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May 6, 2015

Daniel Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: Comments and Recommendations of Department of Commerce
Energy Environmental Review and Analysis Staff
Docket No. ET2, E015/TL-14-797

Dear Mr. Wolf,

Attached are comments and recommendations of Department of Commerce, Energy Environmental Review and Analysis (EERA) staff in the following matter:

In the Matter of the Application of Great River Energy and Minnesota Power for a Certificate of Need and Route Permit for the Menahga Area 115 kV Transmission Line Project in Hubbard, Wadena, and Becker Counties, Minnesota

The application was filed on January 15, 2015, by:

Carole Schmidt
Great River Energy
12300 Elm Creek Blvd.
Maple Grove, MN 55369

EERA staff is providing the Commission with a summary of the scoping process for the environmental assessment (EA) that will be prepared for this project and the alternatives that EERA staff intends to recommend for inclusion in the scope of the EA. Staff is available to answer any questions the Commission may have.

Sincerely,

A handwritten signature in black ink that reads "Ray Kirsch". The signature is written in a cursive style with a large, stylized "R" and "K".

Ray Kirsch
EERA Staff

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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS AND RECOMMENDATIONS OF MINNESOTA DEPARTMENT OF COMMERCE ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS

DOCKET NO. ET2, E015/TL-14-797

Date: May 6, 2015

EERA Staff: Ray Kirsch.....651-539-1841

In the Matter of the Application by Great River Energy and Minnesota Power for a Certificate of Need and Route Permit for the Menahga Area 115 kV Transmission Line Project in Hubbard, Wadena, and Becker Counties, Minnesota

Issues Addressed: These comments and recommendations address the environmental assessment (EA) scoping process, the alternatives proposed during the scoping process, and those alternatives which Department of Commerce, Energy Environmental Review and Analysis staff intends to recommend for inclusion in the scope of the EA.

Documents Attached: (1) Route and Site Alternatives Maps, (2) Comments of Great River Energy to EERA Staff

Additional documents and information can be found on eDockets:
<https://www.edockets.state.mn.us/EFiling/search.jsp> (14-797) and on the Department's website:
<http://mn.gov/commerce/energyfacilities/Docket.html?Id=33985>.

This document can be made available in alternative formats (i.e. large print or audio) by calling 651-539-1530 (voice).

Introduction and Background

On January 15, 2015, Great River Energy and Minnesota Power (applicants) filed a joint certificate of need and route permit application to construct and operate a new 115 kilovolt (kV) transmission line and associated facilities in the Minnesota counties of Hubbard, Wadena and Becker.¹ On March 18, 2015, the Commission accepted the application as complete.² In

¹ Great River Energy and Minnesota Power, Application to the Minnesota Public Utilities Commission for a Certificate of Need and Route Permit for the Menahga Area 115 kV Transmission Line Project, January 15, 2015, eDockets Numbers [20151-106222-01](#), [20151-106222-02](#), [20151-106222-03](#), [20151-106222-04](#), [20151-106222-05](#), [20151-106222-06](#) [hereinafter CN and Route Permit Application].

accordance with Minnesota Rule 7850.3700, Department of Commerce, Energy Environmental Review and Analysis (EERA) staff initiated the scoping process for preparation of an environmental assessment (EA). Based on public input from the scoping process, the Deputy Commissioner of the Department of Commerce will finalize and issue the scoping decision for the EA that will be prepared for the project.³

Project Description

Applicants propose to construct approximately 22.5 miles of new 115 kV transmission line from the existing Hubbard substation westward to a new Straight River substation, and then southward to a new Blueberry substation near the city of Menahga and to a new Red Eye substation. The project is proposed to include a short section of double-circuit 115 kV line and modifications to existing substations.

Applicants are requesting a 500 foot route width for the project with a larger route width in select areas. Applicants indicate that the new 115 kV line will require a right-of-way (easement) of 100 feet. Transmission line structures for the new 115 kV line will be 60 to 90 feet in height, with a span between structures in the range of 275 to 400 feet. Applicants indicate that construction on the project is anticipated to commence in late spring 2016 and be completed by early 2017.

Project Purpose

Applicants indicate in their application that the proposed project is needed to relieve potential overloads on the existing 34.5 kV transmission system near the city of Menahga, and to serve a proposed, new oil pumping station in the area.

Regulatory Process and Procedures

In Minnesota, no person may construct a high voltage transmission line without a route permit from the Commission.⁴ A high voltage transmission line is defined as a conductor of electric energy designed for and capable of operation at a voltage of 100 kV or more and greater than 1,500 feet in length.⁵ The proposed project includes approximately 22.5 miles of new 115 kV transmission line and therefore requires a route permit from the Commission.

The proposed project will operate at a voltage greater than 100 kV and will have a length in Minnesota greater than 10 miles; thus, the project, per Minnesota Statute 216B.2421, is a large energy facility and requires a certificate of need from the Commission.⁶

Applicants intending to submit a project under the Commission's alternative permitting process for high voltage transmission lines are required to provide a 10-day advance notice of this intent

² Commission Order Finding Application Complete, Directing Use of Informal Review Process, and Authorizing Joint Proceedings and Combined Environmental Review, March 18, 2015, eDockets Number [20153-108363-01](#) [hereinafter Commission Application Completeness Order].

³ Minnesota Rule 7850.3700.

⁴ Minnesota Statute 216E.03.

⁵ Minnesota Statute 216E.01.

⁶ Minnesota Statute 216B.243.

to the Commission before submitting their route permit application.⁷ On December 11, 2014, applicants filed a letter with the Commission indicating their intent to submit a route permit application for the proposed project under the alternative permitting process.⁸ Because the project will operate at a voltage between 100 and 200 kV, the project qualifies for the Commission's alternative permitting process.⁹

Environmental Review

Route permit applications for transmission lines are subject to environmental review conducted by EERA staff. Projects proceeding under the alternative permitting process require the preparation of an environmental assessment (EA).¹⁰ An EA is a document which describes the potential human and environmental impacts of a proposed project and possible mitigation measures. Certificate of need applications for transmission lines are also subject to environmental review conducted by EERA staff; staff must prepare an environmental report (ER) for such projects.¹¹

If an applicant for a certificate of need applies for a route permit (for the same project) prior to completion of the ER, EERA staff may elect to prepare an EA in lieu of an ER.¹² If an EA is prepared in lieu of an ER, the EA must include an analysis of alternatives to the project required by Minnesota Rule 7849.1500.¹³ For the applicants' proposed project, EERA staff has elected to prepare one environmental review document for the project, an EA.

The first step in the preparation of the EA for the project is scoping.¹⁴ After providing opportunity for public comment on the scope of the EA, the Department of Commerce (Department) determines the scope of the EA.¹⁵

Scoping Process Summary

Commission staff and EERA staff held a joint public information and environmental assessment scoping meeting on March 24, 2015, in the city of Menahga, Minn. Approximately 35 persons attended the meeting. Comments were received from several persons at the meeting; some comments included specific route alternatives.¹⁶

A comment period, ending on April 10, 2015, provided the public an opportunity to submit comments to EERA staff on issues, mitigation measures, and alternatives for consideration in the

⁷ Minnesota Rule 7850.2800.

⁸ Notice of Intent by Great River Energy and Minnesota Power to Submit a Route Permit Application under the Alternative Permitting Process, December 11, 2014, eDockets Number [201412-105229-01](#).

⁹ Minnesota Statute 216E.04, Subd. 2.

¹⁰ Minnesota Rule 7850.3700.

¹¹ Minnesota Rule 7849.1200.

¹² Minnesota Rule 7849.1900.

¹³ Id.

¹⁴ Minnesota Rule 7850.3700.

¹⁵ Id.

¹⁶ Oral Comments on Scope of Environmental Assessment, eDockets Number [20154-109244-01](#) [hereinafter Oral Comments].

scope of the EA. Comments were received from 10 persons and one state agency.¹⁷ Several of these comments included specific route and site alternatives for consideration in the EA.

EERA Staff Analysis and Comments

The scoping process for environmental review in Minnesota is designed to identify and analyze “only those potentially significant issues relevant to the proposed project” and alternatives to the project.¹⁸ With respect to route and site alternatives, the Department is charged with including those alternatives which will “assist in the [Commission’s] ultimate decision on the permit application.”¹⁹

When route and site alternatives are proposed during the scoping process that could be carried forward for evaluation in the environmental review document for a project, EERA staff analyzes these alternatives using five criteria:

- 1) Was the alternative submitted in a timely manner, i.e., prior to the end of the public comment period for scoping?
- 2) Does the alternative contain “an explanation of why the site or route should be included in the [environmental review document]”?²⁰ EERA staff interprets this text to require that route and site alternatives – to be included in the scope of the environmental review document – must mitigate a potential impact of the proposed project, and this mitigation must be, in general terms, explained by the proposer of the route or site alternative.²¹ The proposer need not provide extensive supporting data for their alternative, but must provide enough explanation such that it is fairly clear the potential impact(s) being mitigated by the route or site alternative.
- 3) Is the alternative outside of areas prohibited in Minnesota Rules 7850.4300, e.g., state and national parks?
- 4) Does the alternative meet the applicant’s stated need for the project?
- 5) Is the alternative feasible? Can the alternative be constructed and is it permissible by state and federal agencies with authority for construction or operation of the project?

Finally, EERA staff analyzes the remaining alternatives to determine if evaluation in the EA would aid in the Commission’s decision on the permit application. This includes comparing the alternative to other alternatives that could avoid or mitigate the impacts described by the

¹⁷ Written Comments on Scope of Environmental Assessment, eDockets Number [20154-109244-02](#) [hereinafter Written Comments]. Some persons submitted more than one written comment. The total number of written citizen comments submitted was 14.

¹⁸ Minnesota Rule 4410.2100, Subp. 1.

¹⁹ Minnesota Rule 7850.3700, Subp. 2B.

²⁰ Id.

²¹ As an example, if a proposed transmission line proceeds past 10 residences and a citizen suggests route alternative A, which also proceeds past 10 residences but in another location, it is not clear how alternative A mitigates potential impacts of the project.

proposer of the alternative and determining if the alternative is likely to negatively impact any of the routing factors of Minnesota Rule 7850.4100 relative to the proposed route.

EERA staff has used the above the criteria to analyze the route and site alternatives proposed during the scoping process. All proposed alternatives are indicated on the attached maps and discussed here.

Nine route or route and site alternatives were proposed during the scoping process (see attached Alternatives Maps). These alternatives are:

- Southern Straight River substation alternative
- Blueberry alternative
- Western Blueberry substation alternative
- Pipeline alternative (consisting of two segments – a Pipeline North alternative and a Pipeline South alternative)
- East of 109th Ave. alternative
- 119th Ave. alternative
- Highway 71 alternative
- 139th Ave. alternative
- CSAH 23 alternative

With respect to the above criteria, all nine alternatives were timely, provided adequate explanation of the impact(s) to be mitigated, are outside areas prohibited in Minnesota Rule 7850.4300, and are feasible. EERA staff believes that all alternatives except one, the County State Aid Highway 23 alternative (CSAH 23 alternative), meet the stated need for the project. However, EERA staff believes that the Southern Straight River substation alternative, the Pipeline North alternative, the 139th Ave. alternative, and the CSAH 23 alternative, would not aid in the Commission's decision on the applicants' route permit application.

Accordingly, EERA staff intends to recommend to the Deputy Commissioner of the Department the following six alternatives for inclusion in the scope of the EA that will be prepared for the project:

- Blueberry alternative
- Western Blueberry substation alternative
- Pipeline South alternative
- East of 109th Ave. Alternative
- 119th Ave. alternative
- Highway 71 alternative

Alternatives Recommended for Inclusion in the Scope of the EA

Blueberry Alternative

Mr. Leofwin Lindblom proposed the Blueberry alternative to mitigate aesthetic impacts and impacts to an operating gravel pit.²² He also noted that the alternative could mitigate property value impacts and impacts to radio and television reception.²³ The Blueberry alternative, in lieu of proceeding along Highway 87 west of the city of Menahga, would instead follow the county line south and then turn eastward crossing Section 30 of Blueberry Township and entering the proposed Blueberry substation from the west (Map Sheet 1). Several persons commented in support of Mr. Lindblom's proposed alternative.²⁴

Based on review of aerial photography, EERA staff believes that the Blueberry alternative would address potential impacts raised by Mr. Lindblom without shifting these same impacts to other persons in the project area and without introducing substantial new impacts. Thus, EERA staff believes that the Blueberry alternative would aid in the Commission's decision on the applicants' route permit application.

Western Blueberry substation alternative

Ms. Kari Tomperi commented in support of the Blueberry alternative and also suggested that a more westerly location for the Blueberry substation would mitigate aesthetic and agricultural impacts of the substation (Map Sheet 1).²⁵ Though Ms. Tomperi does not explicitly call out these impacts in her comment letter (she describes the western Blueberry substation site as "less damaging"),²⁶ the Tomperi family resides near the location of the proposed Blueberry substation, which includes agricultural fields. Thus, EERA staff understands Ms. Tomperi's alternative site for the Blueberry substation to be related to aesthetic and agricultural impacts.

Ms. Tomperi proposed that the Blueberry substation be located on the western edge of Section 30 of Blueberry Township (Map Sheet 1).²⁷ If the Blueberry substation were constructed at this location, the existing 34.5 kV line would need to be extended westward to reach the substation. This proposed western substation location would only be used in conjunction with the Blueberry route alternative.

Based on review of aerial photography, EERA staff believes that the western Blueberry substation site alternative would address agricultural impacts suggested by Ms. Tomperi and may address aesthetic impacts without shifting these same impacts to other person in the project area and without introducing substantial new impacts. Thus, EERA staff believes that the western Blueberry substation site alternative would aid in the Commission's decision on the applicants' route permit application.

²² Comment Letters of Mr. Leofwin Lindblom, Written Comments.

²³ Id.

²⁴ Comment Letters of Mel and Ardith Holtan and Ms. Kari Tomperi, Written Comments.

²⁵ Comment Letter of Ms. Kari Tomperi, Written Comments.

²⁶ Id.

²⁷ Id.

Pipeline South Alternative

Mr. Leofwin Lindblom proposed the Pipeline alternative to mitigate aesthetic impacts to residents along roadways in the project area.²⁸ This route alternative would utilize the existing Minnesota Pipeline Company (MPL) right-of-way in the project area – from the Pipeline substation to the proposed Blueberry substation and then to the proposed Red Eye substation (Map Sheets 1 and 2). Persons at the public meeting also suggested this alternative.²⁹

Because the proposed Blueberry substation is located very near the MPL pipeline right-of-way, the Pipeline alternative can be divided into two segments – a northern segment from the Straight River substation to the Blueberry substation (Pipeline North alternative), and a southern segment from the Blueberry substation to the Red Eye substation (Pipeline South alternative). As discussed further below, EERA staff believes that the Pipeline North alternative would significantly impact irrigated agricultural fields and would not aid in the Commission’s decision on the applicants’ route permit application.

Based on the attached maps and aerial photography, EERA staff believes the Pipeline South alternative, by paralleling an existing utility ROW other than that proposed by the applicants, would address the impacts noted by commenters without shifting these same impacts to other persons in the project area and without introducing substantial new impacts. The alternative parallels the existing MPL pipeline right-of-way from the proposed Blueberry substation to the Red Eye substation. The routing factors of Minnesota Rule 7850.4100, factors H and J, support the use of existing rights-of-way.³⁰ The Pipeline South alternative does cross agricultural fields and wetlands (Map Sheet 2). The alternative appears to be relatively distant from residences, which are generally located along roadways in the project area. Accordingly, EERA staff believes that the Pipeline South alternative would aid in the Commission’s decision on the applicants’ route permit application.

East of 109th Ave. Alternative

Wayne and Gala Dunbar and Ms. Michelle Neels proposed the East of 109th Ave. Alternative to mitigate impacts to their cattle, shelterbelts, and property values.³¹ This route alternative would proceed cross country, east of and parallel to 109th Ave., rather than utilizing the applicants’ proposed route along 109th Ave, to traverse the distance from the Blueberry substation to County State Aid Highway 13 (CSAH 13) (Map Sheet 2).

The alternative runs along the back property lines of landowners along 109th Ave. Thus, the East of 109th Ave. alternative places the new 115 kV line behind, rather than in front of, the properties along the east side of 109th Ave. In sum, the proposers believe that running behind their properties is more desirable than running in front of their properties.³²

²⁸ Comment Letters of Mr. Leofwin Lindblom, Written Comments.

²⁹ Oral Comments.

³⁰ Minnesota Rule 7850.4100. Factor H notes “use or paralleling of existing right-of-way, survey lines, natural division lines, and agricultural field boundaries.” Factor J notes “use of existing transportation, pipeline, and electrical transmission systems or rights-of-way.”

³¹ Comment Letters of Wayne and Gala Dunbar and Ms. Michelle Neels, Written Comments.

³² Id.

Based on review of aerial photography, EERA staff believes that the East of 109th Ave. alternative would address potential impacts raised by the proposers without shifting these same potential impacts to other persons in the project area and without introducing substantial new impacts. The alternative avoids wetlands. It does cross agricultural lands, but generally does so along field lines. Though the alternative does not utilize existing infrastructure ROW, it does utilize existing property and field lines.³³ The alternative places the route behind and away from residences along 109th Ave. Accordingly, EERA staff believes that the East of 109th Ave. alternative would aid in the Commission's decision on the applicants' route permit application.

119th Ave. Alternative

The second alternative proposed by the Dunbars and Ms. Neels to mitigate impacts to their cattle, shelterbelts, and property values would utilize 119th Ave., rather than the applicants' proposed route along 109th Ave, to traverse the distance from the Blueberry substation to CSAH 13 (Map Sheet 2).³⁴ This alternative, the 119th Ave. alternative, could utilize either 111th Ave. or the Pipeline South alternative to reach 350th St. and then 119th Ave. (Map Sheet 2).

Based on review of aerial photography, EERA staff believes that the 119th Ave. alternative would address potential impacts raised by the proposers without shifting these same potential impacts to other persons in the project area and without introducing substantial new impacts. Thus, EERA staff believes that the 119th Ave. alternative would aid in the Commission's decision on the applicants' route permit application.

Highway 71 Alternative

Wayne and Heidi Haverinen proposed the Highway 71 alternative to avoid impacts to their dairy cattle and a planned irrigation system.³⁵ This route alternative would utilize Highway 71, rather than the applicants' proposed route along 109th Ave., to traverse the distance from the Blueberry substation to CSAH 13 (Map Sheet 2). The alternative would utilize the existing 34.5 kV ROW to reach Highway 71 and then proceed southward to CSAH 13 (Map Sheet 2).

The Highway 71 alternative was previously considered and rejected by the applicants.³⁶ The alternative is described and analyzed in the applicants' application as the "Central Alternative Segment."³⁷ The applicants concluded that although this alternative would have tree removal and agricultural impacts similar to their proposed route, it would have relatively greater challenges with routing near residences and/or businesses.³⁸

Based on review of aerial photography, EERA staff believes that the Highway 71 alternative would address potential impacts raised by the Haverinens without shifting these same potential impacts to other persons in the project area and without introducing substantial new impacts. EERA staff is cognizant that this alternative may introduce new aesthetic impacts along

³³ See Minnesota Rule 7850.4100, factor H.

³⁴ Comment Letters of Wayne and Gala Dunbar and Ms. Michelle Neels, Written Comments.

³⁵ Comment Letters of Wayne and Heidi Haverinen, Written Comments.

³⁶ CN and Route Permit Application, Section 7.2.2.

³⁷ Id.

³⁸ Id.

Highway 71.³⁹ Additionally, EERA staff is aware that the impacts raised by the Haverinens could be mitigated by the East of 109th Ave. and the 119th Ave. alternatives. All of these points considered, EERA staff believes that the Highway 71 alternative would aid in the Commission's decision on the applicants' route permit application.

Alternatives That Are Not Recommended for Inclusion in the Scope of the EA

Southern Straight River Substation Alternative

Mr. Gerald Benjamin commented that the Hubbard substation is not the best northern substation endpoint for the project.⁴⁰ Mr. Benjamin noted that his proposal for a Southern Straight River substation would mitigate aesthetic impacts of the project by eliminating the need for approximately five miles of new 115 kV line, would be a more reliable electrical solution for the project, and would result in energy savings due to reduced transmission distances.⁴¹

Mr. Benjamin proposed that a substation be constructed where the existing 230 kV line in the area crosses the applicants' proposed route for the new 115 kV line (Map Sheet 1).⁴² In essence, Mr. Benjamin proposes moving the applicants' proposed Straight River substation to a more southern location and using this new substation to: (1) feed the new 115 kV line, which would proceed southward out of the substation along the applicants' proposed route, and (2) feed the existing Pipeline substation via a new 34.5 kV line northward along the applicants' proposed route.

This alternative would eliminate the need for the existing 34.5 kV line and the proposed 115 kV line from the Hubbard substation to the Straight River substation (Map Sheet 1). However, the alternative would require the Straight River substation to have transformers, breakers, and other electrical equipment necessary to transform the 230 kV feed entering the substation to 115 kV and 34.5 kV.

The alternative would place a new 230 kV substation at a location that is inconsistent with best practices for electrical transmission infrastructure (see attached GRE comments). Substations utilizing 230 kV sources are typically 20 to 30 miles apart in rural areas; the alternative would place the Hubbard substation and the Straight River substation approximately 8 miles apart. Thus, EERA staff believes that the alternative would not maximize energy efficiencies and accommodate expansion of the electrical transmission grid (routing factor G).⁴³

The Southern Straight River substation alternative would cost approximately \$10 million dollars (GRE comments). The Straight River substation as proposed by the applicants would cost approximately \$2.8 million dollars.⁴⁴ Thus, substation costs are substantially higher for the alternative. However, the alternative removes the need to build approximately seven miles of

³⁹ Id.

⁴⁰ Comment Letters of Mr. Gerald Benjamin, Written Comments.

⁴¹ Id.

⁴² Id.

⁴³ Minnesota Rule 7850.4100, factor G ("Application of design options that maximize energy efficiencies, mitigate adverse environmental impacts, and could accommodate expansion of transmission or generating capacity").

⁴⁴ CN and Route Permit Application, Section 4.2.

new 115 kV line from the Hubbard substation to the Straight River substation. This results in a cost savings of approximately \$4 million dollars.⁴⁵ Accordingly, the alternative costs approximately \$3 million dollars more than the applicants' proposed project. The alternative introduces new costs which are dependent on design and route (routing factor L).⁴⁶

Though the Southern Straight River substation alternative may mitigate aesthetic impacts noted by the proposer, the alternative introduces substantial new impacts related to transmission efficiencies and expansion and to costs. Thus, EERA staff believes that the alternative would not aid in the Commission's decision on the applicants' route permit application.

Pipeline North Alternative

As noted above, Mr. Leofwin Lindblom and several public meeting commenters proposed the Pipeline alternative to mitigate aesthetic impacts to residents who live along roadways in the project area.⁴⁷ This alternative would utilize the existing Minnesota Pipeline Company (MPL) right-of-way in the project area – from the Pipeline substation to the proposed Blueberry substation and then to the proposed Red Eye substation (Map Sheets 1 and 2). The Pipeline alternative can be divided into two segments – the Pipeline North alternative and the Pipeline South alternative.

The Pipeline North alternative would proceed along the western edge of the MPL pipeline ROW (Map Sheet 1). The alternative would cross wetlands and agricultural fields. Importantly, the alternative would impact two irrigated agricultural fields just south of Hubbard Line Road. The alternative runs along the edge of one field and directly across another (Map Sheet 1). EERA staff believes the alternative would significantly impact these irrigated fields. Because of these impacts, EERA staff believes that the Pipeline North alternative would not aid in the Commission's decision on the applicants' route permit.

139th Ave. Alternative

The third alternative proposed by the Dunbars and Ms. Neels to mitigate impacts to their cattle, shelterbelts, and property values would utilize 139th Ave., rather than the applicants' proposed route along 109th Ave, to traverse the distance from the Blueberry substation to CSAH 13 (Map Sheet 2).⁴⁸ This alternative, the 139th Ave. alternative, would utilize the existing 34.5 kV ROW to reach 139th Ave. and then proceed southward to CSAH 13 (Map Sheet 2). The Haverinens note that the 139th Ave. alternative would avoid impacts to their dairy cattle and a planned irrigation system.⁴⁹

Though this alternative follows existing transmission and roadway ROW, it would impact substantial amounts of forested wetlands along 139th Ave. (Map Sheet 2). The alternative crosses into the southern part of the city of Menahga and through an industrial park. Based on review of aerial photography, a relatively larger ROW for the new 115 kV line in this industrial

⁴⁵ Id.

⁴⁶ Minnesota Rule 7850.4100, factor L (“Costs of constructing, operating, and maintaining the facility which are dependent on design and route”).

⁴⁷ Comment Letters of Mr. Leofwin Lindblom, Written Comments; Oral Comments.

⁴⁸ Comment Letters of Wayne and Gala Dunbar and Ms. Michelle Neels, Written Comments.

⁴⁹ Comment Letters of Wayne and Heidi Haverinen, Written Comments.

area could require movement or displacement of buildings and machinery. EERA staff notes that there are four other alternatives in the southern project area – East of 109th Ave. alternative, 119th Ave. alternative, Pipeline South alternative, and Highway 71 alternative – that could avoid the potential impacts noted by the proposers and that are anticipated to be analyzed in the EA.

Accordingly, because of the impacts to forested wetlands and to an industrial area in the city of Menahga, and because there are other routing alternatives that would avoid the potential impacts noted by the proposers without introducing substantial new impacts, EERA staff believes that the 139th Ave. alternative would not aid in the Commission’s decision on the applicants’ route permit application.

CSAH 23 Alternative

Ms. Neels proposed the CSAH 23 alternative to mitigate impacts to her cattle, shelterbelt, and property value.⁵⁰ The CSAH 23 alternative would include a new 115 kV line along CSAH 23, a new 115 kV line from the Menahga switch station to the proposed Blueberry substation, and a new 34.5 kV line from the Blueberry substation to the Pipeline substation (Map Sheet 3).

The CSAH 23 alternative was previously considered and rejected by the applicants.⁵¹ The alternative is described and analyzed in the applicants’ application as the “East Alternative,” as it run parallel to, but east of, the applicants’ proposed route.⁵² The applicants’ analysis of the CSAH 23 alternative concluded that it does not meet the need for the project and has less merit with respect to the routing factors of Minnesota Rule 7850.4100 than the applicant’s proposed route.⁵³

EERA staff concurs with the applicants’ analysis of the reliability of the CSAH 23 alternative – namely, that the alternative is less reliable than the applicants’ proposed route and is susceptible to the outage overloads proposed to be remedied by the project. The CSAH 23 alternative places the new 115 kV on the same poles or along the same ROW as the existing 34.5 kV system (Map Sheet 3). If there is an outage on these poles or along this ROW, e.g., due to a weather event, it would cause overloading of the Sebeka regulator station and the Verndale substation.⁵⁴

The applicants’ proposed route places the new 115 kV line away from the existing 34.5 kV Hubbard to Verndale transmission system, and away from the existing 34.5 kV feed to the Menahga substation. This placement increases the reliability of the transmission system in the project area and reduces the risk of a common 115/34.5 kV outage and related overloads. The CSAH 23 alternative decreases the relative reliability of the transmission system and risks a common 115/34.5 kV outage and related overloads. Therefore, the CSAH 23 alternative does not meet one of the stated needs for the project.

In addition, EERA staff notes that there are four other alternatives – East of 109th Ave. alternative, 119th Ave. alternative, Pipeline South alternative, and Highway 71 alternative – that

⁵⁰ Comment Letter of Ms. Michelle Neels, Written Comments.

⁵¹ CN and Route Permit Application, Section 7.2.1.

⁵² Id.

⁵³ Id.

⁵⁴ CN and Route Permit Application, Section 5.1.2

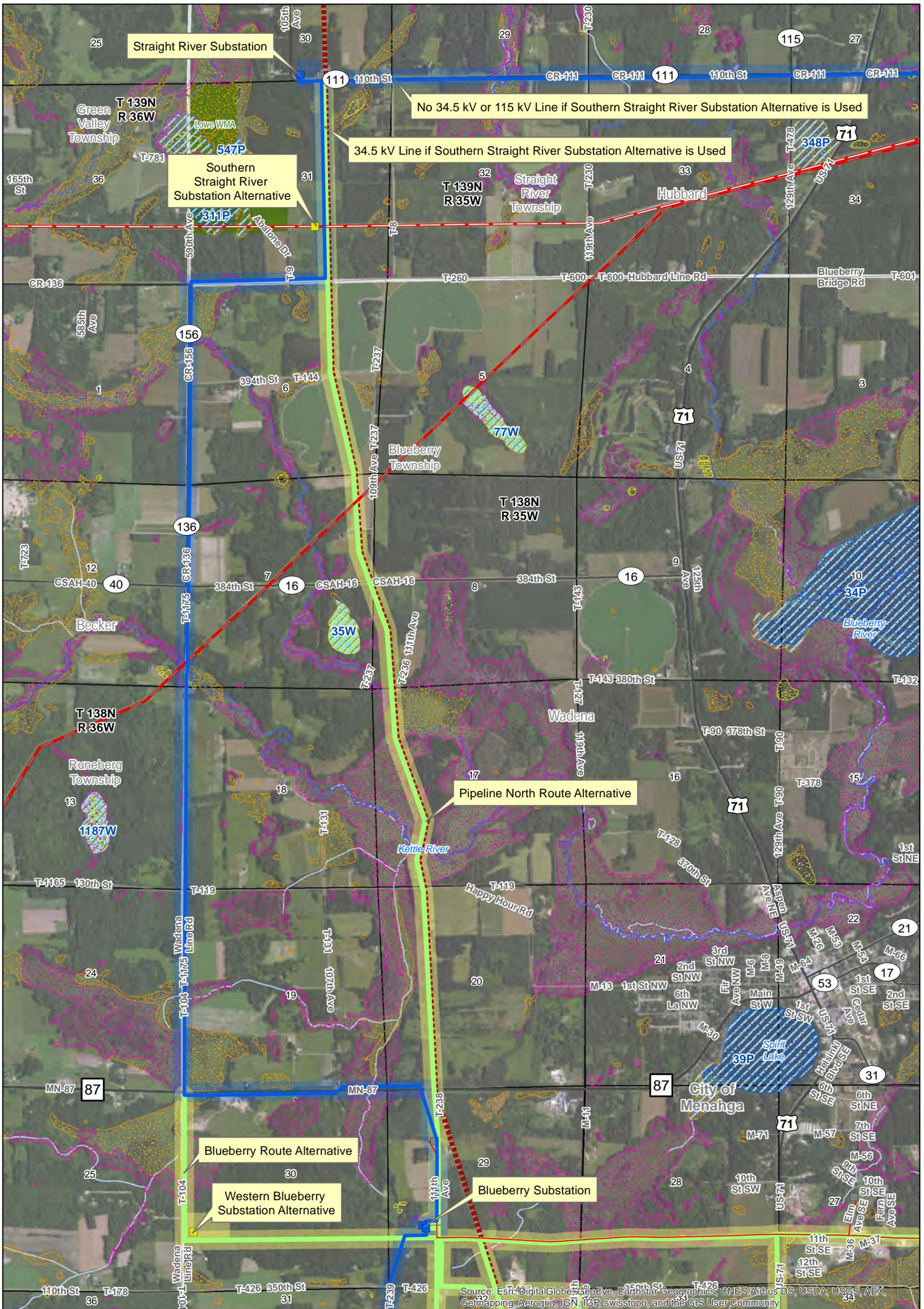
would avoid the potential impacts noted by the proposer and that are anticipated to be analyzed in the EA. Because these alternatives are located away from the existing 34.5 kV Hubbard to Verndale transmission system and avoid the potential outage overloads to which the CSAH 23 alternative is susceptible, these alternatives are relatively more reliable (routing factor K).⁵⁵

Additionally, these four alternatives, when utilized with the remainder of the applicants' proposed route, are approximately 30 percent shorter than the CSAH 23 alternative and thus likely to introduce fewer new impacts on human settlements, land-based economies, and the natural environment (routing factors A, C, and E, respectively).⁵⁶

Thus, because there are other routing alternatives that would avoid the potential impacts noted by the proposer without introducing substantial new impacts, EERA staff believes the CSAH 23 alternative would not aid in the Commission's decision on the applicants' route permit application.

⁵⁵ Minnesota Rule 7850.4100, factor K ("Electrical systems reliability").

⁵⁶ Minnesota Rule 7850.4100. Factor A notes "effects on human settlement, including, but limited to displacement, noise, aesthetics, cultural values, recreation, and public services." Factor C notes "effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining." Factor E notes "effects on the natural environment including effect on air and water quality resources and flora and fauna."



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Applicants	
	Proposed Alignment
	Proposed Route
	Proposed Substation
Alternatives	
	Alternative Alignment
	Alternative Route
	Alternative Substation

Existing	
	34.5 kV Transmission Line
	230 kV Transmission Line
	250 kV Transmission Line
	Substation
	Pipeline

MN Public Waters Inventory (PWI)	
	Public Water Wetland
	Public Water Basin
	MN Public Watercourse
NWI Wetlands	
	Freshwater Emergent Wetland
	Freshwater Forested/
	Freshwater Pond
	Lake
	MN Wildlife Management Areas

Data Sources Vary Between MNDOT, MNDNR, MNGEO and Great River Energy Aerial Image from ESRI Web service

Map Projection: WGS 1984 Web Mercator

0 2,000 Feet

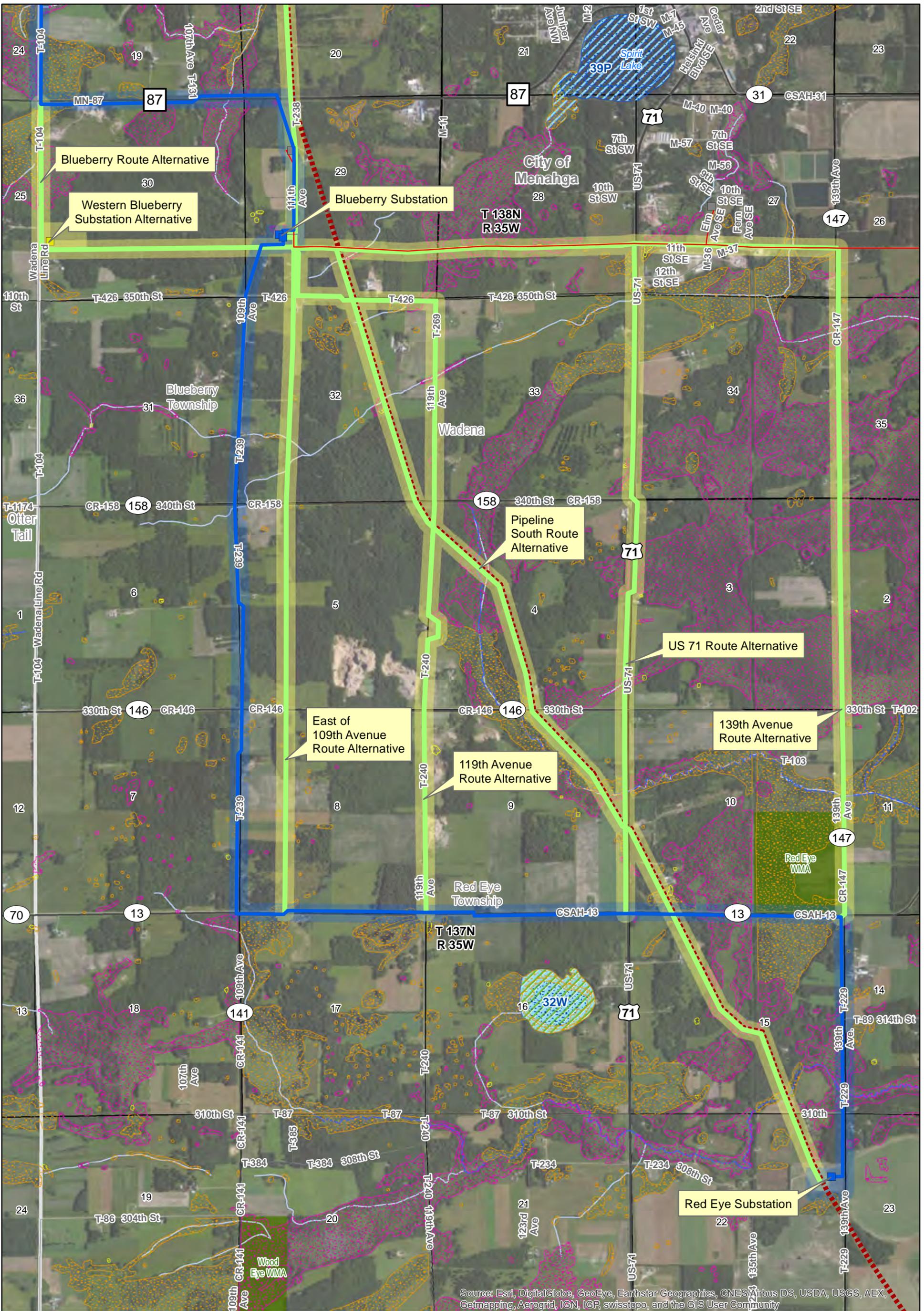
Updated: 4/29/2015



**Menahga Area
115 kV Project**

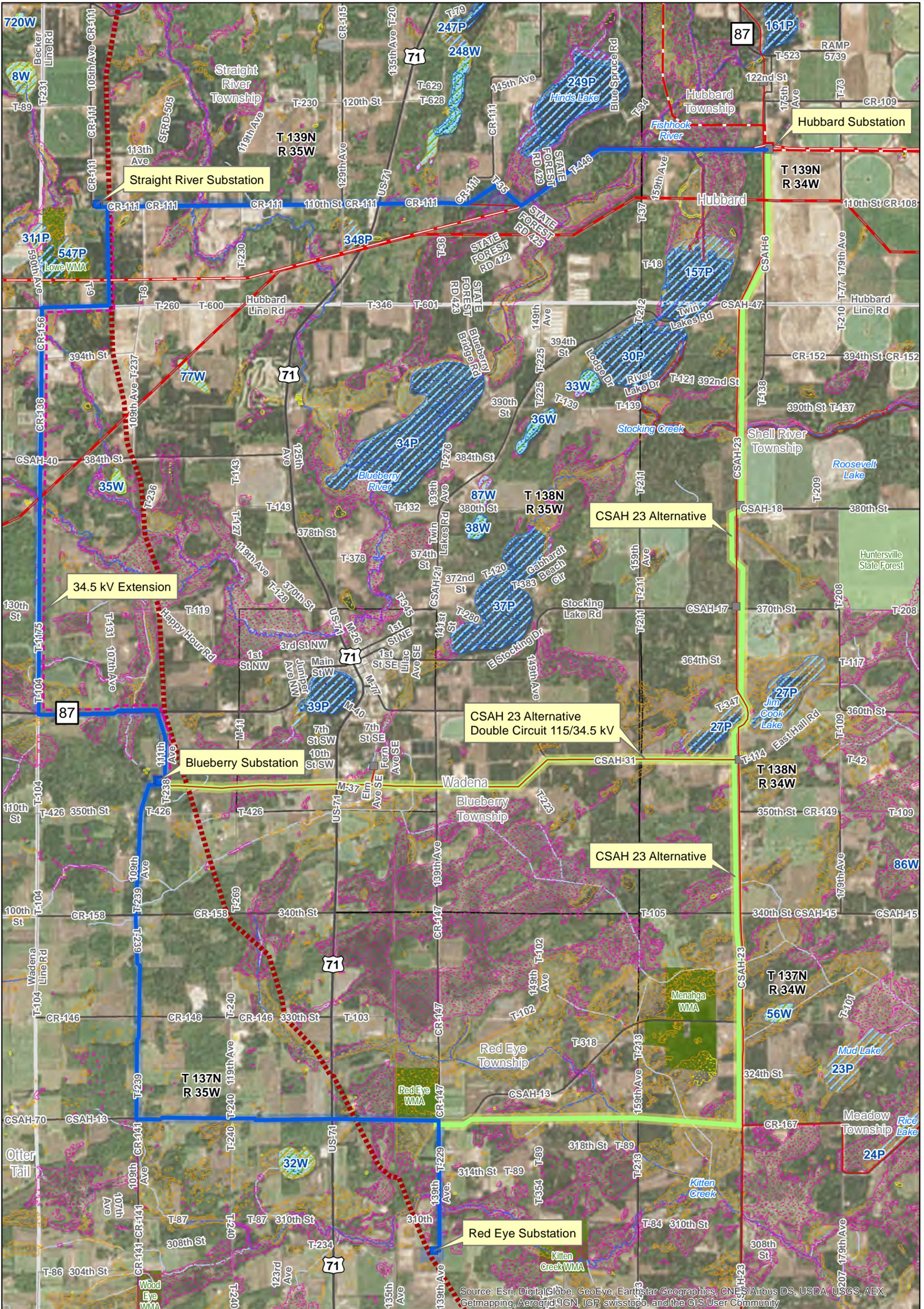
**Alternatives Proposed
During Scoping**

**Map Sheet 1 of 3
Northern Project Area**



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

<p>Applicants</p> <ul style="list-style-type: none"> Proposed Alignment Proposed Route Proposed Substation <p>Alternatives</p> <ul style="list-style-type: none"> Alternative Alignment Alternative Route Alternative Substation 	<p>Existing</p> <ul style="list-style-type: none"> 34.5 kV Transmission Line 230 kV Transmission Line 250 kV Transmission Line Substation Pipeline 	<p>MN Public Waters Inventory (PWI)</p> <ul style="list-style-type: none"> Public Water Wetland Public Water Basin MN Public Watercourse <p>NWI Wetlands</p> <ul style="list-style-type: none"> Freshwater Emergent Wetland Freshwater Forested/ Freshwater Pond Lake MN Wildlife Management Areas 	<p>Data Sources Vary Between MNDOT, MNDNR, MNGEO and Great River Energy Aerial Image from ESRI Web service</p> <p>Map Projection: WGS 1984 Web Mercator</p> <p>0 2,000 Feet</p> <p>Updated: 4/29/2015</p>	<p>Menahga Area 115 kV Project</p> <p>Alternatives Proposed During Scoping Map Sheet 2 of 3 Southern Project Area</p>
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

<p>Applicants</p> <ul style="list-style-type: none"> Proposed Alignment Proposed Route Proposed Substation <p>Alternatives</p> <ul style="list-style-type: none"> Alternative Alignment 34.5 kV Extension Alternative Route 	<p>Existing</p> <ul style="list-style-type: none"> 230 kV Transmission Line 250 kV Transmission Line 115-kV Transmission Line 34.5 kV Transmission Line Substation Pipeline 	<p>MN Public Waters Inventory (PWI)</p> <ul style="list-style-type: none"> Public Water Wetland Public Water Basin MN Public Watercourse <p>NWI Wetlands</p> <ul style="list-style-type: none"> Freshwater Emergent Wetland Freshwater Forested/ Freshwater Pond Lake Riverine 	<p>Wildlife Management Areas</p>	<p>Data Sources Vary Between MNDOT, MNDNR, MNGEO and Great River Energy Aerial Image from ESRI Web service</p> <p>Map Projection: WGS 1984 Web Mercator</p> <p>0 4,000 Feet</p> <p>Updated: 4/29/2015</p>	<p>Menahga Area 115 kV Project</p> <p>Alternatives Proposed During Scoping</p> <p>Map Sheet 3 of 3</p> <p>Eastern Project Area</p>
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Southern Straight River Substation Alternative

Great River Energy is opposed to the suggested alternative location for the Straight River Substation for the following reasons:

- A 230/115 kV substation is considered a large regional substation, and such substations should be spaced appropriately to allow nearby transmission to be integrated into those sites. In metro areas large regional substations are typically 15-20 miles apart, in rural areas they are typically 20-30 miles apart. This alternative location puts two regional substations (this proposed substation and the existing Hubbard Substation) in close proximity to one another (approximately 8 miles apart), which is undesirable.
- This scenario would not provide the reliability enhancements to the 34.5 kV grid that the proposed Project provides.
- Although Great River Energy has a new 230/115 kV substation in its long term plan in this general area (10+ years out, farther west in the Detroit Lakes/Frazee area, approximately 25 miles from the Hubbard Substation), this source is not needed now and building the alternative 230/115 kV substation in an undesirable location (that would not meet our future needs) is not cost-effective.
- Great River Energy has no spare 230/115 kV transformers, and would therefore need to purchase two (one plus a spare) to avoid a lengthy outage if there were a transformer failure. The cost of a 230/115 kV substation with an extra transformer would be over 10 million dollars, compared to less than 3 million for the proposed Straight River Substation and associated facilities.