected.

Route Permit Application and Acceptance

On January 28, 2010, GRE filed a letter with the Commission noticing their intent to submit a route permit application under the alternative permitting process. On February 26, 2010, GRE filed a route permit application for construction of approximately 7.25 miles of new 115 kV transmission line and a new Potato Lake 115 kV Substation. The Commission accepted the application as complete on April 16, 2010.²

Advisory Task Force

As authorized by the Commission, the Office of Energy Security (OES) Energy Facility Permitting (EFP) staff established an advisory task force (ATF). The ATF was charged with: 1) identifying specific impacts and issues of local concern, and 2) identifying potential alternative transmission line routes or route segments and alignments that may maximize positive impacts and/or minimize or avoid negative impacts of the project.³

The task force met two times in May 2010, and generated a number of issues and concerns including one alternative route, the ATF Alternative Route (*Renamed* Route C). The recommendations of the ATF were considered during the preparation of the scope and can be found in their final report at:

<http://energyfacilities.puc.state.mn.us/admin/resource.html?Id=27692>.

ATF Alternative Route (Route C)

Route C would exit the Potato Lake Substation to be located in one of three locations in the northern one-half of sections 5 and 6 of Arago Township, along U.S. Highway 71; proceed north along U.S. Hwy. 71 for approximately 1 mile; east along the north-south boundaries of Arago/Clover and Lake Emma/Clay townships through undeveloped forest and wetland for approximately 8 miles, then south for approximately 6.6 miles along County Highway 4 terminating at a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township and section 32 of Lake Emma Township along County Highway 4. The total length of this route would be approximately 13 miles.

Public Information and Environmental Assessment Scoping Meeting

EFP staff held a public information and environmental assessment scoping meeting on May 18, 2010, at Park Rapids High School in Park Rapids, Minnesota, to discuss the project with the public and gather public input for the scope of the environmental assessment to be prepared. The public was provided until June 1, 2010, to submit written and email comments. EFP staff received a total of 85 comment letters that were reviewed and considered during preparation of the scoping decision.⁴

² Ex. 11 (Commission Order Accepting Application).

³ Ex. 13 (ATF Structure and Charge).

⁴ Ex. 19 (Scoping Decision).

The following issues and concerns were raised in oral comment at the public scoping meeting and through submission of comment letters: Aesthetics, Avian Concerns/Flight Diverter, Construction Activities, Cost Easements and Right-of-way, Electric and Magnetic Fields, Groundwater and Domestic Wells, Herbicides/Pesticides Impaired Waters, Interference, Invasive Species, Project Need, Property Values, Proximity to Homes/Businesses/Structures, Rare and Endangered Species, Recreation and Tourism Restoration Methods, Surface Water Resources, Tree Loss Along Right-of-Way, Undergrounding as a Mitigation, and Zoning.⁵

Four alternative routes were suggested through comment: the Miller Alternative Route, Fortune Drive Alternative Route, ATF Alternative Route, and the County Road 40 Route. With the exception of the ATF Alternative Route (Route C), three alternatives were not considered for further evaluation in the Environmental Assessment (EA), as they had a greater potential impact to human settlement and the environment when compared to the Applicant's Proposed Route.

EFP staff found it reasonable to evaluate the Applicant's Proposed Route, Applicant's Alternate Route, as described in the Route Permit Application, and the ATF Alternative Route. The scoping decision for the environmental assessment was signed by the director of the OES on June 18, 2010.⁶

Public Hearing

EFP staff made request to the Minnesota Office of Administrative Hearings for an administrative law judge to preside over the public hearing and provide a summary of testimony.

Administrative Law Judge Kathleen Sheehy presided over the public hearing conducted on September 29, 2010. The public hearing was held at Century Middle School in Park Rapids, Minnesota. Approximately 48 members of the public attended the hearing.

Judge Sheehy provided an opportunity for members of the public to ask questions or comment on the proposed project verbally and also advised them they could send her written comments before the end of the comment on October 11, 2010, that was extended to October 12, 2010, due to a federal holiday. The Administrative Law Judge's Summary of Public Comments was filed by the Office of Administrative Hearings October 22, 2010.⁷ Judge Sheehy's summary provides a summation of comments heard at the hearing and public comment letters received during the comment period.

⁵ Ex. 19 (Scoping Decision).

⁶ Ex. 19 (Scoping Decision).

⁷ Ex. 37 (ALJ Report).

Public Hearing Comments

The majority of oral public comments at the public hearing were focused on opposition to a particular route under review; questions on why the project is needed, and if it is needed; concerns regarding removal of mature trees and other vegetation that will be necessary for the transmission right-of-way and whether property owners would be compensated for easements and removal of vegetation; number of residences and their proximity to the proposed line along all routes; request that poles be placed as close to road as possible and designed to be the same height as existing trees, if feasible; the feasibility of an access and maintenance road to be constructed between U.S. Hwy 71 and County Highway 4 for Route C; general environmental impacts associated with all routes; and use of existing rights-of-way for all routes.⁸

Standards for Permit Issuance

The Power Plant Siting Act sets standards and criteria and outlines the factors to be considered in determining whether to issue a permit for a high voltage transmission line (Minn. Stat. § 216E and Minn. R. 7850.4000). The law also allows the Commission to place conditions on high voltage transmission line permits (Minn. Stat. § 216E.03 and Minn. R. 7850.4600).

EFP Staff Analysis and Comments

EFP staff has prepared the attached proposed Findings of Fact, Conclusions of Law, and Order and Route Permit. The Findings show that the alternative permitting process has been conducted in accordance with Minn. R. 7850.2800 to 7850.3900, identify route impacts and mitigation measures, and make conclusions of law and order. The proposed route permit includes measures to ensure the line is constructed in a safe, reliable manner and that impacts are minimized or mitigated. A list of documents that are part of the record in this proceeding is included on the attached Exhibit List.

In weighing the differences of the routes for the proposed project, staff was guided by the state's policy of choosing locations that minimize adverse human and environmental impact while insuring continuing electric power system reliability and integrity (Power Plant Siting Act, Minn. Stat. § 216E).

EFP staff reached its conclusions and recommendations based on the analysis in the EA and the comments received in this record.

Public Comments

EFP staff reviewed the public comment letters sent to Judge Sheehy during the public hearing comment period. EFP staff would like to highlight or has comments on the following letters.

⁸ Ex. 29 (Public Hearing Transcript).

Great River Energy Letter

In its October 12, 2010, letter to the ALJ, GRE answers the question of need for this project, provides information of GRE's efforts related to energy conservation and efficiency and the feasibility or applicability of alternate methods of power generation, and the difference between the existing 34.5 kV distribution facilities and the proposed 115 kV transmission facilities.⁹

Minnesota Department of Natural Resources

In its October 11, 2010, letter to the ALJ, the Minnesota Department of Natural Resources (MnDNR) indicated that the EA compares the potential effects of each route alternative in a manner that allowed MnDNR to make their recommendation. The MnDNR indicated in its letter that, "Based on the information contained in the EA, it would appear that Routes A or B have the least potential for negative environmental effects. As previously described in DNR comments, Trumpeter Swan mortality appears to be a possibility along Routes A and B. However, there is also a similar possibility with Route C, due to the many small wetlands, lakes and documented species occurrences in the vicinity.

Thus, Route C would likely not provide a solution for avian concerns, and also presents higher potential for other environmental effects as described in the EA."¹⁰

The MnDNR recommends that the Commission require re-vegetation for all areas identified as areas of biodiversity significance.¹¹

EFP Response

Section 4.2.7 of the Route Permit addresses the issue of re-vegetation practices and provides that all areas disturbed during construction of the facilities will be returned to their pre-construction condition and that when utilizing seed to establish temporary and permanent vegetative cover on exposed soil the Permittee will consult with the Minnesota Department of Transportation (Mn/DOT) and MnDNR to select site characteristic seed certified to be free of noxious weeds.

The MnDNR also recommends that the Route Permit include provisions that would require the Applicant to use large "swan type" bird diverters over all public water crossings and that the number and spacing of diverters be coordinated with the MnDNR, if avian survey information is not available to determine the avian risk at public water crossings prior to a route decision by the Commission. In lieu of avian risk information for the area where the line would cross public waters, the MnDNR recommends that the Route Permit require that the Applicant use H-frame structure design when crossing all public waters.¹²

⁹ Ex. 32 (GRE to ALJ Comment Letter).

¹⁰ Ex. 33 (MnDNR to ALJ Letter).

¹¹ Ex. 33 at. p. 1 (MnDNR to ALJ Letter).

¹² Ex. 33 at. p. 2 (MnDNR to ALJ Letter).

EFP Response

Section 5.2 of the Route Permit would require the Permittee to develop strategies in an Avian Mitigation Plan that will be implemented to avoid or minimize impacts to birds or their habitats at the Potato River crossing, the public water crossing of concern on the recommended route. The Permittee is to consult with the MnDNR and USFWS in developing the Plan. The Avian Mitigation Plan will be submitted to the Commission with the Plan and Profile for the Project.

The MnDNR also indicates that should Route C be approved, coordination between the MnDNR and Applicant will be necessary as an Endangered Species Takings Permit for the state-listed endangered bog adder's mouth plant that is located within Route C may be necessary.¹³

United States Fish and Wildlife Service

The USFWS raises concern over the potential for the project to contain Important Eagle Use Areas and recommends, in its October 8, 2010, letter, that the Applicant complete surveys for eagle foraging, roosting, or wintering areas within two miles of any potential line placements. The USFWS also suggests the Applicant conduct surveys for Trumpeter Swans along Route C.¹⁴

EFP Response

The Route Permit Application at section 5.2 would require that the Permittee's standard transmission design incorporate adequate spacing of conductor(s) and grounding devices in accordance with Avian Power Line Interaction Committee (APLIC) standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices.

As part of the Avian Mitigation Plan for the Potato River, the Permittee is to consult with the MnDNR and USFWS to ensure construction activities are scheduled to avoid disturbing normal eagle breeding, feeding, or sheltering behavior, as necessary. The Permittee shall ensure the project conforms with the requirements of the Bald and Golden Eagle Protection Act in consultation with the USFWS, including any required surveys.

Letter and Petition of Mark and Linda Larson

The Larson's submitted a letter and petition indicating significant problems along Route C and that they are against the selection based on the facts in their letter. The petition was signed by 36 people.¹⁵

Petition for a Contested Case Hearing

Seven similar petitions requesting a contested case hearing in this matter were submitted and signed by 134 persons. The petitions refer to Minn. R. 7850.2600, subp. 1, that provides for a contested case hearing when a route permit application is being reviewed pursuant to the full permitting process (Minn. R. 7850.1700 to 7850.2700).

¹³ Ex. 33 at p. 2 (MnDNR to ALJ Letter).

¹⁴ Ex. 34 (USFWS to ALJ Letter).

¹⁵ Ex. 37 at p. 15 Item IIIB68 (ALJ Report).

This Project is eligible for, and is being reviewed under the alternative permitting process¹⁶ (Minn. R. 7850.2800 to 7850.3900); that process does not provide for a contested case hearing or include provisions for requesting a contested case hearing.

Environmental Assessment Analysis

The Applicants' Proposed (**Route A**), Applicant's Alternate (**Route B**), and the ATF Alternative Route (**Route C**) transmission line routes were examined in detail in the environmental assessment (EA) and were discussed at the public hearing and during comment period. EFP staff examined the potential human and environmental impacts of each route.¹⁷

Proximity to Homes

All three routes will pass within 50-500 feet from a similar amount of structures. The number of homes along each route as presented in the EA was questioned by Ms. Sandra Sugelmeyer.¹⁸ Information gathered for the EA on transmission line proximity to homes, businesses, and commercial property indicated that there were a total of 54 structures along Route A, 52 structures along Route B, and 52 structures along Route C.

After the public meeting a new count of structures that includes homes, homes/commercial, and accessory structures was performed for all three routes being evaluated.¹⁹ The new structure count indicates a similar distribution, but slightly higher number of structures along each route and is summarized in the following table.

Route	50-100 feet	101-200 feet	201-300 feet	301-500 feet	Total Structures
Route A	4	17	15	24	60
Route B	4	14	8	20	46
Route C	4	15	22	23	64

The distribution of structures along each route is similar with the exception of Route B. The number of homes along Route B declines in the area where route B would run cross-country south from 230th Street approximately one mile following the boundary between sections 35 and 36 (Arago Township) to County Highway 18. This section of Route B avoids 141st Street and one-half mile of County Highway 18, where Route A would run.

¹⁶ Ex. 11 (Commission Order Accepting Application).

¹⁷ Ex. 21 (Environmental Assessment).

¹⁸ Ex. 29 at p. 30 (Hearing Transcript)

¹⁹ Ex. 30 (GRE House Count Letter).

Use of Existing Right-of-Way

Route A would follow and share existing road or electric utility rights-of-way for 100 percent of its route. Route B would follow and share existing road or electric utility rights-of-way for 86 percent of its route with the exception of a one mile segment that would follow the boundary between sections 35 and 36 in Arago Township, requiring a new 100-foot right-of-way through mostly undeveloped forest and wetlands through that area. Route C would follow and share the least amount of existing right-of-way at 54 percent, following section lines between Clover and Clay townships from U.S. Highway 71 east to County Highway 4 through undeveloped forest and wetlands, including one preliminary site of High Biodiversity, requiring a new 100-foot right of way through that area. Routes B and C would require the creation of either one or six miles of new right-of-way, respectively.

Route Length, Certificate of Need, and Cost

Route A and Route B are both 7.25 miles long, Route C is 13 miles long. Pursuant to Minn. Stat. § 216B.243, subd. 2, Route C would require a certificate of need, Route A and Route B would not. Route A would cost \$4.4 million to construct, Route B \$4.5 million, and Route C \$10.7 million.

Sites of Biodiversity Significance and Endangered Species

The Minnesota County Biological Survey identified two preliminary sites of Moderate Biodiversity Significance immediately west of U.S. Highway 71 and along County Highway 18 for Routes A and B.²⁰

The approximate eight mile section of Route C that would run through undisturbed forest and wetland areas between U.S. Highway 71 and County Highway 4 and would bisect areas identified by the Minnesota County Biological Survey as preliminary Sites of High Biodiversity Significance.

The MnDNR indicates that the undisturbed area of Route C that would run through forest and wetland areas between U.S. Highway 71 and County Highway 4 provides habitat for several colonies of bog adder's mouth, which is an endangered plant in Minnesota. Route A and B would not impact any known state or federal endangered species.

Route C would result in greater habitat fragmentation impacts than Routes A or B, as it contains large areas of contiguous habitat between U.S. Highway 71 and County Highway 4. Transmission line encroachments into large areas of contiguous habitat, such as those associated with Route C may result in changes to avian activity and increases avian fatality.²¹

²⁰ Ex. 21 at p. 55 (EA).

²¹ Minnesota Department of Natural Resources, email, August 19, 2010; Ex. 21 at p. 54 (EA).

Avian Concerns

All three routes would cross surface waters that have been identified by the Minnesota Department of Natural Resources (MnDNR) and the U.S. Fish and Wildlife Service as possible natural flyways for Trumpeter Swans, waterfowl and raptors. Route A and Route B would cross the Potato River at the same location as County Highway 18. Route C would pass between Upper and Lower Mud lakes and associated wetlands.

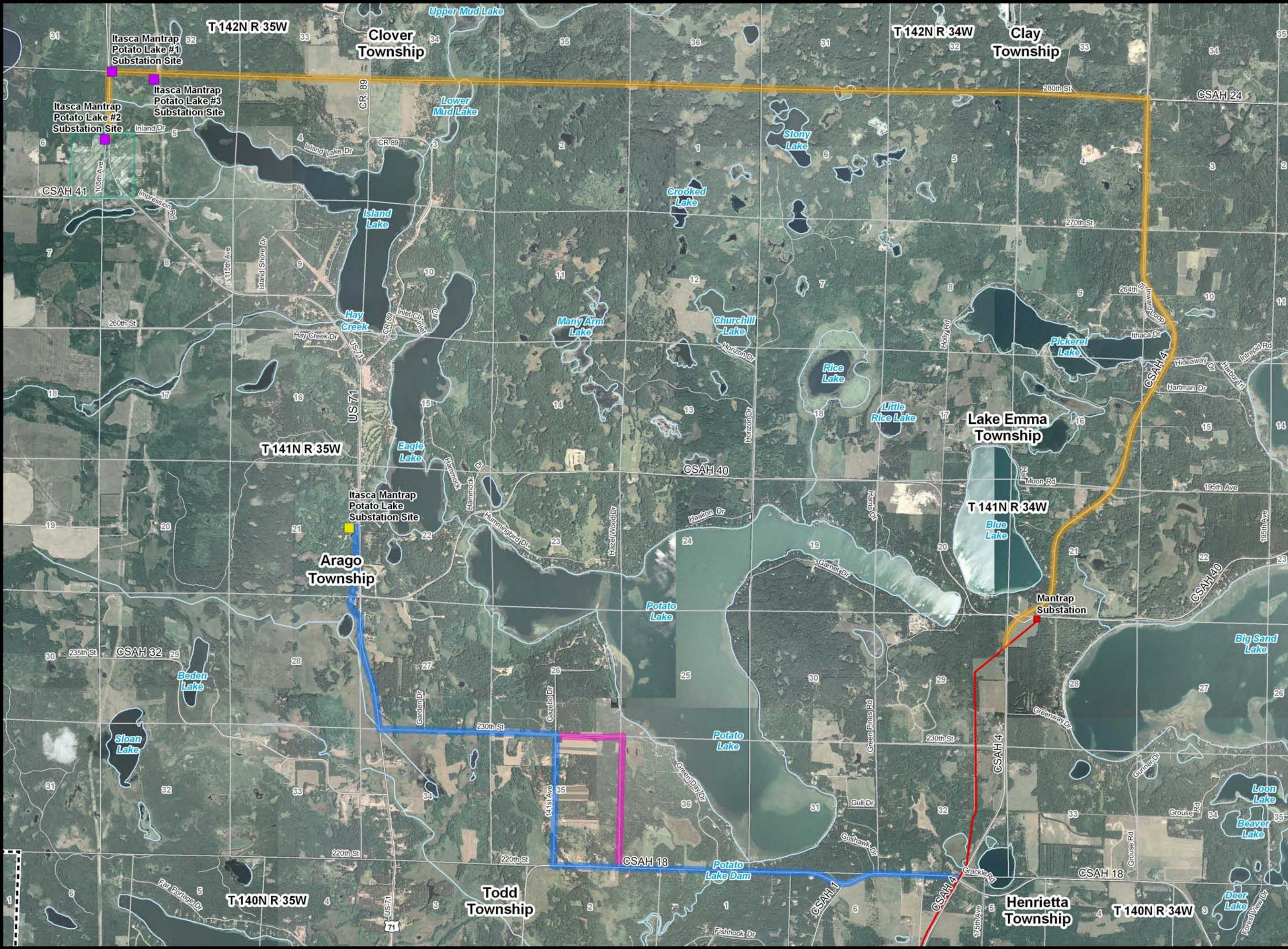
An Avian Mitigation Plan in the immediate area of the Potato River, will be completed to assist in determining appropriate structure design, bird flight diverter design, and siting of structures, as a condition of the Route Permit.

Based on the above, EFP staff conclude that Route A is a more reasonable and prudent alternative route that best minimizes adverse human and environmental impacts when compared to Route B and Route C. Route A meets the statutory and rule criteria by following existing road and utility rights-of-way for its entire route, thereby having less impact on the environment while imposing no greater impact on human settlement along the route, when compared to the Route B and Route C. Route A is equal to or shorter than Route B and Route C in total length, and is also less in cost than Route B and Route C.

Commission Decision Options

- A. Approve and adopt the Findings of Fact, Conclusions of Law and Order for the Great River Energy 115 kV overhead transmission line between a new Potato Lake Substation in section 21 of Arago Township and the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township which:
 - 1. determines that the environmental assessment and record created at the public hearing address the issues identified in the environmental assessment scoping decision;
 - 2. approves Route A for the construction of the transmission line; and
 - 3. issues a high-voltage transmission line route permit, with appropriate conditions, to Great River Energy.
- B. Approve and adopt the Findings of Fact, Conclusions of Law and Order as above while imposing any further permit conditions as deemed appropriate.
- C. Amend the Findings of Fact, Conclusions of Law and Order and route permit as deemed appropriate.
- D. Make some other decision deemed more appropriate.

Energy Facility Permitting Staff Recommendation: Option A (1-3).



- Proposed Itasca-Mantrap (IM)
 - Distribution Substation
 - Distribution Substation
 - Property For Sale
- Existing Itasca-Mantrap
 - Distribution Substation
- Proposed Great River Energy (GRE)
 - Route A
 - Route B
 - Route C
- Existing Great River Energy
 - 34.5 kV Transmission Line
- Land Base Features
 - Road Centerline
 - PLS Section Lines



Updated: 10/19/2010



Data Sources Vary Between
MNDOT, MNDNR, MNGEO
and Great River Energy
2009 Color Orthophotos from
Farm Services Administration (FSA)

Map Projection:
UTM, NAD83, Zone15, Meters

**Potato Lake
115 kV Transmission
Line & Substation
Project:**

**Figure 1
Overview of
Routes**



IN THE MATTER OF THE ROUTE PERMIT
 APPLICATION FOR THE POTATO LAKE
 115 KV TRANSMISSION LINE AND
 SUBSTATION IN PARK RAPIDS,
 MINNESOTA

EXHIBIT LIST
 PUC Docket No. ET2/TL-10-86

Exhibit Number	Date	Description	eDockets Number
1.	January 28, 2010	Notice of Intent to File Application Pursuant to Alternative Permitting Process	20101-46528-01
2.	February 26, 2010	Route Permit Application	20102-47508-01 20102-47508-02 20102-47508-03 20102-47508-04 20102-47508-05
3.	March 3, 2010	Confirmation of Mailing for Notice of a Submittal of an Application for a Route Permit	20103-48382-01
4.	March 6, 2010	Confirmation of Publication for Notice of a Submittal of an Application for a Route Permit (<i>Park Rapids Enterprise</i>)	20103-48382-01
5.	March 10, 2010	Confirmation of Publication for Notice of a Submittal of an Application for a Route Permit (<i>Northwoods Press</i>)	20103-48382-01
6.	March 12, 2010	Notice of Commission Meeting for Route Permit Application Acceptance Decision	20103-47956-06
7.	eFiled on March 17, 2010, for the March 25, 2010, Commission Meeting	Comments and Recommendations of the Minnesota Office of Energy Security Energy Facility Permitting Staff	20103-48112-01
8.	eFiled on March 22, 2010, for the March 25, 2010, Commission Meeting	REVISED Comments and Recommendations of the Minnesota Office of Energy Security Energy Facility Permitting Staff	20103-48231-01 20103-48209-01

Exhibit Number	Date	Description	eDockets Number
9.	March 26, 2010	Great River Energy Filing of Demand Statistics, per Commission Order	20103-48375-01
10.	March 24, 2010	Great River Energy Response Letter	20103-48323-01 20103-48327-01
11.	April 16, 2010	Minnesota Public Utilities Commission Order Accepting Application as Complete	20104-49243-01
12.	April 19, 2010	Notice of Public Information Meeting	20104-49293-01
13.	April 20, 2010	Advisory Task Force Structure and Charge	20104-49334-01
14.	----	Comment Letters on the Scope of the Environmental Assessment	20103-48202-01 20103-48203-01 20103-48225-01 20103-48232-01 20103-48287-01 20103-48295-01 20103-48296-01 20103-48297-01 20104-48788-01 20104-48789-01 20104-49264-01 20104-49333-01 20104-49445-01 20105-50263-01 20105-50298-01 20105-50316-01 20105-50317-01 20105-50344-01 20105-50344-02 20105-50344-03 20105-50345-01 20105-50345-02 20105-50345-03 20105-50350-01 20105-50524-01 20105-50742-01 20105-50769-01 20106-51055-01 20106-51102-01 20106-51125-01 20106-51502-01 20106-51502-02

Exhibit Number	Date	Description	eDockets Number
			20106-51502-03 20106-51502-04 20106-51502-05 20106-51502-06
15.	May 5, 2010	Published Notice of Public Information Meeting	20109-54680-01
16.	May 18, 2010	Scoping Meeting Comments Report	20106-51762-01
17.	June 1, 2010	Itasca Man-Trapp Coop Response Letter	20106-51123-01
18.	June 1, 2010	Final Report of the Advisory Task Force	20109-54661-01
19.	July 18, 2010 June 25, 2010	Scoping Decision Document	20106-51761-01 20106-51969-01
20.	July 16, 2010	New Landowner Notice	20107-52727-01
21.	September 10, 2010	Environmental Assessment	20109-54340-01 20109-54340-02 20109-54340-03
22.	September 13, 2010	Submittal of Environmental Assessment to State and Federal Agencies	20109-54367-01
23.	September 10, 2010 September 13, 2010 September 14, 2010	Notice of Public Hearing and Availability of Environmental Assessment	20109-54330-01 20109-54362-01 20109-54427-01
24.	September 15, 2010	Certified Notice of Public Hearing and Availability of Environmental Assessment	20109-54481-01
25.	September 18, 2010	Published Notice of Public Hearing and Availability of Environmental Assessment and Affidavit (<i>Park Rapids Enterprise</i>)	20109-55053-01
26.	September 20, 2010	Published Notice of Public Hearing and Availability of Environmental Assessment and Affidavit (<i>Northwoods Press</i>)	201010-55280-01

Exhibit Number	Date	Description	eDockets Number
27.	September 20, 2010	Notice of Public Hearing and Availability of Environmental Assessment as Published in <i>EQB Monitor</i>	20109-54662-01
28.	October 10, 2010	Administrative Law Judge Comment Date Extension Letter	201010-55258-01
29.	October 20, 2010	Public Hearing Transcript	201010-55635-01
30.	October 21, 2010	GRE House Count Letter	201010-55697-01
31.	August 19, 2010	Minnesota Department of Natural Resources email to OES	201010-55251-01
32.	October 12, 2010	Great River Energy to Administrative Law Judge Comment Letter	201010-55457-04
33.	October 11, 2010	Minnesota Department of Natural Resources to Administrative Law Judge Comment Letter	201010-55457-03
34.	October 8, 2010	U.S. Fish and Wildlife Service to Administrative Law Judge Comment Letter	201010-55352-01
35.	October 18, 2010	Notice of Commission Meeting for Route Permit Decision	201010-55479-03
36.	October 21, 2010	Revised Notice of Commission Meeting for Route Permit Decision	201010-55768-02
37.	October 22, 2010	Administrative Law Judge Summary of Hearing Comments	201010-55713-01
38.	October 11, 2010	Itasca-Mantrap Coop to Administrative Law Judge Comment Letter	201010-55457-05

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

David Boyd
J. Dennis O'Brien
Phyllis Reha
Thomas Pugh
Betsy Wergin

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Route Permit Application for the Potato Lake 115 kV Transmission Line and Substation in Park Rapids, Minnesota.	ISSUE DATE: DOCKET NO. ET2/TL-10-86 FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER ISSUING A ROUTE PERMIT TO GREAT RIVER ENERGY FOR A 115 KILOVOLT TRANSMISSION LINE AND ASSOCIATED FACILITIES
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The above matter came before the Minnesota Public Utilities Commission on October 28, 2010, acting on an application by Great River Energy, for a route permit to construct a new 7.25-mile 115 kilovolt (kV) transmission line between a newly proposed Potato Lake substation to be constructed in Arago Township and a tap point on Great River Energy's existing Mantrap Sub Tap 34.5 kV transmission line in Lake Emma Township, Hubbard County, Minnesota. The new 115 kV transmission facility line would initially be operated at 34.5 kV until conversion to 115 kV becomes necessary

A public hearing was held on September 29, 2010, at Century Middle School in Park Rapids, Minnesota. The hearing was presided over by Judge Kathleen Sheehy, Administrative Law Judge (ALJ) for the Minnesota Office of Administrative Hearings (OAH). The hearing continued until all persons who desired to speak had done so. The comment period closed on October 12, 2010, at 4:30 p.m.

STATEMENT OF ISSUE

Should the Commission find that the environmental assessment and the record adequately address the issues identified in the scoping decision? Should the Commission issue a route permit identifying a specific route and permit conditions for the proposed 115 kV transmission line from a Potato Lake Substation to a tap point on Great River Energy's existing Mantrap Sub Tap 34.5 kV?

Based upon all of the proceedings herein, the Commission makes the following:

FINDINGS OF FACT

Applicant

1. Great River Energy (GRE or Applicant) is a not-for-profit generation and transmission cooperative based in Maple Grove, Minnesota. Great River Energy provides electrical energy and related services to 28 member cooperatives, including Itasca-Mantrap Cooperative Electrical Association, the distribution cooperative serving the area to be supplied by this proposed transmission line project.¹
2. The Applicant applied for a high-voltage transmission line route permit to construct a 115 kV transmission line and substation. The Applicant maintains that the existing 34.5 kV Itasca-Mantrap distribution system serving the area has reached its capacity limit based on continuous growth of electric demand averaging over 4 percent per year since 2002. The Applicant has determined that the existing 34.5 kV system serving the area will eventually be unable to support the area electric load, and a higher voltage will be required to provide adequate system support, thus the reason for proposing the Potato Lake 115 kV transmission project.²

The Project

3. The proposed 115 kV Potato Lake Transmission Project (Project) would be located northeast of the city of Park Rapids in Hubbard County, Minnesota. The project would specifically be located in sections of Arago, Lake Emma, Todd, and Henrietta townships. GRE proposed two possible routes for the transmission line, a preferred route and an alternate route.³
4. The Preferred Route is 7.25 miles of new overhead 115 kV transmission line between the new Potato Lake Substation in section 21 of Arago Township and a tap point on GRE's existing Mantrap Sub Tap 34.5 kV line in section five of Herietta Township.⁴

¹ Ex. 2 at p. 1-1 (Application).

² Ex. 2 (Application).

³ Ex. 21 at p. 1 (EA).

⁴ Ex. 2 Figure 5-7 at p. 5-10 (Application).

5. The Proposed Route exits the new Potato Lake Substation in section 21 of Arago Township along U.S. Highway 71 and proceeds south paralleling U.S. Highway 71 for approximately 1.5 miles to 230th Street (Northern Pine Road); east along 230th Street for approximately 1.5 miles to 141st Avenue; south approximately 1 mile along 141st Avenue to County Highway 18; then east paralleling County Highway 18 for approximately 3.25 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township and section 32 of Lake Emma Township along County Highway 4.⁵ The Proposed Route is 7.25 miles long.
6. The Alternate Route as described in the route permit application is similar to the Preferred Route with the exception that at 230th Street (Northern Pine Road) the route continues east along 230th Street for two miles, south one mile following the boundary between sections 35 and 36 of Arago Township to County Highway 18, then east paralleling County Highway 18 for approximately 2.75 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township and section 32 of Lake Emma Township along County Highway 4. The Alternate Route is 7.25 miles long.⁶
7. The new Potato Lake substation will be a fenced-in area of 96 feet by 146 feet on a 3.2 acre parcel located in section 21 of Arago Township, along U.S. Highway 71. Itasca-Mantrap has purchased 3.2 acres of the land and will own all common facilities (land, fence, etc.).⁷
8. The Project will initially be operated at 34.5 kV until conversion to 115 kV is necessary.⁸
9. Approximately 2.25 miles of existing 12.5 kV distribution line owned by Itasca-Mantrap would be removed, upgraded and attached/underbuilt to the new 115 kV structures along U.S. Highway 71 between the new Potato Lake Substation and 230th Street (Northern Pine Road).⁹
10. The Project also consists of installation/underbuild of new 12.5 kV distribution lines on the new 115 kV structures that follow along 230th Street (Northern Pine Road) and 141st Avenue up to the intersection with County Highway 18.¹⁰

⁵ Ex. 2 Figures 5-2 to 5-7 at pp. 5-5 to 5-10 (Application).

⁶ Ex. 2 Figures 5-8 and 5-9 at pp. 5-11 to 5-12 (Application).

⁷ Ex. 2 at p. 5-1 (Application).

⁸ Ex. 2 at p. 1-3 (Application).

⁹ Ex. 2 at p. 1-3 (Application).

¹⁰ Ex. 2 at p. 1-3 (Application).

Structure Types and Spans

11. The Applicant proposes to use single-pole, direct-embedded wood structures. The poles will average 65 to 80 feet in height with spans of 300 to 400 feet between poles. Horizontal post insulators will be used unless design requires longer spans beyond the capability of the insulators, in which case a braced post design will be utilized to accommodate the increased loadings.¹¹
12. Single-pole with underbuild design will be used in areas where the new transmission line will utilize the existing right-of-way of Itasca-Mantrap distribution lines along U.S. Highway 71 and 230th Street and where the new 12.5 kV distribution lines will be built on the new 115 kV structures that follow along 230th Street (Northern Pine Road) and 141st Avenue up to the intersection with County Highway 18.¹²
13. Where the structures are “stacked” with a 115kV above a 12.5 kV, the higher voltage will result in pole heights of 75 to 85 feet with span lengths of 250 to 300 feet.¹³
14. Angles in the line will require guying (the use of anchors and support cables) or specialty structures. Where guying is not practicable, direct embedded laminated wood poles or steel poles on drilled pier concrete foundations will be utilized.¹⁴
15. H-Frame design structures will be used in areas with rugged topography and where longer spans are required to avoid or minimize impacts to wetlands, avian migratory corridors, and waterways.¹⁵

Avian Concerns

16. The Applicant shall prepare an Avian Mitigation Plan to identify potential issues that may pose a risk to avian species specific to the Potato River crossing. The Permittee will develop strategies in an Avian Mitigation Plan that will be implemented to avoid or minimize impacts to birds or their habitats at these crossings. The Permittee is to consult with the Minnesota Department of Natural Resources (MnDNR) and the U.S. Fish and Wildlife Service (USFWS) in developing the Plan. The Avian Mitigation Plan will be submitted to the Commission with the Plan and Profile for the Project.
17. The Applicant will abide by and comply with the standards in designing, constructing, and maintaining the utility crossings, as defined in the utility crossing license from the MnDNR.¹⁶

¹¹ Ex. 2 at p.7-1 (Application).

¹² Ex. 2 at p. 1-3 (Application).

¹³ Ex. 2 at p. 7-2 (Application).

¹⁴ Ex. 2 at pp.7-1 and 7-2 (Application).

¹⁵ Ex. 2 at p.7-2 (Application).

¹⁶ Ex. 21 at p. 50 (EA).

18. The Applicant transmission line design standards and adherence to standards outlined in the Avian Powerline Action Committee Report provide for adequate spacing to eliminate the risk of raptor electrocution. As such, avian electrocution is not a concern related to the project.¹⁷

Conductors

19. The three phases of the 115kV transmission line will each consist of one single 26/7 kcmil 477 steel-reinforced aluminum conductor.¹⁸
20. One shield wire will be strung above the conductors to prevent damage from lightning strikes. These shield wires are typically less than one inch in diameter and will include fiber optic cables, which allow a path for substation protection equipment to communicate with equipment at other terminals on the transmission line.¹⁹

Route Width

21. The Applicant requests that the Commission approve a 300 foot route that extends 150 feet on either side of the centerline.²⁰

Right-of-Way

22. A 100 foot right-of-way will be required for construction of the 115 kV transmission line, 50 feet on either side of the transmission centerline. Additional right-of-way may be required for longer spans or special design requirements based on final survey(s). Right-of-way width depends on conductor blowout and the recommended clearances to obstructions along the route.²¹
23. Along roads, the transmission line structures will be placed approximately two to five feet outside of the existing road right-of-way, thereby requiring approximately 78 to 80 feet of new transmission line right-of-way.²²

Substation

24. The project includes the construction of one new 115 kV substation (Potato Lake Substation).²³

¹⁷ Ex. 21 at p. 54 (EA).

¹⁸ Ex. 2 at p. 7-1 (Application).

¹⁹ Ex. 21 at p. 11 (EA).

²⁰ Ex. 2 at p. 5-4 (Application).

²¹ Ex. 2 at p. 8-1 (Application).

²² Ex. 2 at p. 8-1 (Application).

²³ Ex. 2 at p. 1-3 (Application).

25. The Applicant's proposed site for the Potato Lake Substation is along U.S. Highway 71 in the southeast corner of the northeast corner of section 21 in Arago Township.²⁴
26. The Potato Lake Substation will require an approximate 96 foot by 146 foot fenced-in area on a 3.2 acre parcel. Itasca-Mantrap has purchased 3.2 acres of the land and will own all common facilities (land, fence, etc.).²⁵
27. The Potato Lake Advisory Task Force (ATF) suggested three alternate Potato Lake Substation locations in conjunction with its ATF Alternative Route, that would be located in close proximity of one another, and located in northwest quarter of section 5 in Arago Township, as depicted in Figure 1 of the EA.²⁶
28. The need for the Project is driven by the need for the new Potato Lake Substation to meet the demand growth in the area that has already occurred.²⁷
29. Itasca-Mantrap stated that the proposed Potato Lake Substation would serve the area along Highway 71 north of Park Rapids, including the north side of Potato Lake, the west side of Eagle Lake, and the Island Lake area, all the way up along Highway 71 to the Little Mantrap Lake area. It would also provide backup to the entire area surrounding Park Rapids within about an eight-mile radius.²⁸
30. According to Itasca-Mantrap, the proposed substation was strategically located near present and future load centers. This location would solve voltage drop problems; mitigate equipment overloading problems; improve reliability because it requires less distribution line, thereby reducing the risk of weather-related outage; and reduce the number of customers potentially impacted by large-scale substation and feeder-type outages. In addition, it would provide much needed back-up capabilities when transfer of load is required during emergencies.²⁹
31. Itasca-Mantrap noted that the proposed substation is optimally located because it is the least cost alternative. The alternative substation sites proposed by the Potato Lake ATF are too far north of the load they are intended to serve and backup. These sites would defeat the intended purpose of the Itasca-Mantrap Potato Lake substation.³⁰

²⁴ Ex. 2 at p. 5-1 (Application).

²⁵ Ex. 2 at p. 5-1 (Application).

²⁶ Ex. 21 Figure 1 (EA).

²⁷ Ex. 32 at p. 4 (GRE Letter to ALJ).

²⁸ Ex. 37 at p. 8, Item IIA32 (ALJ Report).

²⁹ Ex. 37 at p. 18, Item III E81 (ALJ Report).

³⁰ Ex. 37 at p. 19, Item III E82 (ALJ Report).

Project Schedule

32. The Applicant expects construction to begin on the Potato Lake Project in early 2011 and estimates the project will be completed by summer 2011 with an in-service date of August 2011. These dates may vary depending on the easement acquisition process.³¹

Project Cost

33. The total costs of the Project, which includes permitting, surveying, right-of-way acquisition/clearing/restoration, cost of structures, insulators, conductor, bird flight diverters (if required), and labor as well as any costs of equipment that will be used to construct the new line and substation, is dependent, in significant part, on the length of the route.³²
34. The total cost is estimated to be \$4.4 million for the Preferred Route, \$4.5 million for the Alternate Route, and \$10.7 million for the ATF Alternative Route.³³ This estimate is subject to change as it can be affected by several variables such as the timing of construction, availability of construction crews and components, and the final route selected by the Commission.
35. All costs for the transmission line facilities would be borne by Great River Energy. The proposed Potato Lake Substation costs will be borne by Itasca-Mantrap.³⁴

Procedural Summary

36. On January 28, 2010, in accordance with Minn. R. 7850.2800, subp. 2, the Applicant filed a letter with the Commission noticing their intent to submit a route permit application under the alternative permitting process set forth in Minn. Stat. § 216E.04 and Minn. R. 7850.2800 to 7850.3900.³⁵
37. On October 28, 2008, the Applicant filed a route permit application (Application) with the Commission for a 115 kV transmission line to be constructed in the townships of Arago, Henrietta, Lake Emma, and Todd in Hubbard County, Minnesota.³⁶
38. The Applicant mailed a Notice of a Submittal of an Application for a Route Permit on March 3, 2010, to those persons whose names are on the general list maintained by the Commission for this purpose, local and regional officials, and property owners in compliance with Minn. R. 7850.3300 and 7850.2100.³⁷

³¹ Ex. 2 at p. 3-2 (Application).

³² Ex. 2 at p. 3-2 (Application).

³³ Ex. 21 at p. 9 (EA).

³⁴ Ex. 2 at p. 3-2 (Application).

³⁵ Ex. 3 (Applicant Mailed Notice of Application Filing).

³⁶ Ex. 2 (Application).

³⁷ Ex. 4 and 5 (Applicant Mailed Notices of Application Filing).

39. The Applicant published Notice of a Submittal of an Application for a Route Permit in the *Park Rapids Enterprise* (March 6, 2010) and the *Northwoods Press* (March 6, 2010) in compliance with Minn. R. 7850.3300 and 7850.2100, subp. 4.³⁸
40. The EFP staff recommended that the Commission accept the route permit application as complete, appoint a public advisor, and Authorize EFP staff to establish an advisory task force (ATF) and issue a structure and charge in its comments and recommendations.³⁹
41. On March 26, 2010, the Applicant filed its 2009 demand statistics data, per Commission Order.⁴⁰
42. On April 16, 2010, the Commission accepted the application as complete as of the date it files the 2009 demand statistics data and authorized the EFP staff to process the application under the alternative permitting process in Minn. R. 7850.2800 to 7850.3900. The Commission also authorized the EFP staff to name a public advisor and to establish an advisory task force and develop a structure and charge for it.⁴¹
43. On April 19, 2010, EFP issued and mailed a Notice of Public Information Meeting to those persons whose names are on the project list maintained by the Commission for this purpose in compliance with Minn. R. 7850.3500, subp. 1 and 7850.2300, subp. 2. EFP also sent the Notice to designated State Agency Technical Representatives.⁴²
44. The Applicant on behalf of EFP published the Notice of Public Information Meeting in the *Park Rapids Enterprise* (May 5, 2010) in compliance with Minn. R. 7850.3500 and 7850.2300, subp. 2.⁴³
45. A hard copy of the route permit application was made available at the Hubbard County Offices and the Park Rapids Library.⁴⁴

Advisory Task Force

46. On April 20, 2010, EFP issued a structure and charge for an advisory task force in accordance with Minn. Stat. § 216E.08, subd. 1.⁴⁵
47. On April 21, 2010, EFP appointed 11 persons to the Potato Lake Advisory Task Force.⁴⁶

³⁸ Ex. 4 and 5 (Applicant Published Notices of Application Filing).

³⁹ Ex. 8 (Comments and Recommendations of EFP Staff).

⁴⁰ Ex. 9 (Demand Statistics).

⁴¹ Ex. 11 (Commission Order Accepting Application).

⁴² Ex. 12 (EFP Mailed Notice of Public Information Meeting).

⁴³ Ex. 15 (Published Notice of Public Information Meeting).

⁴⁴ Ex. 1 (Notice of Intent).

⁴⁵ Ex. 13 (ATF Structure and Charge).

⁴⁶ Ex. 18 at p. 1 (Final ATF Report).

48. The Potato Lake ATF was established and a structure and charge were developed by the Office of Energy Security (OES) per Commission Order.⁴⁷
49. The Potato Lake ATF met on May 4 and 18, 2010.⁴⁸
50. The Potato Lake ATF report was issued June 2010.⁴⁹
51. The Potato Lake ATF suggested one alternative route (ATF Alternative Route or Route C) to be considered for evaluation in the environmental assessment.⁵⁰
52. Route C exits the Potato Lake Substation to be located in one of three locations in the northern one-half of sections 5 and 6 of Arago Township, along U.S. Highway 71; proceed north along U.S. Hwy. 71 for approximately 1 mile; east along the north-south boundaries of Arago/Clover townships and Lake Emma/Clay townships through undeveloped forest and wetland for approximately 8 miles, then south for approximately 6.6 miles along County Highway 4 terminating at the new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section 5 of Henrietta Township and section 32 of Lake Emma Township along County Highway 4. The total length of the route would be 13 miles.⁵¹
53. The ATF noted they did not support burying the transmission line under the Potato River. Further, the ATF did not support earlier proposed routes along County Highway 40 and following a drainage ditch from the intersection of U.S. 71 and 220th Street to County Highway 18 to the east.⁵²

Public Meeting

54. The scoping process is the first step in developing an environmental assessment (EA). OES “shall provide the public with an opportunity to participate in the development of the scope of the environmental assessment by holding a public meeting and by soliciting public comments.”⁵³ During the scoping process, alternative routes may be suggested for evaluation in the EA.⁵⁴
55. In accordance with Minn. R. 7850.3500, subp. 1 and 7850.2300, subp. 1 to 4, EFP staff held a public information and environmental assessment scoping meeting on May 18, 2010, at the Park Rapids High School Commons in Park Rapids, Minnesota.

⁴⁷ Ex. 11 (Commission Order Accepting Application).

⁴⁸ Ex. 18 at p. 1 (ATF Report).

⁴⁹ Ex. 18 (ATF Report).

⁵⁰ Ex. 18 (ATF Report).

⁵¹ Ex. 21 at p. 7 (EA).

⁵² Ex. 18 at p. 8 (Final ATF Report).

⁵³ Minn. R. 7850.3700, subp. 2.

⁵⁴ Minn. R. 7850.3700, subp. 2B.

56. The public comment period on the scope of environmental assessment closed on June 1, 2010.⁵⁵ EFP received 85 comment letters during the scoping comment period.⁵⁶
57. The following issues and concerns were raised in oral comment at the public scoping meeting and through submission of comment letters: Aesthetics, Avian Concerns/Flight Diverters, Construction Activities, Cost Easements and Right-of-way, Electric and Magnetic Fields, Groundwater and Domestic Wells, Herbicides/Pesticides Impaired Waters, Interference, Invasive Species, Project Need, Property Values, Proximity to Homes/Businesses/Structures, Rare and Endangered Species, Recreation and Tourism Restoration Methods, Surface Water Resources, Tree Loss Along Right-of-Way, Undergrounding as a Mitigation, and Zoning.^{57,58}
58. Four alternative routes were suggested through comment that included the Miller Alternative Route, Fortune Drive Alternative Route, ATF Alternative Route, and the County Road 40 Route. With the exception of the ATF Alternative Route (Route C) all three alternatives were not considered for further evaluation in the EA. The routes appear to have greater impact to human settlement and the environment when compared to the Applicant's Preferred Route, the Applicant's Alternate route, and the ATF Alternative Route. Evaluation of these alternative routes would not have assisted in the Commission's final decision on the route permit application.⁵⁹
59. The scoping decision for the environmental assessment was signed by the director of the OES on June 18, 2010, filed with the Commission and made available to the public as provided in Minn. R. 7850.3700, subp. 3, on June 18 and 25, 2010.⁶⁰
60. The Applicant on behalf of EFP, issued notice to landowners with property affected by the new route alternative (ATF Alternative Route) presented for consideration in the EA Scoping Decision.⁶¹

Environmental Assessment

61. The environmental assessment was filed with the Commission and made available on September 10, 2010.⁶² The environmental assessment was prepared in accordance with Minn. R. 7850.3700, and contained all the information required.
62. On September 13, 2010, EFP staff mailed hard copies of the EA to state and federal agency technical representatives. A hard copy of the EA was also sent to the Park Rapids Library for public review purposes.⁶³

⁵⁵ Ex. 19 at p. 3 (Scoping Decision).

⁵⁶ Ex. 14 (Scoping Comment Letters).

⁵⁷ Ex. 19 at p. 4 (Scoping Decision).

⁵⁸ Ex. 19 at p. 4 (Scoping Decision).

⁵⁹ Ex. 19 at pp. 5, 8-9 (Scoping Decision).

⁶⁰ Ex. 19 (Scoping Decision).

⁶¹ Ex. 20 (New Landowner Notice).

⁶² Ex. 21 (EA).

63. On September 10, 13 and 14, 2010, EFP mailed a combined Notice of Public Hearing and Availability of Environmental Assessment to those persons whose names are on the project contact list, local and regional officials, and property owners in compliance with Minn. R. 7850.3700, subd. 6.⁶⁴
64. The Applicant, on behalf of the OES, published combined Notice of Public Hearing and Availability of Environmental Assessment in the *Park Rapids Enterprise* (September 18, 2010)⁶⁵ and the *Northwoods Press* (September 20, 2010).⁶⁶
65. Pursuant to Minn. R. 7850.3700, subp. 6, EFP published combined Notice of Public Hearing and Availability of Environmental Assessment in the *EQB Monitor* (September 20, 2010).⁶⁷
66. The Environmental Assessment was provided to the public agencies with authority to permit or approve the proposed project and was also posted to the Commission's Energy Facilities Permitting website in accordance with Minn. R. 7850.3700, subp. 6.
67. The Environmental Assessment evaluated the Applicant Proposed Route (Route A), Applicant's Alternate Route (Route B), and the ATF Alternative Route (Route C).

Public Hearing

68. On September 10, 13 and 14, 2010, EFP mailed a combined Notice of Public Hearing and Availability of Environmental Assessment to those persons whose names are on the project contact list, local and regional officials, and property owners in compliance with Minn. Stat. § 216E.03, subd. 6.⁶⁸
69. On September 15, 2010, EFP sent via Certified mail, a combined Notice of Public Hearing and Availability of Environmental Assessment to chief executives of the regional development commissions, counties, organized towns, townships, and incorporated municipalities in accordance with Minn. Stat. § 216E.03, subd. 6.⁶⁹
70. Pursuant to Minn. Stat. § 216E.03, subd. 6, the Applicant, on behalf of the OES, published combined Notice of Public Hearing and Availability of Environmental Assessment in the *Park Rapids Enterprise* (September 18, 2010)⁷⁰ and the *Northwoods Press* (September 20, 2010).⁷¹

⁶³ Ex. 22 (Confirmation of EA Submittal to State and Federal Agencies and Park Rapids Public Library).

⁶⁴ Ex. 23 (Mailed Notice of Public Hearing and Availability of EA).

⁶⁵ Ex. 25 (Published Notice of Public Hearing and Availability of EA [*Park Rapids Enterprise*]).

⁶⁶ Ex. 25 (Published Notice of Public Hearing and Availability of EA [*Northwoods Press*]).

⁶⁷ Ex. 27 (*EQB Monitor* Notice of Public Hearing and Availability of EA).

⁶⁸ Ex. 23 (Mailed Notice of Public Hearing and Availability of EA).

⁶⁹ Ex. 24 (Certified Notice of Public Hearing and Availability of EA).

⁷⁰ Ex. 25 (Published Notice of Public Hearing and Availability of EA [*Park Rapids Enterprise*]).

⁷¹ Ex. 25 (Published Notice of Public Hearing and Availability of EA [*Northwoods Press*]).

71. Minnesota Office of Administrative Hearings, Kathleen Sheehy, Administrative Law Judge (ALJ) presided over the public hearing conducted on September 29, 2010. The public hearing was held at the Century Middle School in Park Rapids, Minnesota. The ALJ provided an opportunity for members of the public to ask questions or comment on the proposed project verbally and/or to submit question/comments in writing.⁷²
72. Approximately 48 members of the public attended the public hearing. All persons who desired to speak were afforded a full opportunity to make a statement on the record.⁷³
73. Pursuant to Minn. R. 7849.5710, subp. 3, Minnesota Office of Energy Security, EFP state permit manager, and public advisor Jamie MacAlister, on behalf of Raymond Kirsch, were at the public hearing and described the alternative route permitting process, the proposed project, and introduced the environmental assessment and other relevant documents for the record.
74. Dan Lipschultz from the law firm of Moss & Barnett appeared at the public hearing on behalf of Great River Energy (Applicant) in this matter. Also present at the public hearing for Great River Energy were Michelle Lommel, Senior Field Representative, Land Rights; Marsha Parlow, Transmission Permitting Analyst; Timothy Mickelson, Transmission Planning Engineer; James Mcguire, Supervising Engineer, Transmission Line Design; and Kyle Oraskovich, Transmission Line Design Engineer. Staff present from Itasca-Mantrap Cooperative Electrical Association were Tony Nelson, Engineering Manager; and Michael Monsrud, President-CEO.
75. Michael Kaluzniak, Planning Director, was at the public hearing on behalf of the Minnesota Public Utilities Commission.
76. Public comments on the proposed Project were accepted by the ALJ until October 11, 2010.⁷⁴ The comment period was extended one day to October 12, 2010, by the ALJ to account for the observed holiday.⁷⁵
77. The public hearing transcript was filed by the Office of Administrative Hearings designated court reporter on October 20, 2010.⁷⁶
78. The ALJ filed the Summary of Public Comment on October 22, 2010.⁷⁷ The ALJ received many post-hearing comments that elaborated on the themes expressed at the public hearing.⁷⁸
79. The ALJ report contains a summary of oral public comments provided at the hearing.

⁷² Ex. 23 (Mailed Notice of Public Hearing and Availability of EA).

⁷³ Ex. 37 at p. 1 (ALJ Report).

⁷⁴ Ex. 23 (Mailed Notice of Public Hearing and Availability of EA).

⁷⁵ Ex. 28 (ALJ Extension Letter).

⁷⁶ Ex. 29 (Public Hearing Transcript).

⁷⁷ Ex. 37 (ALJ Report).

⁷⁸ Ex. 37 at p. 8, Item IIB34 (ALJ Report).

80. A number of persons who spoke at the public hearing and submitted correspondence questioned the need for the Project. In addition, comments also questioned the feasibility of an alternative power source, and conservation efforts promoted by the Applicant.
81. The Project is being reviewed under the Alternate Review Process in accordance with Minn. Stat. § 216E.04, as ordered by the Commission.⁷⁹ The questions of need, including size, type, and timing; alternative system configurations; and voltage must not be included in the scope of environmental review conducted under this Chapter (Minn. Stat. § 216E.02, subd. 2).
82. Sandra Stugelmeyer questioned whether there is a residence on County Road 89 where it would intersect with Route C, as indicated on Figure 5 of the EA. She stated she drove up County Road 89 and saw no residence at that location.⁸⁰
83. On October 21, 2010, The Applicant filed a letter with structure recount data for all routes being considered. The new data includes homes, homes/commercial and accessory structures within various distances of the route centerline as follows:⁸¹

Route	50-100 feet	101-200 feet	201-300 feet	301-500 feet	Total Structures
Route A	4	17	15	24	60
Route B	4	14	8	20	46
Route C	4	15	22	23	64

Public Hearing Comment Letters

Mark and Linda Larson Petition

84. As summarized by the ALJ, a group of residents along County Road 4 submitted a joint statement opposing Route C on the grounds that it would require creation of 8 miles of new right-of-way, would affect more wetland than Routes A and B; would negatively impact a preliminary site of High Biodiversity Significance; would negatively impact the habitat of a Minnesota endangered plant, the bog adder's mouth; and would not address the power supply issues that are the purpose for the proposed new line. The statement contains 36 signatures.⁸²

⁷⁹ Ex. 11 (Application Acceptance Order).

⁸⁰ Ex. 37. at p. 4, Item IIA11 (ALJ Report).

⁸¹ Ex. 30 (House Recount Data).

⁸² Ex. 37 at p. 15, Item IIIB68 (ALJ Report).

Requests for Contested Case Proceeding

85. Seven similar petitions to the Commission for a contested case hearing in this matter were submitted and signed by 134 persons.
86. The Project is being reviewed in accordance with Minn. R. 7850.2800 to 7850.3900, the Alternative Review Process.⁸³ The Alternative Review Process does not provide for a contested case hearing. A contested case hearing is part of the Full Permitting Process (Minn. R. 7850.1700 to 7850.2700).

Environmental Assessment of Routes

87. All routes analyzed in the Environmental Assessment have human and environmental impacts, some of which are unavoidable if the project is permitted and built. None of the routes evaluated are expected to cause an irreversible or irretrievable commitment of resources.
88. In the route permit application, the Applicant identified a Proposed Route and an Alternate Route. The ATF for this project identified a third route, the ATF Alternative Route. For ease of discussion in the EA, the three routes, Applicant's Proposed, Applicant's Alternate and the ATF Alternative, were renamed and will herein be referred to as **Route A** (Applicant's Proposed), **Route B** (Applicant's Alternate), and **Route C** (ATF Alternative).⁸⁴
89. Route A exits the new Potato Lake Substation in Section 21 of Arago Township along U.S. Highway 71 and proceeds south paralleling U.S. Highway 71 for approximately 1.5 miles to 230th Street (Northern Pine Road); east along 230th Street for approximately 1.5 miles to 141st Avenue; south approximately 1 mile along 141st avenue to County Highway 18; then east paralleling County Highway 18 for approximately 3.25 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section five of Henrietta Township along County Highway 4.⁸⁵
90. Route B is similar to Route A with the exception that at 230th Street (Northern Pine Road) the route continues east along 230th Street for two miles, south one mile following the boundary between sections 35 and 36 of Arago Township to County Highway 18, then east paralleling County Highway 18 for approximately 2.75 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section five of Henrietta Township along County Highway 4. The Alternate Route is 7.25 miles long.⁸⁶

⁸³ Ex. 11 (Commission Order Accepting Application).

⁸⁴ Ex. 21 at p. 5 (EA).

⁸⁵ Ex. 2 Figures 5-2 to 5-7 at pp. 5-5 to 5-10 (Application).

⁸⁶ Ex. 2 Figures 5-8 and 5-9 at pp. 5-11 to 5-12 (Application).

91. Route C exits the Potato Lake Substation to be located in one of three locations in the northern one-half of sections 5 and 6 of Arago Township, along U.S. Highway 71; proceeds north along U.S. Hwy. 71 for approximately 1 mile; east along the north-south boundaries of Arago/Clover townships and Lake Emma/Clay townships through undeveloped forest and wetland for approximately 8 miles, then south for approximately 6.6 miles along County Highway 4 terminating at a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line section five in Lake Emma Township. The total length of the route would be 13 miles.⁸⁷

Displacement

92. The Applicant has stated that the transmission line will be designed to avoid displacement of existing residences or businesses.⁸⁸
93. For Route A, there are 4 homes, homes/commercial, and accessory (structures) within 50-100 feet of the route centerline, 17 structures within 101-200 feet, 15 structures within 201-300 feet from the centerline, and 24 structures within 301-500 feet from the route centerline. In total, 60 homes are 50-500 feet from the route centerline.⁸⁹
94. For Route B, there are 4 structures within 50-100 feet of the route centerline, 14 structures within 101-200 feet, 8 structures within 201-300 feet from the centerline, and 20 structures are within 301-500 feet from the route centerline. In total, 46 homes are 50-500 feet from the route centerline.⁹⁰
95. For Route C, there are 4 structures within 50-100 feet of the route centerline, 15 structures within 101-200 feet, 22 structures within 201-300 feet from the centerline, and 23 structures are within 301-500 feet from the route centerline. In total, 64 homes are 50-500 feet from the route centerline.⁹¹

Noise

96. The Minnesota Pollution Control Agency (“MPCA”) has established standards for the regulation of noise levels.⁹²
97. For residential, commercial and industrial land, the MPCA noise limits are 60-65 A-weighted decibel (“dBA”) during the daytime and 50-55 dBA during the nighttime.⁹³

⁸⁷ Ex. 21 at p. 7 (EA).

⁸⁸ Ex. 2 at p. 6-3 (Application).

⁸⁹ Finding 83.

⁹⁰ Finding 83.

⁹¹ Finding 83.

⁹² Minn. R. 7030; Ex. 21 at p. 26 (Application).

⁹³ Minn. R. 7030.0400; Ex. 21 at p. 27 (Application).

98. The Applicant indicates that noise levels directly adjacent to the 115 kV transmission line and substation would be 20 to 30 dB(A), less than the Minnesota residential nighttime standard of 50 dB(A) L₁₀. Long-term noise impacts from the project are not anticipated and mitigation measures are not necessary.
99. Short-term exceedance of daytime noise standards associated with initial construction of all routes is expected to occur during daytime hours as the result of heavy equipment operation and increased vehicle traffic associated with the transport of construction materials and personnel to and from the work area. The short-term exceedance of daytime noise standards would be intermittent and temporary in nature. Minnesota nighttime noise level standards will not be exceeded.⁹⁴

Aesthetics

100. The Applicant recognizes the transmission lines will be a contrast to the surrounding land. The Applicant pledged to consult with landowners and public agencies to identify concerns related to the transmission line and aesthetics.⁹⁵
101. Several mitigative measures have been proposed by the Applicant and include: considering input from landowners or land management agencies with regards to visual impacts prior to final location of structures, rights-of-way, and other areas with the potential for visual disturbance. Care will be used to preserve the natural landscape and prevent any unnecessary destruction of the natural surroundings in the vicinity of the project during construction and maintenance. Wetlands, lakes, and surface flows will be crossed in the same location as the existing transmission lines. New structures will be designed to support the existing distribution lines, thereby allowing the use of existing alignments and will share existing road rights-of-way, to the extent that such actions do not violate sound engineering principles or system reliability criteria. Structures will be placed at the maximum feasible distance from intersecting roads, highway, or trail crossings and could also be placed across roads to minimize or avoid impacts.⁹⁶
102. The Applicant is committed to working with each individual property owner who has trees that act as a buffer between their homes and the road, or similar. Examples are designing the transmission facility around features such as trees and by crossing the road, doing replacement plantings, or providing compensation to the affected landowner. The Applicant stated that these issues must be negotiated with individual property owners and that it intended to do so in the most sensitive way possible.⁹⁷ The Route Permit at Section 4.2.5 that states the Permittee shall minimize the number of trees to be removed in selecting the right-of-way, specifically preserving to the maximum extent practicable, windbreaks, shelterbelts and living snow fences.

⁹⁴ Ex. 21 at p. 27 (EA).

⁹⁵ Ex. 21 at p. 23 (EA).

⁹⁶ Ex. 2 at p. 6-10 (Application).

⁹⁷ Ex. 37. at p. 6, Item IIA19 (ALJ Report).

103. Due to the challenges associated with undergrounding of high-voltage transmission lines, such as construction, maintenance, right-of-way and cost, placing a high-voltage transmission line, like the line proposed for this project, underground as a mitigation for aesthetics is a practice generally used only when there is no viable overhead corridor, in populated urban areas and for limited distances.⁹⁸
104. The aesthetic impacts differ among Routes A, B and C. Routes A or B will cause the least amount of aesthetic impacts. Routes A and B are shorter in distance (7.25 miles each) than Route C (13 miles).⁹⁹ Routes A and B will use fewer poles. Routes A and B would follow existing road and transmission line rights-of-way for 100 percent and 86 percent of the respective routes, compared to 56 percent right-of-way with Route C.¹⁰⁰ All three routes will have a similar distribution of dwellings/structures 50-200 feet from the route centerline.¹⁰¹ Route C would traverse eight miles of undisturbed forest, creating the need for new transmission line right-of-way through the forest area where it crosses from U.S. Highway 71 to County Highway 4.¹⁰²

Cultural Values

105. The communities in the vicinity of the Project have cultural values arising out of the prevalence of rural agriculture, tourism/recreation and family-owned businesses and resorts.¹⁰³
106. The proposed transmission lines will serve the area's anticipated future load growth and provide adequate system support to the area.¹⁰⁴
107. There are no anticipated impacts to cultural values by constructing the Project along the Routes A, B or C.

Recreation

108. There are outdoor recreational opportunities along the Route A, Route B, and Route C which include snowmobiling, cross-country skiing, biking, hiking, canoeing, boating, fishing, camping, swimming, hunting, and nature observation.¹⁰⁵
109. There are no state or national forests or parks, national wildlife refuges, federal waterfowl production areas, state trails, scientific and natural areas, wildlife management areas, or county parks present within Route A, Route B and Route C.¹⁰⁶

⁹⁸ Ex. 21 at p. 24 (EA).

⁹⁹ Ex. 21 at p. 6 and 7 (EA).

¹⁰⁰ Ex. 21 at p. 22 (EA).

¹⁰¹ Ex. 30 (House Recount Data).

¹⁰² Ex. 21 at p. 61 (EA).

¹⁰³ Ex. 21 at pp. 19-21 (EA).

¹⁰⁴ Ex. 2 at p. 2-1 (Application).

¹⁰⁵ Ex. 21 at p. 43 (EA).

¹⁰⁶ Ex. 21 (EA).

110. There may be temporary impacts to resorts during construction of a transmission line associated with safety measures crews would need to take when working along roads. This may include lane closures, slower driving speeds, and directing traffic.¹⁰⁷
111. The Applicant would work closely with Minnesota Department of Transportation (Mn/DOT) to obtain the appropriate permits and ensure minimal disruption to area traffic.¹⁰⁸
112. None of the three routes would impact or interfere with existing recreational areas or recreational opportunities within or near the project area.¹⁰⁹

Public Services/Utilities

113. Public services and utilities are generally defined as services provided by government entities including hospitals, fire and police departments, schools, roads and highways, public parks, and water supply. Utilities also include private wells, septic systems and other utilities.
114. The Applicant has guaranteed that pipelines, septic tanks, utilities, and propane tank locations would be identified when detailed field surveys are performed prior to construction. The locations of public services and utilities would be incorporated into the design and pole placement locations. The design of the transmission line will meet or exceed National Electric Safety Code (NESC) clearances. The Applicant has also indicated that they will discuss these and other easement issues with landowners during the acquisition phase. Transmission structures will be placed at the maximum feasible distance from intersecting roads, highway, or trail crossings and could cross roads multiple times to minimize or avoid impacts.¹¹⁰
115. Construction of the Project along the Routes A, B or C is not anticipated to directly or indirectly impact the area transportation corridors, emergency infrastructure, or utilities.¹¹¹

Public Health and Safety

116. The Applicant will ensure that all safety requirements meet NESC standards during the construction and operation of the proposed transmission line and associated facilities.¹¹²

¹⁰⁷ Ex. 21 at p. 44 (EA).

¹⁰⁸ Ex. 21 at p. 42 (EA).

¹⁰⁹ Ex. 21 at p. 43 (EA).

¹¹⁰ Ex. 21 at p. 42 (EA).

¹¹¹ Ex. 21 at pp. 41-42 (EA).

¹¹² Ex. 2 at p. 6-4 (Application).

117. The Project will be designed and constructed in compliance with local, state, NESC and Great River Energy standards regarding clearance to the ground, clearance to crossing utilities, strength of materials and right-of-way widths.¹¹³
118. The Project will be equipped with protective devices to safeguard the public in the event of an accident. The protective equipment is designed to de-energize the transmission line should such an event occur.¹¹⁴ In addition, the associated facilities will be properly fenced and accessible only by authorized personnel.¹¹⁵

Electric and Magnetic Fields

119. The issue of electric and magnetic fields was discussed in the environmental assessment.¹¹⁶ A number of national and international health agencies (The Minnesota Department of Health, The World Health Organization, The National Institute of Environmental Health Sciences) have concluded in their research that there is insufficient evidence to prove a connection between electric and magnetic field exposures and health effects. Research has not been able to establish a cause and effect relationship between exposure to magnetic fields and human disease, nor a plausible biological mechanism by which exposure to electric and magnetic fields could cause disease.¹¹⁷ The maximum magnetic field for this Project, as calculated by the Applicant, would be 22.96 milligauss, one meter above the ground and directly below the line.¹¹⁸ No Minnesota regulations have been established pertaining to magnetic fields from high-voltage transmission lines. The Environmental Quality Board (EQB) and the Commission have historically recommended an 8 kV/m maximum electric field for transmission lines of 345 kV or greater to prevent potential shock hazards.¹¹⁹ The maximum electric field for this Project, as calculated by the Applicant, would be 0.89 kV/m, at one meter above the ground and directly below the line.¹²⁰
120. The absence of any demonstrated impact by electric field and magnetic field exposure supports the conclusion that there is no demonstrated impact on human health and safety. No adverse effects from electric fields and magnetic fields on health are expected for persons living or working at locations along or near the proposed Project.¹²¹

¹¹³ Ex. 2 at p. 6-4 (Application).

¹¹⁴ Ex. 2 at p. 6-2 (Application).

¹¹⁵ Ex. 2 at p. 5-1 (Application).

¹¹⁶ Ex. 21 a pp. 29-37 (EA).

¹¹⁷ Ex. 21 a pp. 29-37 (EA).

¹¹⁸ Ex. 21 at p. 36 (EA).

¹¹⁹ See in the Matter of the Petitions of Northern States Power Company d/b/a Xcel Energy and Dairyland Cooperative for Permits to Construct a 115 kV and 161 kV Transmission Line from Taylors Falls to Chisago County Substation, Docket No. E-002/TL-06-1677, Environmental Assessment at p. 45 (Aug. 20, 2007); Ex. 21 at p. 32 (EA).

¹²⁰ Ex. 21 at p. 33 (EA).

¹²¹ Ex. 21 at p. 36 (EA).

Stray Voltage

121. Transmission lines (alternate current or AC) can induce “stray” voltage on nearby conductive objects. When the electric-magnetic field of a transmission line is within range of a nearby conductive object, a voltage may be induced on the object. The magnitude of the voltage depends on the weather conditions, the objects ability to collect an electric charge (capacitance), and vary with the object’s shape, size, orientation and location, object to ground resistance.
122. If a voltage is induced on an object insulated from the ground and a person touches the object, a small current (induced current or stray voltage) would pass through their body to the ground. This current may produce a spark discharge or mild shock to the individual. This type of stray voltage occurs most often on long fences and distribution lines built under transmission. Proper grounding of metal objects under the transmission line is the best method of avoiding these shocks. Most shocks from induced current are considered more of a nuisance than a danger. The Minnesota Public Utilities Commission electric field limit of 8 kV/m was designed to prevent serious hazard from shocks due to induced voltage under transmission lines. The NESC sets an induced current limit of five milliamps(mA) for objects under transmission lines.¹²²
123. Stray voltage (neutral to earth voltage, or NEV) is an extraneous voltage that appears on grounded surfaces in buildings, barns and other structures. This type of stray voltage may result from a damaged, corroded, or poorly connected wiring or damaged insulation (contact voltage). Stray voltage (NEV) and its impact on dairy farms is normally an issue associated with electrical distribution lines and is a condition that can exist between the neutral wire of a service entrance and grounded objects in buildings. NEV is not associated with transmission lines. The source of stray voltage is a voltage that is developed on the grounded neutral wiring network of a farms, homes and out-structures.¹²³
124. The quality of the farm/structure wiring system has the largest single influence on contact voltage. Stray voltage (NEV) sources can be reduced in three fundamental ways: reduce the current flow on the neutral system; reduce the resistance of the neutral system; or improve the grounding of the neutral system. Making good electrical connections and making sure that these connections are maintained by the proper choice of wiring materials for wet and corrosive locations will reduce the resistance of the grounded neutral system and thereby reduce NEV levels.

¹²² Ex. 21 at p. 38 (EA).

¹²³ Ex. 21 at p. 37 (EA).

125. Appropriate measures will be taken by the Applicant during transmission line design, construction, and operation to prevent the potential for any stray voltage problems from this project. As a condition of the permit, all fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, will be grounded to the extent necessary to limit the induced short circuit current between ground and the object and to comply with the ground fault conditions specified in the NESC. The Applicant will be required to address and rectify any stray voltage problems that arise during transmission line operation, as a condition of the route permit.¹²⁴

Effects on Land Based Economies

126. The Applicant does not anticipate that temporary construction space outside the right-of-way or on private property will be needed, with the exception of limited equipment access.¹²⁵
127. Construction and maintenance of the Project will result in permanent and temporary impacts to farmland such as soil compaction and crop damage. Permanent impacts will occur as a result of structure placement along the route centerline. Applicant's estimated that the permanent impacts in agricultural fields will be 30 square feet per pole during installation. After installation, the majority of the right-of-way easement would be available for agricultural uses.¹²⁶
128. Examples of the mitigative measures that have been agreed to by the Applicant include: the movement of crews and equipment would be limited to the right-of-way to the greatest extent possible. If movement outside of the right-of-way is necessary during construction and maintenance, the Applicant would contact the property owner and obtain permission, and any damages would be resolved by restoration or compensation to the landowner; damage to ditches, tile drains, terraces, roads and other features of the land would be corrected by the Applicant, the land and facilities would be restored as nearly as practicable to their original conditions; construction would be scheduled during periods when agricultural activities will be minimally affected or the landowner will be compensated accordingly; fences, gates and similar improvements that are removed or damaged would be promptly repaired or replaced, temporary fencing will be utilized if agreed to with landowners for situations such as animals that may require it.¹²⁷
129. For Route A the environmental assessment indicates that the project would impact 16.9 acres of cropland and 36.5 acres of hay, pasture, grassland for a total of 53.4 acres of agricultural land.¹²⁸

¹²⁴ Ex. 21 at p. 37 (EA).

¹²⁵ Ex. 2 at p. 6-15 (Application).

¹²⁶ Ex. 21 at p. 44 (EA).

¹²⁷ Ex. 21 at p. 45 (EA).

¹²⁸ Ex. 21 at p. 44 (EA).

130. For Route B the environmental assessment indicates that the project would impact 9.2 acres of cropland and 32.6 acres of hay, pasture, grassland for a total of 41.8 acres of agricultural land.¹²⁹
131. For Route C the environmental assessment indicates that the project would impact 19.2 acres of cropland and 73.4 acres of hay, pasture, grassland for a total of 92.6 acres of agricultural land.¹³⁰
132. Route B would impact less agricultural land when compared to Route A and Route C.
133. All three of the routes would cross through forested lands in the project area. When routing a transmission line through a forested area, the transmission line right-of-way would have to be properly cleared of vegetation per NESC standards. In the case of this project, a 100- foot-wide right-of-way would be cleared in these areas and maintained throughout the life of the transmission line.¹³¹
134. Clearing for access would be limited to only those trees necessary to permit the passage of equipment, and will generally correspond to the transmission right-of-way. Native shrubs and other small-growing vegetation that will not interfere with the safe operation of the transmission line can be allowed to reestablish in the right-of-way.¹³² Tree clearing will be limited to the transmission right-of-way and areas that impact safe operation of the transmission facilities, and will be a condition of the route permit. The Commission will require, as a permit condition, that the Applicant works with landowners to identify issues related to the transmission line such as distance from existing structures, tree clearing, and other aesthetic concerns. Landowners will be compensated for the removal of mature yard trees through easement negotiations, if necessary..
135. For Route A, the environmental assessment indicates that 115.7 acres of private- and public-owned forest land would be directly and/or indirectly impacted by the Project.¹³³
136. For Route B, the environmental assessment indicates that 138.2 acres of private- and public-owned forest land would be directly and/or impacted by the Project.¹³⁴
137. For Route C, the environmental assessment indicates that 306.5 acres of private- and public-owned forest land would be directly and/or impacted by the Project.¹³⁵

¹²⁹ Ex. 21 at p. 44 (EA).

¹³⁰ Ex. 21 at p. 44 (EA).

¹³¹ Ex. 21 at p. 46 (EA).

¹³² Ex. 21 at p. 46 (EA).

¹³³ Ex. 21 at p. 44 (EA).

¹³⁴ Ex. 21 at p. 44 (EA).

¹³⁵ Ex. 21 at p. 44 (EA).

138. Route A would impact less private- and public-owned forest land when compared to Route B and Route C.
139. There are tourism and recreation activities located within Routes A, B, or C along with resources within the vicinity that may be indirectly impacted by the Project because of view shed or alteration of the landscape. None of the three routes being evaluated would impact or interfere with existing recreational areas or recreational/tourism opportunities within or near the Project area.¹³⁶
140. There are no mined areas or identified potential mineral resources in the immediate area of the proposed transmission line route or at the proposed substation site.¹³⁷
141. Route A will have less overall impact to land-based economies than Route B and Route C.¹³⁸

Archaeological and Historic Resources

142. No known historical resources were identified within the Proposed and Alternate routes or near the proposed substation site. Therefore, no impacts are anticipated during the installation of the transmission line for Route A and Route B.¹³⁹
143. The Leech Lake Band of Ojibwe was also contacted and stated that they have determined that the Leech Lake Band of Ojibwe does not have any concerns regarding sites of religious or cultural importance in this area.¹⁴⁰
144. The Applicant shall make every effort to avoid impacts to identified archaeological and historic resources when installing the high-voltage transmission line on the approved route. In the event that an impact would occur, the Applicant will consult with the Commission, State Historic Preservation Office and invited consulting parties. Where feasible, avoidance of the resource is required.

Air Quality

145. Construction of the Project will result in temporary air quality impacts caused by, among other things, construction-vehicle emissions and fugitive dust from right-of-way clearing.
146. The Applicant will implement the appropriate dust control measures, as required.¹⁴¹

¹³⁶ Ex. 21 at p. 43 (EA)

¹³⁷ Ex. 2 at p. 6-16 (Application).

¹³⁸ Ex. 21 Table 24 (EA).

¹³⁹ Ex. 21 at p. 58 (EA).

¹⁴⁰ Ex. 2 at Appendix A (Application).

¹⁴¹ Ex. 21 at p. 40 (EA).

147. The operation of the Project along either the Route A, B, or C, is not anticipated to cause any long-term impacts to air quality.¹⁴²

Water Quality and Water Resources

148. The proposed project is located just northeast of the city of Park Rapids in an area populated with numerous lakes. Larger lakes within the project area include Potato Lake, Island Lake, Eagle Lake, Pickerel Lake, and Blue Lake. There are also a number of rivers, streams, and tributaries which connect to or drain from various lakes within the area.¹⁴³
149. All three of the routes being evaluated would entail crossing or spanning one or more surface water resource in the proposed project area.¹⁴⁴ The Applicant has indicated that all rivers, streams, and ditches will be spanned by transmission structures and no structures will be located within these features, no direct impacts to rivers, streams, ditches are anticipated.¹⁴⁵
150. The Applicant will apply for a license to cross public lands and waters and must abide by the conditions established by the MnDNR.¹⁴⁶
151. Indirect impacts could include sedimentation reaching surface waters during construction due to ground disturbance by excavation, grading, construction traffic, and dewatering of holes drilled for transmission structures. These impacts will be avoided and minimized using appropriate sediment control practices and BMPs discussed in Section 6.11 (Geology & Soils) of the EA.
152. Examples of the mitigative measures that have been agreed to by the Applicant include: Utilizing seed to establish temporary and permanent vegetative cover on exposed soil. The Minnesota Department of transportation (Mn/DOT) and MnDNR has researched various seed mixes and has identified mixes for specific site characteristics and uses; Mulch may be applied to form a temporary and protective cover on exposed soils. Mulch can help retain moisture in the soil to promote vegetative growth, reduce evaporation, insulate the soil, and reduce erosion. A common mulch material used is hay or straw; Erecting or using sediment control fences that are intended to retard flow, filter runoff, and promote the settling of sediment out of runoff via ponding behind the sediment control.

¹⁴² Ex. 21 at p. 40 (EA).

¹⁴³ Ex. 21 at p. 48 (EA).

¹⁴⁴ Ex. 21 at p. 49 (EA).

¹⁴⁵ Ex. 1 at p. 6-23 (Application).

¹⁴⁶ Ex. 2 at p. 6-24 (Application).

Examples include biorolls, sandbags, and silt fences; Using Erosion control blankets and turf reinforcement mats that are typically single or multiple layer sheets made of natural (wood) and/or synthetic materials that provide structural stability to bare surfaces and slopes; Upon completion of construction in a specific area route permit conditions will require that contours be graded so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation, provide for proper drainage, and prevent erosion. All areas disturbed during construction of the facilities must be returned to their pre-construction condition.¹⁴⁷

153. Disturbed areas of one acre or more (proposed substation) will be regulated by a National Pollutant Discharge Elimination System (NPDES) permit and Stormwater Pollution Prevention Plan prepared for the project. Mitigation under the NPDES permit includes implementation of the Stormwater Pollution Prevention Plan with the appropriate erosion control methods developed specifically for the site. The Minnesota Pollution Control Agency (MPCA) issues combined NPDES/State Disposal System permits for construction sites, industrial facilities and municipal storm sewer systems. Compliance with the MPCA stormwater program will be a condition of the route permit.
154. Route A will span and indirectly and temporarily impact 12.2 acres of surface water and riparian areas.¹⁴⁸
155. Route B will span and indirectly and temporarily impact 12.2 acres of surface water and riparian areas.¹⁴⁹
156. Route C will span and indirectly and temporarily impact 18.6 acres of surface water and riparian areas.¹⁵⁰
157. There are fewer surface water resources and riparian areas that will be impacted by Routes A and B, than within Route C.
158. Wetlands provide direct benefits to the environment and vary according to the type or class of wetland and the season. Wetlands serve as floodwater detentions, provide nutrient assimilation and sediment entrapment (water quality), and provide wildlife habitat. Wetlands are either protected federally under Section 404 of the Clean Water Act or by the State of Minnesota under the Wetland Conservation Act.¹⁵¹

¹⁴⁷ Ex. 21 at p.47 (EA).

¹⁴⁸ Ex. 21 at p. 49 (EA).

¹⁴⁹ Ex. 21 at p. 49 (EA).

¹⁵⁰ Ex. 21 at p. 49 (EA).

¹⁵¹ Ex. 21 at p. 50 (EA).

159. Wetlands are located throughout the proposed Project area and increase in density and number in the northern and western portions of the Project area. The majority of wetland types in the area are wooded swamps, shrub/scrub swamps, seasonally flooded shallow marshes, wet meadows, shallow ponds, and riverine or deeper water.¹⁵²
160. All three routes would entail crossing through wetlands at various locations along their respective routes. Temporary impacts to wetlands would be limited to ground disturbance related to construction traffic and placement of the transmission line structures. Minimal grading of areas around pole locations may be required to accommodate construction vehicles and equipment. Permanent impacts to wetlands would occur where structures must be located within wetland boundaries.¹⁵³
161. Route A would impact 10 wetland areas for 33.7 total acres of impacted wetlands, 5.2 acres being wooded or scrub/shrub wetlands.¹⁵⁴
162. Route B would impact 10 wetland areas for 34.7 total acres of impacted wetlands, 4.9 acres being wooded or scrub/shrub wetlands.¹⁵⁵
163. Route C the would impact 20 wetland areas for 56.0 total acres of impacted wetlands, 33.7 acres being wooded or scrub/shrub wetlands.¹⁵⁶
164. Route A and Route B would impact less wetlands when compared to Route C.
165. The Applicant has stated that the proposed project would have no impact on the impairment status of the waters in the project area. Appropriate erosion and sediment control measures will be implemented to avoid or minimize such impacts.¹⁵⁷
166. Wood poles used for utility lines are typically treated with the following preservatives: creosote, pentachlorophenol (PCP) or chromated copper arsenate. For this project, GRE has indicated they would use pentachlorophenol-treated poles.¹⁵⁸ An EPRI report concluded that the attenuation factors of penta suggest that penta leaching from wood poles “will not be detectable in downgrading groundwater.”¹⁵⁹

¹⁵² Ex. 21 at p. 50 (EA).

¹⁵³ Ex. 21 at p. 49 (EA).

¹⁵⁴ Ex. 21 at p. 51 (EA).

¹⁵⁵ Ex. 21 at p. 51 (EA).

¹⁵⁶ Ex. 21 at p. 51 (EA).

¹⁵⁷ Ex. 21 at p. 52 (EA).

¹⁵⁸ Ex. 21 at p. 41 (EA).

¹⁵⁹ Electric Power Research Institute, Pole Preservatives in Soils Adjacent to In-Service Utility Poles in the United States, (December 1997); Ex. 21 at p. 41 (EA).

Flora (Plant life)

167. The project is located in the Northern Lakes and Forests Ecoregion, which is dominated by mature conifer and northern hardwood forests and interspersed with lake and wetland plant communities. Vegetative communities found along the routes include upland deciduous forests, coniferous forests, shrubby grasslands, grasslands, and several different types of wetlands.¹⁶⁰
168. All of the routes would impact natural vegetation along their respective routes. Routes A and B would impact 115.7 and 138.2 total forested acres and approximately 5.2 and 4.9 wooded wetland acres, respectively. Route C would impact approximately 306.5 total forested acres and 33.7 acres of wooded wetland acres.¹⁶¹
169. Route A would impact less forest and forested wetland acreage when compared to Route B and Route C.
170. As a condition of the route permit, areas disturbed due to construction activities would be restored to preconstruction contours and would be reseeded with a MnDNR-approved seed mix that is certified to be free of noxious weeds.¹⁶²
171. The Applicant has stated that, when possible, impacts to wooded areas along the routes will be avoided.¹⁶³

Fauna (Wildlife)

172. Wetlands and lakes in the area provide important habitat for numerous species of raptors, waterfowl, water birds, shorebirds, and grassland birds. Mammals include white-tailed deer, badgers, coyote, raccoon, various species of ground squirrels and other small rodents that are common to Minnesota.¹⁶⁴
173. There are no regional parks, recreational areas, State Wildlife Management Areas within Routes A, B, or C.¹⁶⁵
174. Although certain types of impacts may be similar among the three routes, the degree of impacts is not. The three routes are variable in length, types and quality of habitat and resources crossed, and species present. Location, sensitivity, and quantity of habitat must be considered when discussing potential transmission line impacts.¹⁶⁶

¹⁶⁰ Ex. 21 at p. 52 (EA).

¹⁶¹ Ex. 21 at p. 52 (EA).

¹⁶² Ex. 21 at p. 53 (EA).

¹⁶³ Ex. 21 at p. 53 (EA).

¹⁶⁴ Ex. 21 at p. 53 (EA).

¹⁶⁵ Ex. 2 at p. 6-34 (Application).

¹⁶⁶ Ex. 21 at p. 53 (EA).

175. Route A would follow existing road and utility rights-of-way for 100 percent of its route.¹⁶⁷
176. Route B would follow existing road and utility rights-of-way for 86 percent of its route.¹⁶⁸
177. Route C would follow existing road and utility rights-of-way for 54 percent of its route.¹⁶⁹
178. Route A would follow more existing road and utility rights-of-way when compared to Route B and Route C.
179. Route C would result in greater habitat fragmentation impacts than Routes A or B, as it contains large areas of contiguous habitat between U.S. Highway 71 and County Highway 4. Transmission line encroachments into large areas of contiguous habitat, such as those associated with Route C may result in changes to avian activity and increases avian fatality.¹⁷⁰
180. "...the DNR concluded Routes A or B have the least potential for negative environmental effects. Because trumpeter swan mortality appears to be a possibility along all routes, the DNR concluded Route C would not likely provide a solution for avian concerns and that Route C presents higher potential for other environmental effects."¹⁷¹
181. Permanent impacts to wildlife would take place at substation locations where two to five acres of land would be changed from existing land uses, most likely agricultural, to the developed substation area. Construction of these facilities would likely temporarily displace wildlife. Additional long-term impacts to wildlife in the surrounding area are not expected.¹⁷²

Rare and Unique Natural Resources

182. The U.S. Fish and Wildlife Service (USFWS) indicated that there are no federally-listed or proposed species or designated or proposed critical habitat within the action area of the proposed project.¹⁷³

¹⁶⁷ Ex. 21 at p. 54 (EA).

¹⁶⁸ Ex. 21 at p. 54 (EA).

¹⁶⁹ Ex. 21 at p. 7 (EA).

¹⁷⁰ Minnesota Department of Natural Resources, email, August 19, 2010; Ex. 21 at p. 54 (EA).

¹⁷¹ Ex. 37. at p. 17, Item IIID75 (ALJ Report).

¹⁷² Ex. 21 at p. 54 (EA).

¹⁷³ Ex. 2 at Appendix A (Application).

183. Information from the MnDNR's Natural Heritage Information System documented rare species that include trumpeter swans, red-necked grebes and bald eagles. The Blanding's turtle is a state-listed threatened species that has been reported in the vicinity of the proposed project. Several mussel species, including the creek heelsplitter, a state-listed species of special concern, have been documented in the Potato River.¹⁷⁴
184. To avoid impact to Blanding's Turtles potentially located in the vicinity all three routes, the Applicant has agreed to use silt fencing or other appropriate erosion control measures to prevent sedimentation when working near waterways. Also, construction crews and contractors will be instructed to minimize deviation from the project right-of-way to help to minimize disturbance of surrounding areas. Contractors and crews will be given a fact sheet on the Blanding's turtle, as a condition of the Route Permit.¹⁷⁵
185. The Minnesota County Biological Survey (MCBS) has identified two preliminary Site of Moderate Biodiversity Significance immediately west of U.S. Highway 71 and along County Highway 18 for Routes A and B.¹⁷⁶
186. The eight mile section of Route C that would run through undisturbed forest and wetland areas between U.S. Highway 71 and County Highway 4 would bisect areas identified by the MCBS as preliminary Sites of High Biodiversity Significance. The MnDNR also indicates that this undisturbed area of Route C provides habitat for several colonies of bog adder's mouth, which is an endangered plant in Minnesota. Route C would pass between Upper and Lower Mud lakes and within less than one foot of Lower Mud Lake. In addition, this east-west stretch of Route C would pass within less than one foot of two unnamed lakes in that same area. Comments provided by the MnDNR indicate that trumpeter swans and other waterfowl are known to frequent these lakes and associated wetlands and that there is a natural flyway and hydrologic connection between Upper and Lower Mud lakes.¹⁷⁷
187. Routes A and B would have less effect on rare and unique natural resources in the Project area when compared to Route C.

¹⁷⁴ Ex. 2 at Appendix A (Application).

¹⁷⁵ Ex. 21 at p. 56 (EA).

¹⁷⁶ Ex. 21 at p. 55 (EA).

¹⁷⁷ Minnesota Department of Natural Resources, email, August 19, 2010; Ex. 21 at p. 56 (EA).

188. Examples of the mitigative measures that have been agreed to by the Applicant include: Minimize tree felling and shrub removal that are important to area wildlife. Utilize BMPs to prevent erosion of the soils in the areas of impact. Implement sound water and soil conservation practices during construction and operation of the project to protect topsoil and adjacent water resources and minimize soil erosion. Practices may include containing excavated material, protecting and stabilizing exposed and restored soil. Re-vegetate disturbed areas with native species and wildlife conservation species where applicable. Implement raptor protection measures, including placement of bird flight diverters on the line at water crossings after consultation with local wildlife management staff.¹⁷⁸

Costs of Constructing, Operation, and Maintenance

189. Route A and its associated facilities will cost \$4.4 million to construct and \$500 to \$750 per mile to operate and maintain.¹⁷⁹
190. Route B and its associated facilities will cost \$4.5 million to construct and \$500 to \$750 per mile to operate and maintain.¹⁸⁰ Route C and its associated facilities will cost \$10.7 million to construct and \$500 to \$750 per mile to operate and maintain.¹⁸¹
191. It will cost less to construct Route A and B and their associated facilities than Route C.

Interference

192. Corona from transmission line conductors can generate electromagnetic “noise” in the radio frequency range. This noise may cause broadband interference at the same frequencies that many communication and media signals are transmitted. This noise can cause interference with the reception of these signals depending on the frequency and strength of the signal. Loose hardware on the transmission line may also cause interference.¹⁸²
193. Digital and satellite television, FM radio, internet and cellular phones are not expected to be impacted by the proposed Project.¹⁸³
194. AM radio frequency interference typically occurs immediately under a transmission line and dissipates rapidly to either side. If radio interference from transmission line corona does occur, satisfactory reception from AM radio stations can be restored by appropriate modification of (or addition to) the receiving antenna system.¹⁸⁴

¹⁷⁸ Ex. 2 at p. 6-30 (Application).

¹⁷⁹ Ex. 21 at p. 9 (EA).

¹⁸⁰ Ex. 21 at p. 9 (EA).

¹⁸¹ Ex. 21 at p. 9 (EA).

¹⁸² Ex. 21 at p. 58 (EA).

¹⁸³ Ex. 21 at pp. 58-59 (EA).

¹⁸⁴ Ex. 21 at p. 58 (EA).

195. Corona-generated noise and not the EMF from transmission lines could be a source of interference for agricultural GPS systems. Any transmission line structure that is placed in an agricultural field would have GPS coordinates that may be added to the farmer's GPS unit coordinates. However, if the GPS unit is not configured to accept new coordinates, the user would have to manually divert around any structures placed in fields. There are also specialty antennas that can be connected to existing GPS-based systems that will increase reception.¹⁸⁵

Certificate of Need

196. Pursuant to Minn. Stat. § 216B.243, subd. 2, "No large energy facility shall be sited or constructed in Minnesota without the issuance of a certificate of need by the Commission." In the case of a high-voltage transmission line, a large energy facility is defined as, (1) any high-voltage transmission line with a capacity of 200 kV or more and greater than 1,500 feet in length, and (2) any high-voltage transmission line with a capacity of 100 kV or more with more than ten miles of its length in Minnesota or that crosses a state line.
197. A certificate of need is not required for Route A or Route B, as the transmission line capacity is less than 200 kV, and because Route A and Route B are less than 10 miles in length.
198. Route C is over 10 miles in length and, therefore, would require a certificate of need decision.

Summary of Human and Environmental Impacts and Commitment of Resources

199. All routes analyzed in the environmental assessment have human and environmental impacts, some of which are unavoidable if the project is permitted and built. None of the routes evaluated are expected to cause an irreversible or irretrievable commitment of resources.
200. All three routes will pass within 50-200 feet from at least 18 to 21 homes.¹⁸⁶

¹⁸⁵ Ex. 21 at p. 59 (EA).

¹⁸⁶ Finding 83.

201. Route A and Route B are both 7.25 miles long, Route C is 13 miles long. Pursuant to Minn. Stat. § 216B.243, subd. 2, Route C would require a certificate of need, Route A and Route B would not.
202. Route A will have less overall impact to land-based economies than Route B and Route C.¹⁸⁷
203. There are fewer surface water resources and riparian areas that will be impacted by Routes A and B, than within Route C.¹⁸⁸
204. Route A and B would impact less wetlands when compared to Route C.¹⁸⁹
205. Route A and B would impact less forest and forested wetland acreage when compared to Route C.¹⁹⁰
206. Route A would follow more existing road and utility rights-of-way when compared to Route B and Route C.¹⁹¹ Route A would follow existing road and utility rights-of-way for 100 percent of its route.¹⁹²
207. Route C would result in greater habitat fragmentation impacts than Routes A or B, as it contains large areas of contiguous habitat between U.S. Highway 71 and County Highway 4. Transmission line encroachments into large areas of contiguous habitat, such as those associated with Route C may result in changes to avian activity and increases avian fatality.¹⁹³
208. Routes A and B would have less Effect on Rare and Unique Natural Resources in the Project area when compared to Route C.¹⁹⁴
209. It will cost less to construct Route A and B and their associated facilities than Route C.¹⁹⁵
210. The Applicant has stated that the need for the Project is driven by the need for a new Potato Lake Substation.¹⁹⁶ Route C is not a viable route alternative because, as explained by Itasca-Mantrap, the ATF Alternative Substation locations defeat the intended purpose of the Project as designed.¹⁹⁷

¹⁸⁷ Finding 141.

¹⁸⁸ Finding 157.

¹⁸⁹ Finding 164.

¹⁹⁰ Finding 169.

¹⁹¹ Finding 178.

¹⁹² Finding 175.

¹⁹³ Finding 179.

¹⁹⁴ Finding 187.

¹⁹⁵ Finding 191.

¹⁹⁶ Ex. 32 at p. 4 (GRE Letter to ALJ).

¹⁹⁷ Ex. 37 at p. 19, Item IIIE82 (ALJ Report).

Applicable Statutory Conditions

211. Minn. Stat. § 216B.243, subd. 2, states that no large energy facility shall be sited or constructed in Minnesota without the issuance of a certificate of need by the Commission. Minn. Stat. § 216B.2421, subd. 2(3) defines a “large energy facility” as any high voltage transmission line with a capacity of 100 kV or more with more than ten miles of length or that crosses a state line.
212. Minn. Stat. § 216E.03, subd. 7, and Minn. R. 7850.4100 provide considerations in designating sites and routes and determining whether to issue a permit for a large electric power generating plant or a high-voltage transmission line.
213. Minn. Stat. § 216E.02, subd. 2 provides that questions of need, including size, type, and timing; alternative system configurations; and voltage must not be included in the scope of environmental review conducted under this chapter.

Based on the Findings of Fact the Commission makes the following:

CONCLUSIONS OF LAW

1. Any of the foregoing Findings more properly designated as Conclusions are hereby adopted as such.
2. The Public Utilities Commission has jurisdiction over the subject matter of this proceeding pursuant to Minn. Stat. § 216E.03, subd. 2.
3. The project qualifies for review under the alternative permitting process of Minn. Stat. § 216E.04 and Minn. R. 7850.2800.
4. The Applicant, the Office of Energy Security, and the Public Utilities Commission have complied with all procedural requirements required by law.
5. The Office of Energy Security has completed an environmental assessment of this project as required by Minn. Stat. § 216E.04, subd. 5, and Minn. R. 7850.3700.
6. The Public Utilities Commission has considered all the pertinent factors relative to its determination of whether a route permit should be approved as required by Minn. Stat. § 216E.03, subd. 7, and Minn. Rule 7850.4100.
7. The conditions included in the route permit are reasonable and appropriate.

Based on the Findings of Fact, Conclusions of Law contained herein and the entire record of this proceeding, the Commission hereby makes the following:

ORDER

1. A route permit is hereby issued to Great River Energy to construct approximately 7.25 miles of new overhead 115 kV transmission line between a newly proposed Potato Lake Substation in Arago Township to a tap point on Great River Energy's existing Mantrap Sub Tap 34.5 kV line in section five of Henrietta Township, Hubbard County, Minnesota.
 - a. The Potato Lake Substation will be located is along U.S. Highway 71 in the southeast corner of the northeast corner of section 21 in Arago Township. The Potato Lake Substation will require an approximate 96 foot by 146 foot fenced-in area on a 3.2 acre parcel.
 - b. The transmission line exits the new Potato Lake Substation in Section 21 of Arago Township along U.S. Highway 71 and proceeds south paralleling U.S. Highway 71 for approximately 1.5 miles to 230th Street (Northern Pine Road); east along 230th Street for approximately 1.5 miles to 141st Avenue; south approximately 1 mile along 141st avenue to County Highway 18; then east paralleling County Highway 18 for approximately 3.25 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in section five of Henrietta Township and section 32 of Lake Emma Township along County Highway 4.
 - c. The route width for the entire length of the transmission line is 300 feet, 150 feet either side of the nearest existing road or utility right-of-way that the route follows, is approved.
2. The route permit shall be issued in the form attached hereto, with a map showing the approved route.

Approved and adopted this _____ day of November 2010.

BY ORDER OF THE COMMISSION

Burl W. Haar,
Executive Secretary

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

**ROUTE PERMIT FOR CONSTRUCTION OF A HIGH-VOLTAGE TRANSMISSION
LINE AND ASSOCIATED FACILITIES**

IN HUBBARD COUNTY

**ISSUED TO
GREAT RIVER ENERGY
PUC DOCKET NO. ET2/TL-10-86**

In accordance with the requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850, this route permit is hereby issued to:

GREAT RIVER ENERGY

Great River Energy is authorized by this route permit to construct a new 7.25-mile 115 kilovolt (kV) transmission line between a newly proposed Potato Lake substation to be constructed in Arago Township and a tap point on Great River Energy's existing Mantrap Sub Tap 34.5 kV transmission line in Lake Emma Township, Hubbard County, Minnesota. The new 115 kV transmission facility line would initially be operated at 34.5 kV until conversion to 115 kV becomes necessary.

The transmission line and associated facilities shall be built within the route identified in this permit, as portrayed on the official route maps, and in compliance with the conditions specified in this permit.

Approved and adopted this _____ day of November, 2010

BY ORDER OF THE COMMISSION

Burl W. Haar,
Executive Secretary

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FIGURES

Figure 1 – Overview Proposed Route

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ATTACHMENTS

Minnesota Public Utilities Commission Complaint Handling Procedures for High-Voltage Transmission Lines

Minnesota Public Utilities Commission Compliance Filing Procedures for Permitted Energy Facilities

1 ROUTE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this route permit to Great River Energy (Permittee) pursuant to Minn. Stat. § 216E.03 and Minn. R. Chapter 7850. This permit authorizes the Permittee to construct approximately 7.25 miles of new 115 kV transmission line and associated facilities in Hubbard County, Minnesota and as identified in the attached Route Permit Maps, hereby incorporated into this document.

2 PROJECT DESCRIPTION

The Permittee is authorized to construct a project comprising a 7.25-mile transmission line and Potato Lake Substation as described in the Route Permit Application and evaluated in the Environmental Assessment. The approved route is shown on the Route Permit Maps attached to this permit and further designated as described.

2.1 115 kV High-Voltage Transmission Line

The 115 kV transmission line route would be located northeast of the city of Park Rapids in Hubbard County, Minnesota. The project would specifically be located in sections of Arago, Lake Emma, Todd, and Henrietta townships.

Project Location Data

County	Township Name	Township	Range	Sections
Hubbard	Arago	141 N	35 W	21, 22, 26, 27, 28, 34, 35, 36
	Henrietta	140 N	34 W	5, 6
	Lake Emma	141 N	34 W	31, 32
	Todd	140 N	35 W	1, 2

The Route is 7.25 miles of new overhead 115 kV transmission line between the new Potato Lake Substation in section 21 of Arago Township and a tap point on GRE's existing Mantrap Sub Tap 34.5 kV line in both section five of Henrietta Township and section 32 of Lake Emma Township.

2.2 Substation

The new Potato Lake substation will be a fenced-in area of 96 feet by 146 feet on a 3.2 acre parcel located in section 21 of Arago Township, along U.S. Highway 71. Itasca-Mantrap has purchased 3.2 acres of the land and will own all common facilities (land, fence, etc.) (*See Figure 1*).

2.3 Structures & Conductors

The Permittee will use single-pole, direct-embedded wood structures, or similar. The poles average 65 to 80 feet in height with spans of 300 to 400 feet between poles. Horizontal post insulators will be used unless design requires longer spans beyond the capability of the insulators, in which case a braced post design will be utilized to accommodate the increased loadings.

Single-pole with underbuild design will be used in areas where the new transmission line will utilize the existing right-of-way of Itasca-Mantrap distribution lines along U.S. Highway 71 and 230th Street (Northern Pine Road) and including new 12.5 kV distribution lines on the new 115 kV structures that follow along 230th Street (Northern Pine Road) and 141st Avenue up to the intersection with County Highway 18. Where the structures are “stacked” with a 115kV above a 12.5 kV the higher total voltage will result in poles heights of 75 to 85 feet with span length of 250 to 300 feet.

The Applicant will develop strategies in an Avian Mitigation Plan that will be implemented to avoid or minimize impacts to birds or their habitats at the Potato River crossing pursuant to Section 5.1 of this Permit. The Avian Mitigation Plan will be submitted to the Commission with the Plan and Profile for the Project.

The three phases of the 115kV transmission line will each consist of one single 26/7 kcmil 477 steel-reinforced aluminum conductor.

One shield wire will be strung above the conductors to prevent damage from lightning strikes. These shield wires are typically less than one inch in diameter and include fiber optic cables, which allow a path for substation protection equipment to communicate with equipment at other terminals on the transmission line.

Transmission Line and Structure Specifications

Line Voltage	Conductor	Structure Type	Pole Material	Foundation	Found-ation dia.	Height (feet)	Span (feet)
115 kV Single- Circuit	ACSR 477 kcmil 26/7	Single Pole Horizontal- Post	Wood	Direct Embed	20 inches	60-85	300-400
115 kV Single-Circuit with 12.5 kV Distribution Underbuild	ACSR 477 kcmil 26/7	Single Pole Horizontal- Post with 12.5 kV Distribution Underbuild	Wood	Direct Embed	20 inches	70-85	250-300
115 kV Single-Circuit	ACSR 477 kcmil 26/7	Angle Structure	Guyed Wood, Laminated Wood or Steel	Direct Embedment with guys or Drilled Pier	48-60 inches	60-85	NA
115 kV Single-Circuit	ACSR 477 kcmil 26/7	H-Frame	Wood	Direct Embed	20 inches	60-85	600-800

Transmission lines shall be equipped with protective devices (breakers and relays located where transmission lines connect to substations) to safeguard the public in the event of an accident. Associated facilities will be properly fenced and accessible only by authorized personnel.

3 DESIGNATED ROUTE

The approved route is shown on the official route maps attached to this permit and further designated as follows:

The transmission line route exits the new Potato Lake Substation in Section 21 of Arago Township along U.S. Highway 71 and proceeds south paralleling U.S. Highway 71 for approximately 1.5 miles to 230th Street (Northern Pine Road); east along 230th Street for approximately 1.5 miles to 141st Avenue; south approximately 1 mile along 141st Avenue to County Highway 18; then east paralleling County Highway 18 for approximately 3.25 miles to County Highway 4 and a new three-way switch on the existing Mantrap Sub Tap 34.5 kV line in both section five of Henrietta Township and section 32 of Lake Emma Township along County Highway 4.

3.1 Route Width and Alignment

The designated route will be limited to 300 feet in width as depicted on the attached Official Route Maps. This width will provide the Permittee with flexibility for minor adjustments of the specific alignment or right-of-way to accommodate landowner requests and unforeseen conditions. The final alignment (i.e., permanent and maintained rights-of-way) will be located within this designated route unless otherwise authorized below.

The designated route, as shown on the attached aerial photos anticipates an alignment that would follow two to five feet outside existing road rights-of-way (County Highway 4, County Highway 18, 141st Street, 230th Street and U.S. Highway 71) or replace distribution structures and follow Itasca-Mantrap's existing distribution line right-of-way along U.S. Highway 71, and that minimizes the overall potential impacts relating to the factors identified in Minn. R. 7850.4100, as evaluated in the environmental review and permitting processes. Consequently, this permit anticipates that the actual right-of-way will generally conform to this alignment unless changes are requested by individual landowners, unforeseen conditions are encountered, or are otherwise provided for by this permit. Any alignment modifications within this designated route shall be located so as to have comparable overall impacts relative to the factors in Minn. R. 7850.4100 as does the alignment identified in this permit, and shall be specifically identified in, and approved as, part of the Plan and Profile submitted pursuant to Part 4.1 of this permit.

Route width variations outside the designated route may be allowed for the Permittee to overcome potential site specific constraints. These constraints may arise from any of the following:

- 1) Unforeseen circumstances encountered during the detailed engineering and design process.
- 2) Federal or state agency requirements.
- 3) Existing infrastructure within the transmission line route, including but not limited to roadways, railroads, natural gas and liquid pipelines, high voltage electric transmission lines, or sewer and water lines.

- 4) Planned infrastructure improvements identified by state agencies and LGUs and made part of the evidentiary record during the contested case proceeding for this permit.

Any alignment modifications arising from these site specific constraints that would result in right-of-way placement outside the designated route shall be located so as to have comparable overall impacts relative to the factors in Minn. R. 7850.4100 as does the alignment identified in this permit and shall also be specifically identified (i.e., highlight or otherwise specified) in and approved as part of the Plan and Profile submitted pursuant to Part 4.1 of this permit.

3.2 Right-of-Way Placement

Where the transmission line route parallels existing highway and other road rights-of-way, the transmission line right-of-way shall occupy and utilize the existing right-of-way to the maximum extent possible, consistent with the criteria in Minn. R. 7850.4100, the other requirements of this permit and, for highways under the jurisdiction of the Minnesota Department of Transportation (Mn/DOT), Mn/DOT rules, policies, and procedures for accommodating utilities in trunk highway rights-of-way.

3.3 Right-of-Way Width

The 115 kV transmission line will be built primarily with single pole structures, which will require a 100-foot right-of-way. Where specialty structures are required for long spans or in environmentally sensitive areas, up to 180 feet of right-of-way may be employed.

4 PERMIT CONDITIONS

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

4.1 Plan and Profile

At least 30 calendar days before right-of-way preparation for construction begins on any segment or portion of the project, the Permittee shall provide the Commission with a Plan and Profile of the right-of-way and the specifications and drawings for right-of-way preparation, construction, transmission structure specifications and locations, and restoration for the transmission line. The documentation shall include maps depicting the plan and profile including the right-of-way, alignment, and structures in relation to the route and alignment approved per the permit.

The Permittee may not commence construction until the 30 days has expired or until the Commission 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 intend to make any significant changes in its Plan and Profile or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission 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.

4.2 Construction Practices

The Permittee shall follow those specific construction practices and material specifications described in the Great River Energy Application to the Commission for a Route Permit, dated February 26, 2010, and as described in the environmental assessment and Findings of Fact, unless this permit establishes a different requirement, in which case this permit shall prevail.

4.2.1 Field Representative

At least 10 days prior to commencing construction, the Permittee shall advise the Commission 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.

The field representative's address, phone number, email, and emergency phone number shall be provided to the Commission and shall be made available to affected landowners, residents, public officials and other interested persons. The Permittee may change the field representative at any time upon written notice to the Commission.

4.2.2 Local Governments

During construction, the Permittee shall minimize any disruption to public services or public utilities. To the extent disruptions to public services occur, these would be temporary and the Permittee will work to restore service promptly. Where any impacts to utilities have the potential to occur, Permittee will work with both landowners and local agencies to determine the most appropriate pole placement.

The Permittee shall cooperate with county and city road authorities to develop appropriate signage and traffic management during construction.

4.2.3 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.

4.2.4 Noise

Construction and routine maintenance activities will be limited to daytime working hours, as defined in Minn. R. 7030.0200, to ensure nighttime noise level standards will not be exceeded.

4.2.5 Vegetation Removal in the Right-of-Way

The Permittee shall minimize the number of trees to be removed in selecting the right-of-way specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences and areas such as, trail crossings and the Lake Country Scenic By-Way, where vegetative screening may minimize aesthetic impacts, to the extent that such actions do not violate sound engineering principles or system reliability criteria.

As part of construction, low growing brush or tree species are allowable within and at the outer limits of the easement area. Taller tree species that endanger the safe and reliable operation of the transmission facility need to be removed. To the extent practical, low growing vegetation that will not pose a threat to the transmission facility or impede construction should remain in the easement area.

4.2.6 Aesthetics

The Permittee will consider input pertaining to visual impacts from landowners or land management agencies prior to final location of structures, rights-of-way, and other areas with the potential for visual disturbance. Care will be used to preserve the natural landscape and prevent any unnecessary destruction of the natural surroundings in the vicinity of the project during construction and maintenance.

New structures will be designed to support the existing transmission and distribution lines, thereby allowing the use of existing alignments and will share existing road rights-of-way to the extent that such actions do not violate sound engineering principles or system reliability criteria.

Structures will be placed at the maximum feasible distance, consistent with sound engineering principles and system reliability criteria, from intersecting roads, highway, or trail crossings and could cross roads to minimize or avoid impacts. The Permittee shall work with landowners to identify and address issues related to the transmission line such as distance from existing structures, tree clearing, and other aesthetic concerns.

4.2.7 Erosion Control

The Permittee shall follow standard erosion control measures outlined in Minnesota Pollution Control Agency (MPCA) guidance and best management practices regarding sediment control practice during construction include protecting storm drain inlets, use of silt fences, protecting exposed soil, immediately stabilizing restored soil, controlling temporary soil stockpiles, and controlling vehicle tracking.

The Permittee shall implement reasonable measures to minimize runoff during construction and shall promptly plant or seed, erect silt fences, and/or use erosion control blankets in non-agricultural areas that were disturbed where structures are installed.

When utilizing seed to establish temporary and permanent vegetative cover on exposed soil, the Permittee will consult with the Minnesota Department of Transportation (Mn/DOT) and MnDNR to select site characteristic seed certified to be free of noxious weeds.

Contours will be graded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation, provide for proper drainage, and prevent erosion. All areas disturbed during construction of the facilities will be returned to their pre-construction condition.

Larger disturbed areas of one acre or more (substation site) will be regulated by a National Pollutant Discharge Elimination System (NPDES) permit and Stormwater Pollution Prevention Plan prepared for the project.

4.2.8 Wetlands and Water Resources

Structures shall be located to span watercourses, wetlands, and floodplains to the extent practicable and consistent with sound engineering principles. Minimal grading of areas around pole locations may be required to accommodate construction vehicles and equipment.

Minimal grading of areas around pole locations may be required to accommodate construction vehicles and equipment. The Permittee will use wooden mats or a composite mat system for construction during frozen conditions to minimize disturbance and compaction of wetlands and riparian areas during construction. Soil excavated from the wetlands and riparian areas will be contained and not placed back into the wetland or riparian area. Silt fencing or other erosion control measures will be used to prevent sedimentation when working near wetlands and watercourses. Areas disturbed by construction activities will be restored to pre-construction conditions (soil horizons, contours, vegetation, etc.) (*See also* Section 4.2.7 [Erosion Control]).

4.2.9 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when installing the high-voltage transmission line on the approved route. In the event that a resource is encountered, the SHPO should be contacted and consulted; the nature of the resource should be identified; and a determination should be made on the eligibility for listing in the National Register of Historic Places. Where feasible, avoidance of the resource is required.

4.2.10 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. Space should be selected to limit the removal and impacts to vegetation.

Temporary lay down areas outside of the authorized transmission line right-of-way will be obtained from affected landowners through rental agreements and are not provided for in this permit

Temporary driveways may be constructed between the roadway and the structures to minimize impact by using the shortest route possible. Construction mats may also be used to minimize impacts on access paths and construction areas.

4.2.11 Restoration

The Permittee shall restore the right-of-way, temporary work spaces, access roads, abandoned right-of-way, and other public or private lands affected by construction of the transmission line. Practices to restore areas impacted by construction and maintenance activities are further described in Section 4.2.7 of this permit. Restoration within the right-of-way must be compatible with the safe operation, maintenance, and inspection of the transmission line.

Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities. The Permittee shall compensate landowners for any yard/landscape, crop, soil compaction, drain tile, or other damages that may occur during construction.

4.2.12 Notice of Permit

The Permittee shall inform all employees, contractors, and other persons involved in the transmission line construction of the terms and conditions of this permit.

4.3 Periodic Status Reports

The Permittee shall report to the Commission on progress regarding finalization of the route, design of structures, and construction of the transmission line. The Permittee need not report more frequently than weekly.

At the request of the Commission, the Permittee shall report to the Commission on progress regarding finalization of the route and design of structures. The Permittee shall report to the Commission on construction of the Project in a manner outlined in the Environmental Management Plan under Section 5.1 Special Conditions.

4.4 Complaint Procedures

Prior to the start of construction, the Permittee shall submit to the Commission, the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements set forth in the complaint procedures attached to this permit.

4.5 Notification to Landowners

The Permittee shall provide all affected landowners with a copy of this permit and the complaints procedures at the time of the first contact with the landowners after issuance of this permit. At the time of first contact, the Permittee shall also provide all affected landowners with a copy of the *Landowner Guide to Easements* publication provided by OES.

The Permittee shall contact landowners prior to entering the property or conducting maintenance along the route. The Permittee shall avoid construction and maintenance practices, particularly the use of fertilizer, herbicides or other pesticides, that are inconsistent with the landowner's or tenant's use of the land.

The Permittee shall work with landowners to locate the high-voltage transmission lines to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads.

4.6 Completion of Construction

4.6.1 Notification to Commission

At least three days before the line is to be placed into service, the Permittee shall notify the Commission of the date on which the line will be placed into service and the date on which construction was complete.

4.6.2 As-Builts

Within 60 days after completion of construction, the Permittee shall submit copies of all the final as-built plans and specifications developed during the project.

4.6.3 GPS Data

Within 60 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (ArcGIS compatible map files, GPS coordinates, associated database of characteristics, etc.) for all structures associated with the transmission lines, each switch, and each substation connected.

4.7 Electrical Performance Standards.

4.7.1 Grounding

The Permittee shall design, construct, and operate the transmission line in a manner that the maximum induced steady-state short-circuit current shall be limited to five milliamperes (mA), root mean square (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 induced short-circuit current between ground and the object so as not to exceed one mA rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code (NESC). Permittee shall address and rectify any induced current problems that arise during transmission line operation.

4.7.2 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.

4.7.3 Interference with Communication Devices

If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems 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.

4.8 Other Requirements.

4.8.1 Applicable Codes

The Permittee shall comply with applicable requirements of the 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. The transmission line facility shall also meet the North American Electric Reliability Corporation's (NERC) reliability standards.

4.8.2 Other Permits

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required local, state and federal permits for the project and comply with the conditions of these permits. A list of the required permits is included in the route permit application and the environmental assessment. The Permittee shall submit a copy of such permits to the Commission upon request.

4.8.3 Pre-emption

Pursuant to Minn. Stat. § 216E.10, subd. 1 and 2, this route permit shall be the sole route approval required to be obtained by the Permittee 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.

4.8.4 Delay in Construction

If the Permittee have not commenced construction or improvement of the route within four years after the date of issuance of this permit, the Commission shall consider suspension of the permit in accordance with Minn. R. 7850.4700.

5 SPECIAL CONDITIONS

The Permittee shall provide a report to the Commission as part of the Plan and Profile submission that describes the actions taken and mitigative measures developed regarding the Project and the following Special Conditions.

5.1 Avian Mitigation Plan for Potato River Crossing

The Permittee will prepare an Avian Mitigation Plan to identify potential issues that may pose a risk to avian species specific to the Potato River crossing. The Permittee will develop strategies in an Avian Mitigation Plan that will be implemented to avoid or minimize impacts to birds or their habitats at this crossings. The Permittee shall consult with the MnDNR and USFWS in developing the Plan. The Plan shall include strategies to ensure construction activities are scheduled to avoid disturbing normal eagle breeding, feeding, or sheltering behavior, as necessary. The Permittee shall ensure the project conforms with the requirements of the Bald and Golden Eagle Protection Act in consultation with the USFWS. The Avian Mitigation Plan will be submitted to the Commission with the Plan and Profile for the Project.

The Permittee's standard transmission design shall incorporate adequate spacing of conductor(s) and grounding devices in accordance with Avian Power Line Interaction Committee (APLIC) standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices.

5.2 Blanding's Turtle

The Permittee shall follow measures and recommendations for avoiding and minimizing impacts to Blanding's turtle populations as outlined in the *Minnesota Department of Natural Resources Division of Ecological Resources Environmental Review Fact Sheet Series for Blanding's Turtle* (http://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/factsheet.pdf). Construction and maintenance personnel shall be made aware of the Blanding's turtle and their habitat during pre-construction meetings.

6 PERMIT AMENDMENT

The permit conditions in Sections 4 and 5 may be amended at any time by the Commission. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

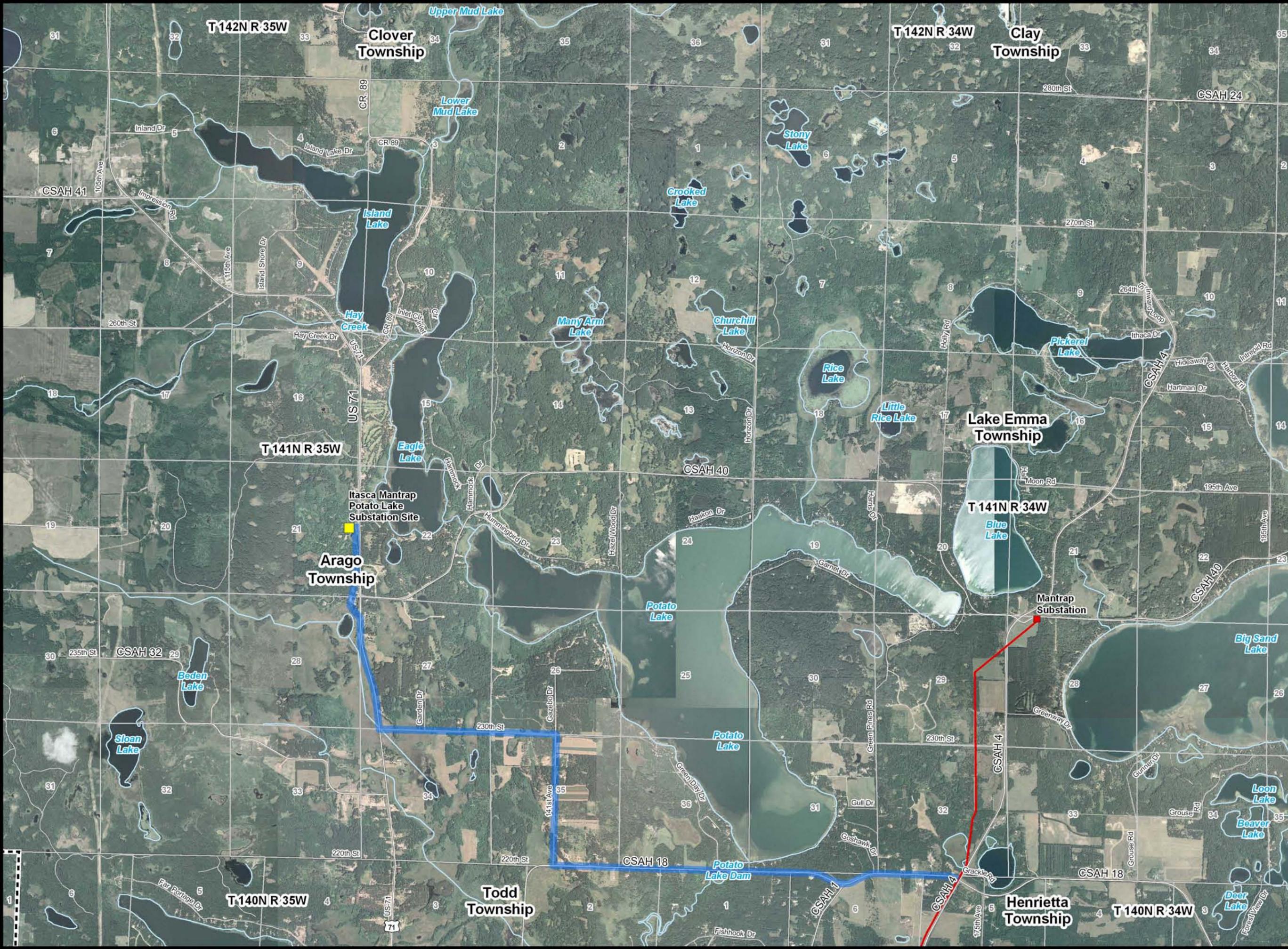
7 TRANSFER OF PERMIT

The Permittee may request at any time that the Commission 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 Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required.

8 REVOCATION OR SUSPENSION OF THE PERMIT

The Commission may initiate action to revoke or suspend this permit at any time. The Commission shall act in accordance with the requirements of Minn. R. 7850.5100 to revoke or suspend the permit.



- Proposed Itasca-Mantrap (IM)
 - Distribution Substation
- Existing Itasca-Mantrap
 - Distribution Substation
- Proposed Great River Energy (GRE)
 - Proposed Route
- Existing Great River Energy
 - 34.5 kV Transmission Line
- Land Base Features
 - Road Centerline
 - PLS Section Lines



Updated: 10/19/2010

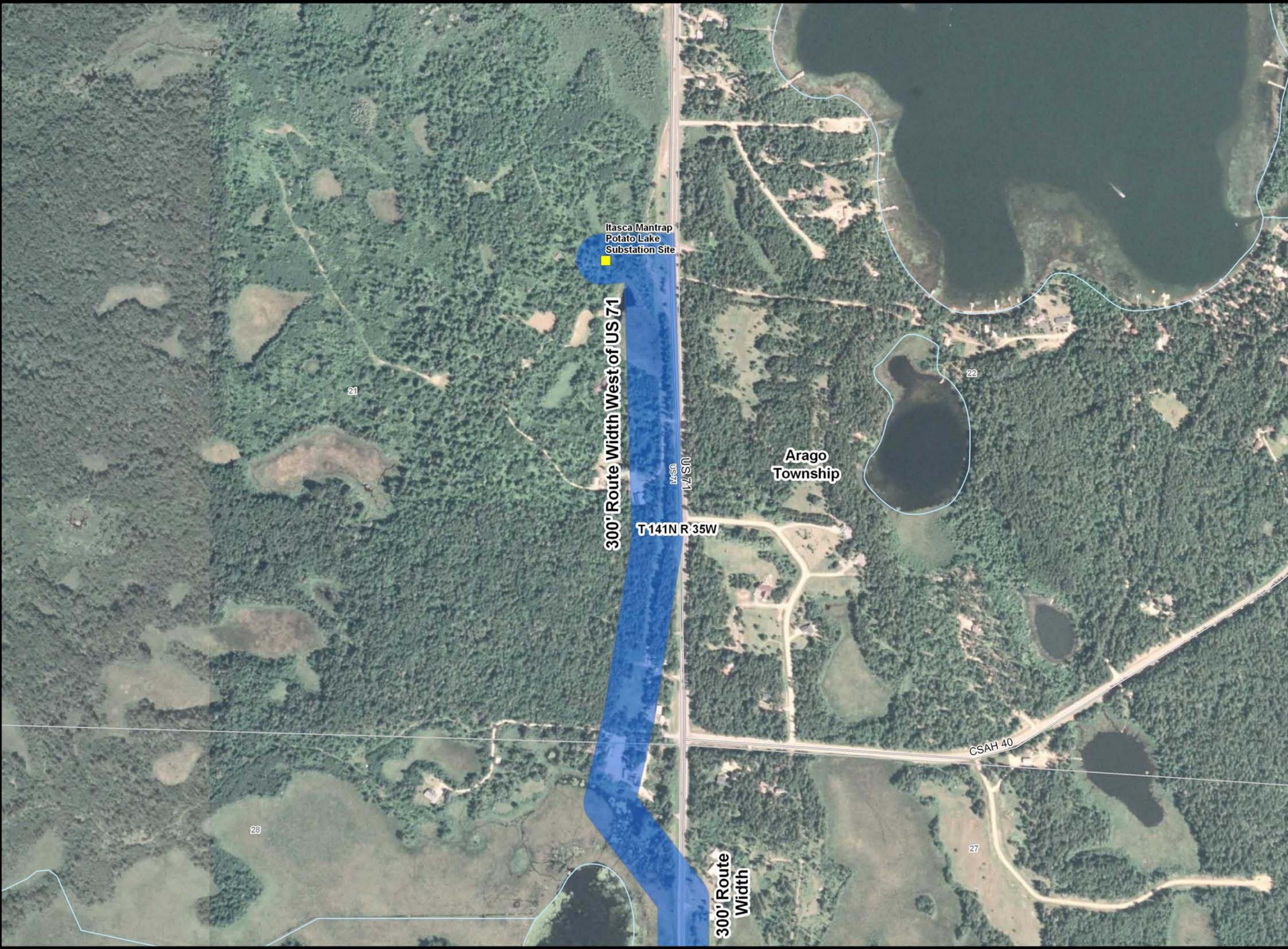


Data Sources Vary Between
MNDOT, MNDNR, MNGEO
and Great River Energy
2009 Color Orthophotos from
Farm Services Administration (FSA)

Map Projection:
UTM, NAD83, Zone15, Meters

**Potato Lake
115 kV Transmission
Line & Substation
Project:**

**Figure 1
Proposed
Route**



- Proposed Itasca-Mantrap (IM)
- Distribution Substation
- Existing Itasca-Mantrap
- Distribution Substation
- Proposed Great River Energy (GRE)
- Proposed Route
- Existing Great River Energy
- 34.5 kV Transmission Line
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Updated: 10/19/2010



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Map Projection:
UTM, NAD83, Zone15, Meters

**Potato Lake
115 kV Transmission
Line & Substation
Project:**

**Figure 2A
Proposed Route
Map 01**

- Proposed Itasca-Mantrap (IM)
■ Distribution Substation
 Existing Itasca-Mantrap
■ Distribution Substation
 Proposed Great River Energy (GRE)
■ Proposed Route
 Existing Great River Energy
— 34.5 kV Transmission Line
 Land Base Features
— Road Centerline
 PLS Section Lines



Updated: 10/19/2010

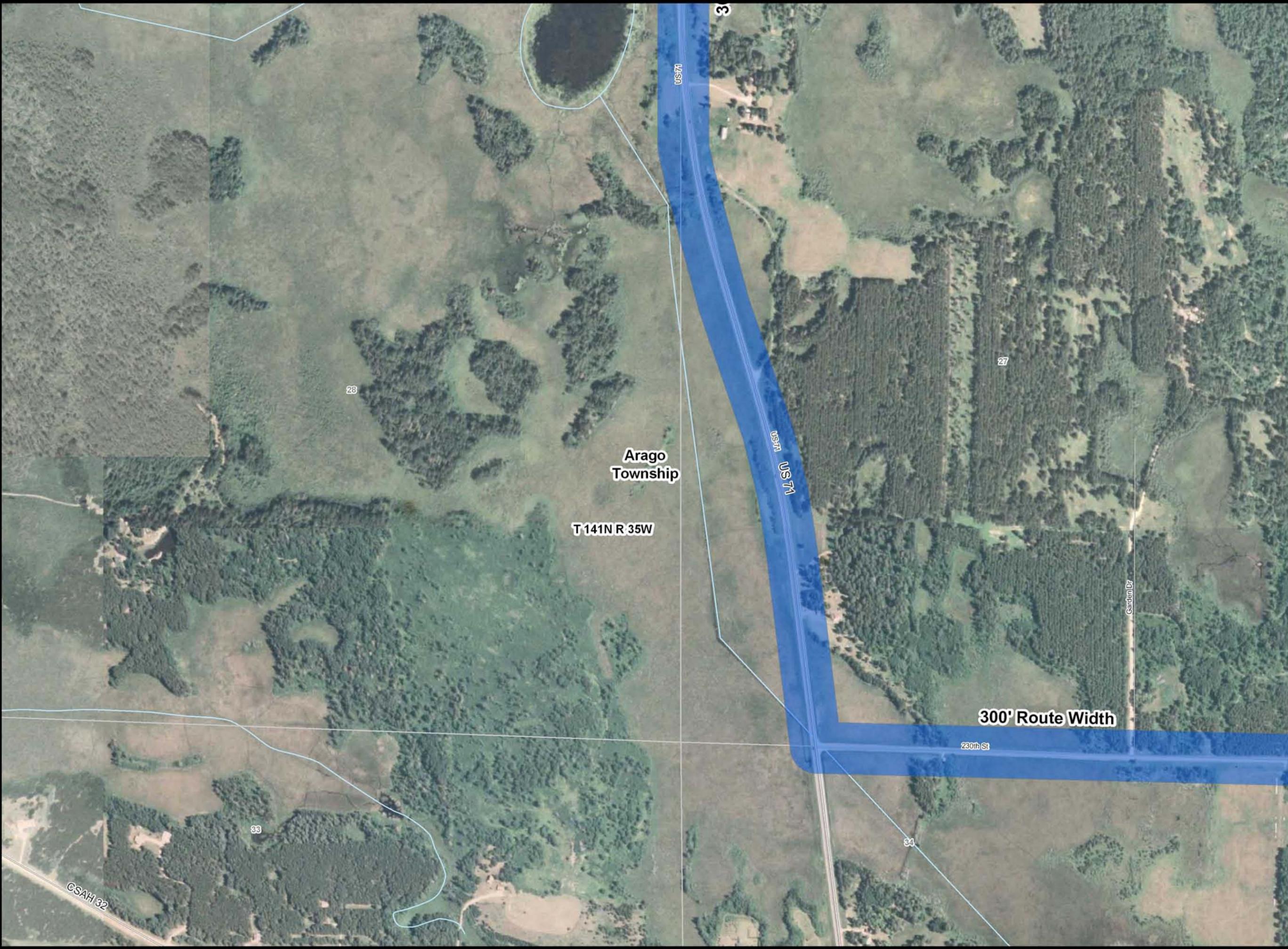


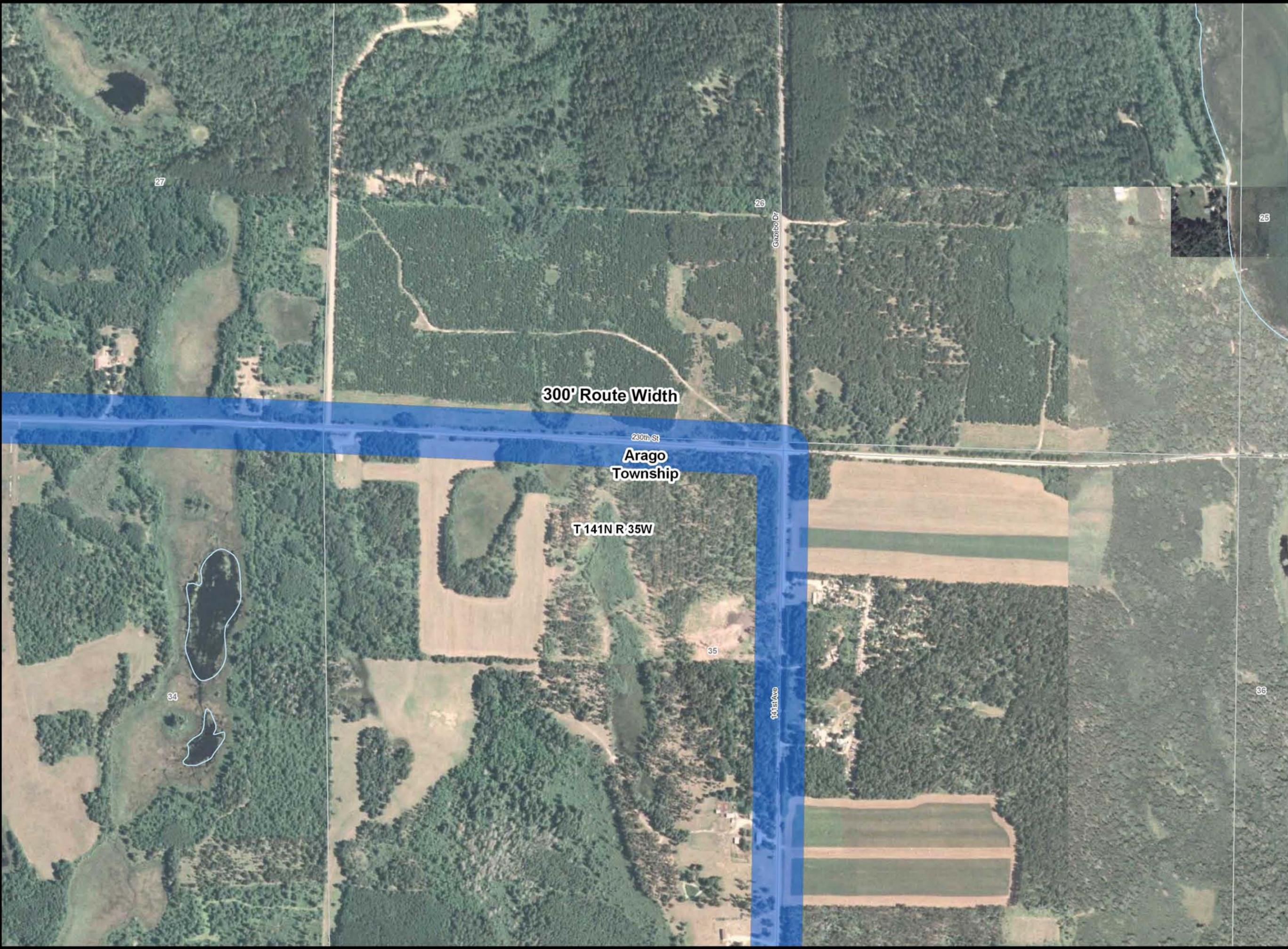
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 2009 Color Orthophotos from
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Map Projection:
 UTM, NAD83, Zone15, Meters

**Potato Lake
 115 kV Transmission
 Line & Substation
 Project:**

**Figure 2B
 Proposed Route
 Map 02**





300' Route Width

230th St
Arago Township

T 141N R 35W

26
Gazabo Dr

111st Ave

25

35

27

34

36

- Proposed Itasca-Mantrap (IM)
■ Distribution Substation
 Existing Itasca-Mantrap
■ Distribution Substation
 Proposed Great River Energy (GRE)
■ Proposed Route
 Existing Great River Energy
— 34.5 kV Transmission Line
 Land Base Features
— Road Centerline
□ PLS Section Lines



Updated: 10/19/2010



Data Sources Vary Between
MNDOT, MNDNR, MNGEO
and Great River Energy
2009 Color Orthophotos from
Farm Services Administration (FSA)

Map Projection:
UTM, NAD83, Zone15, Meters

**Potato Lake
115 kV Transmission
Line & Substation
Project:**

**Figure 2C
Proposed Route
Map 03**



- Proposed Itasca-Mantrap (IM)
 - Distribution Substation
- Existing Itasca-Mantrap
 - Distribution Substation
- Proposed Great River Energy (GRE)
 - Proposed Route
- Existing Great River Energy
 - 34.5 kV Transmission Line
- Land Base Features
 - Road Centerline
 - PLS Section Lines



Updated: 10/19/2010



Data Sources Vary Between
MNDOT, MNDNR, MNGEO
and Great River Energy
2009 Color Orthophotos from
Farm Services Administration (FSA)

Map Projection:
UTM, NAD83, Zone15, Meters

**Potato Lake
115 kV Transmission
Line & Substation
Project:**

**Figure 2D
Proposed Route
Map 04**



- Proposed Itasca-Mantrap (IM)
■ Distribution Substation
 Existing Itasca-Mantrap
■ Distribution Substation
 Proposed Great River Energy (GRE)
■ Proposed Route
 Existing Great River Energy
— 34.5 kV Transmission Line
 Land Base Features
— Road Centerline
 PLS Section Lines



Updated: 10/19/2010

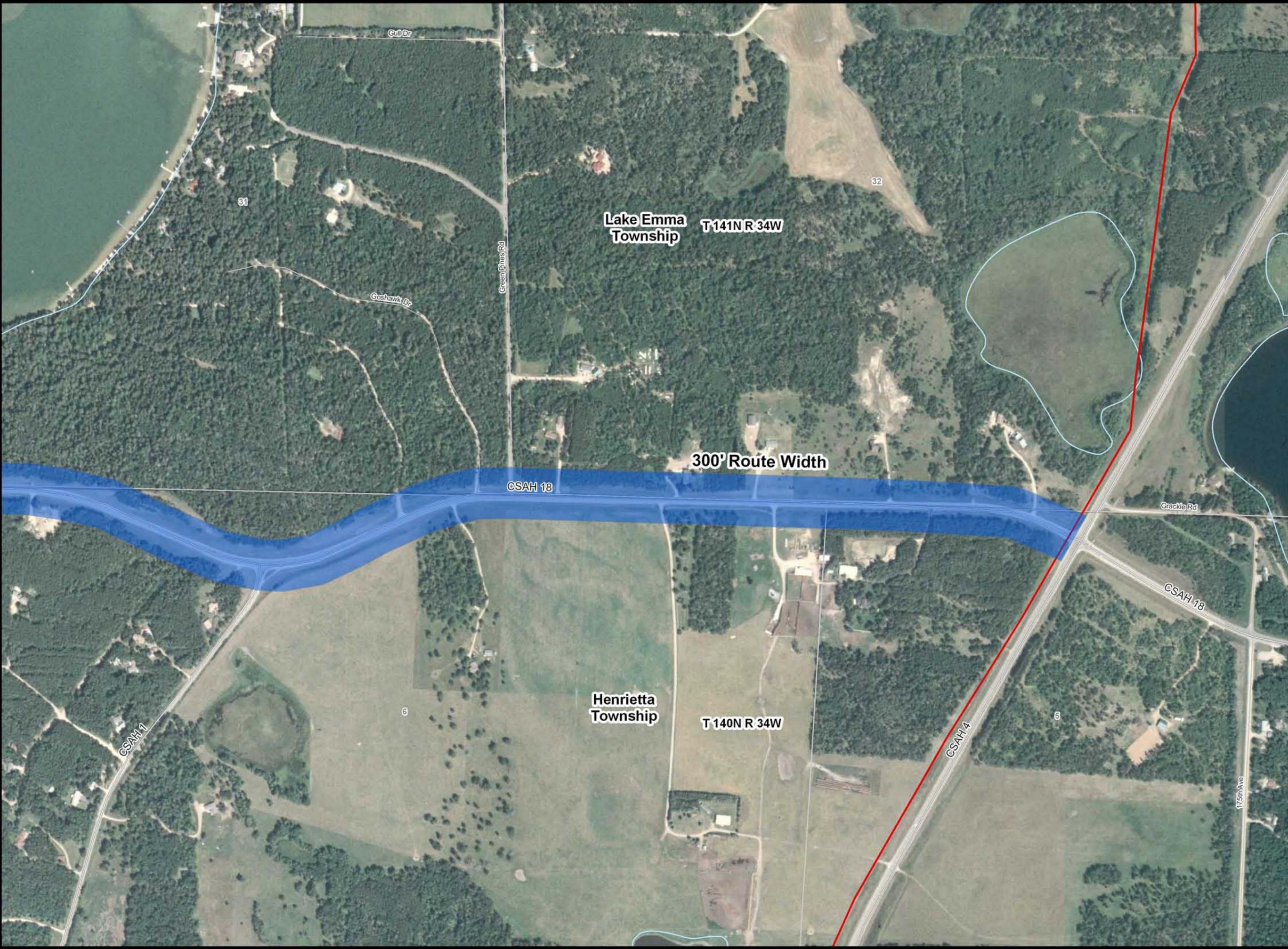


Data Sources Vary Between
 MNDOT, MNDNR, MNGEO
 and Great River Energy
 2009 Color Orthophotos from
 Farm Services Administration (FSA)

Map Projection:
 UTM, NAD83, Zone15, Meters

**Potato Lake
 115 kV Transmission
 Line & Substation
 Project:**

**Figure 2E
 Proposed Route
 Map 05**



- Proposed Itasca-Mantrap (IM)
■ Distribution Substation
 Existing Itasca-Mantrap
■ Distribution Substation
 Proposed Great River Energy (GRE)
■ Proposed Route
 Existing Great River Energy
— 34.5 kV Transmission Line
 Land Base Features
— Road Centerline
□ PLS Section Lines



Updated: 10/19/2010



Data Sources Vary Between
 MNDOT, MNDNR, MNGEO
 and Great River Energy
 2009 Color Orthophotos from
 Farm Services Administration (FSA)

Map Projection:
 UTM, NAD83, Zone15, Meters

**Potato Lake
 115 kV Transmission
 Line & Substation
 Project:**

**Figure 2F
 Proposed Route
 Map 06**

MINNESOTA PUBLIC UTILITIES COMMISSION COMPLAINT HANDLING PROCEDURES FOR HIGH-VOLTAGE TRANSMISSION LINES

A. Purpose

To establish a uniform and timely method of reporting complaints received by the Permittees concerning Permit conditions for site preparation, construction, cleanup and restoration, operation and resolution of such complaints.

B. Scope

This document describes complaint reporting procedures and frequency.

C. Applicability

The procedures shall be used for all complaints received by the Permittees and all complaints received by the Commission under Minnesota Rule 7829.1500 or 7829.1700 relevant to this Permit.

D. Definitions

Complaint: A verbal or written statement presented to the Permittees by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration or other route and associated facilities permit conditions. Complaints do not include requests, inquiries, questions or general comments.

Substantial Complaint: A written complaint alleging a violation of a specific Route Permit condition that, if substantiated, could result in Permit modification or suspension pursuant to the applicable regulations.

Unresolved Complaint: A complaint which, despite the good faith efforts of the Permittees and a person(s), remains to both or one of the parties unresolved or unsatisfactorily resolved.

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.

E. Complaint Documentation and Processing

The Permittees shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:

- Name of complainant, address, phone number, and e-mail address.
- Precise property description or parcel number.
- Name of Permittees representative receiving Complaint and date of receipt.
- Nature of Complaint and the applicable Site Permit conditions(s).
- Activities undertaken to resolve the Complaint.
- Final disposition of the Complaint.

The Permittees shall designate an individual to summarize Complaints for the Commission. This person's name, phone number and email address shall accompany all complaint submittals.

A Person presenting the Complaint should to the extent possible, include the following information in their communications:

- Name, address, phone number, and e-mail address.
- Date
- Tract or parcel
- Whether the complaint relates to (1) a route permit matter, or (2) a compliance issue.

F. Reporting Requirements

The Permittees shall report all complaints to the Commission according to the following schedule:

Immediate Reports: All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to High-Voltage Transmission Line Permit Compliance, 1-800-657-3794, or by e-mail to: DOC.energypermitcompliance@state.mn.us, or 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 Filed to Dr. Burl W. Haar, Executive Secretary, Public Utilities Commission, using the Minnesota Department of Commerce eDocket system (see eFiling instructions attached to this permit).

If no Complaints were received during the preceding month, the Permittees shall submit (eFile) a summary indicating that no complaints were received.

G. Complaints Received by the Commission or Office of Energy Security

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the Permittees.

H. Commission Process for Unresolved Complaints

Initial Screening: Commission staff shall perform an initial evaluation of unresolved Complaints submitted to the Commission. Complaints raising substantial High-Voltage Transmission Line Permit issues shall be processed and resolved by the Commission. Staff shall notify Permittees and appropriate person(s) if it determines that the Complaint is a Substantial Complaint. With respect to such Complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the Staff notification. Staff shall present Briefing Papers to the Commission, which shall resolve the Complaint within twenty days of submission of the Briefing Papers.

Permittees Contacts for Complaints

Complaints shall be sent to:

Michelle Lommel
Great River Energy
12300 Elm Creek Boulevard
Maple Grove, MN 55369

Telephone: (763) 445-5977

Email: mlommel@grenergy.com

MINNESOTA PUBLIC UTILITIES COMMISSION COMPLIANCE FILING PROCEDURE FOR PERMITTED ENERGY FACILITIES

1. Purpose

To establish a uniform and timely method of submitting information required by the Commission energy facility permits.

2. Scope and Applicability

This procedure encompasses all compliance filings required by permit.

3. Definitions

Compliance Filing – A sending (filing) of information to the Commission, where the information is required by a Commission site or route permit.

4. Responsibilities

The Permittees shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, Public Utilities Commission, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website: <https://www.edockets.state.mn.us/EFiling/home.jsp>

General instructions are provided on the website. Permittees must register on the website to eFile documents.

All filings must have a cover sheet that includes:

- Date
- Name of submitter / Permittee
- Type of permit (Site or Route)
- Project location
- Project docket number
- Permit section under which the filing is made
- Short description of the filing

Filings that are graphic intensive (e.g., maps, plan and profile) must, in addition to being eFiled, be submitted as paper copies and on CD. Copies and CDs should be sent to: 1) Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN, 55101-2147, and 2) Department of Commerce, Energy Facility Permitting, 85 7th Place East, Suite 500, St. Paul, MN, 55101-2198.

PERMIT COMPLIANCE FILINGS¹

PERMITTEES: Great River Energy

PERMIT TYPE: 115 kV High-Voltage Transmission Line Route Permit

PROJECT LOCATION: Hubbard County, Minnesota

PUC DOCKET NUMBER: ET2/TL-10-86

Filing Number	Permit Section	Description	Due Date
1.	4.2.1	Contact information for field representative	10 days prior to construction
2.	4.3	Periodic Status Reports	Not more than weekly
3.	4.4	Complaint Procedures	Prior to start of construction
4.	4.5	Notification to Landowners	First contact with the landowners after issuance of permit
5.	4.1	Plan and Profile of Right-of-Way	30 days before right-of-way preparation or construction
6.	4.6.1	Notice of completion and date of placement in service	Three days prior to energizing
7.	4.6	Provide As-built and GPS information (ArcGIS files or similar)	Within 60 days of construction
8.	5.1	Avian Mitigation Plan	Submit with Plan and Profile

¹ This compilation of permit compliance filings is provided for the convenience of the Permittee and the Commission. However, it is not a substitute for the permit; the language of the permit controls.