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MPUC E-015/TL-14-21

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Request of Minnesota Power for a Route Permit for the Great Northern Transmission Line Project

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OAH 65-2500-31637
MPUC E-015/TL-14-21

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Request of Minnesota Power for a Route Permit for the Great Northern Transmission Line Project	**AMENDED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION**

On April 15, 2014, Minnesota Power filed a Petition for a Route Permit (Application) for its proposed Great Northern Transmission Line with the Minnesota Public Utilities Commission (Commission).

By Order issued July 2, 2014, the Commission referred this matter to the Office of Administrative Hearings for public hearings and a contested case proceeding.[1]

Combined public and evidentiary hearings were held on August 5, 6, 12, and 13, 2015, in six communities within the project area: Roseau, Baudette, Littlefork, Kelliher, Bigfork, and Grand Rapids, Minnesota.

David Moeller, Senior Attorney for Minnesota Power, and Eric F. Swanson, Winthrop & Weinstine, P.A., appeared on behalf of Minnesota Power (Minnesota Power, Company, or Applicant).

Linda Jensen, Assistant Attorney General, and Bill Storm, Project Manager, appeared on behalf of the Department of Commerce -- Energy Environmental Review and Analysis Division (DOC-EERA).

Michael Kaluzniak, Senior Facilities Planner for the Commission, and Tracy Smetana, the Commission's Public Advisor, were also present at the hearings.

The hearing record closed on December 30, 2015.

STATEMENT OF THE ISSUES

1. Should Minnesota Power's Route Permit Application for the Great Northern Transmission Line be granted?

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[1] ORDER FINDING APPLICATION COMPLETE AND REFERRING MATTER TO THE OFFICE OF ADMINISTRATIVE HEARINGS (July 2, 2014) (eDocket No. 20147-101165-01).

2. If so, which of the proposed route alternatives, route variations, or alignment modifications best meet the route selection criteria set forth in Minn. Stat. § 216E.03, subd. 7 (2014), and Minn. R. 7850.4100 (2015)?

3. If so, what conditions or provisions should be included in the Route Permit?

4. Is the Final Environmental Impact Statement (FEIS) adequate to assist the Commission in its consideration of the issues presented pursuant to Minn. R. 7850.2500, subp. 10 (2015)?

SUMMARY OF RECOMMENDATIONS

The Administrative Law Judge concludes that Minnesota Power has satisfied the criteria set forth in Minnesota law and rule for the issuance of a Route Permit. The Administrative Law Judge further concludes that the Proposed International Border Crossing and the Blue Route, combined with the Effie Variation, the East Bear Lake Variation, and related alignment modifications best meet the legal criteria for a route in this proceeding. Accordingly, the Administrative Law Judge recommends that the Commission issue a Route Permit to Minnesota Power for a route which follows the alignment and conditions detailed below.

Based upon the information in the Route Permit Application; the FEIS prepared by the DOC-EERA and United States Department of Energy (DOE); the information presented during the public hearings; the testimony and evidence presented during the evidentiary hearings; the written comments received; the exhibits entered into the hearing record; and all other evidence in the record, the Administrative Law Judge makes the following:

FINDINGS OF FACT

I. APPLICANT, PARTIES, AND PROPOSED PROJECT DESCRIPTION

1. The Applicant is Minnesota Power, an operating division of ALLETE, Inc.[2] Minnesota Power provides retail electric service in the state of Minnesota and is subject to the jurisdiction of the Commission.[3] Applicant is also a Transmission Owner for Midcontinent Independent System Operator (MISO), subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC).[4]

2. The DOC-EERA is not a formal party to this proceeding but, in cooperation with the DOE, conducted a technical review of the project and prepared the Environmental Impact Statement (EIS) required by law.

3. No other party or person petitioned to intervene in this proceeding prior to the April 15, 2015, intervention deadline.[5]

A. Facilities, Estimated Costs and Ownership

4. The proposed Project includes an approximately 220 mile long, 500 kV overhead, single-circuit, alternating current (AC) transmission line spanning from the United States-Canada border to Grand Rapids, Minnesota (Project).[6] The GNTL would cross the international border from Canada into the United States in Roseau County, Minnesota, and would connect to a proposed Iron Range 500 kV Substation located adjacent to Minnesota Power's existing Blackberry Substation near Grand Rapids, Minnesota.[7]

5. The proposed 500 kV Line will be part of a new 500 kV international transmission interconnection between Manitoba, Canada and the United States. Manitoba Hydro will be constructing the Canadian portion of this new international interconnection. The intended purpose of the line is to provide delivery of, and access to, power generated by Manitoba Hydro from hydroelectric stations in Manitoba, Canada.[8]

6. This proceeding involves only the portion of the transmission line to be located in Minnesota. Because the line includes an international border crossing,

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[2] Exhibit (Ex.) 2 at 1-3 (Application). For access to exhibits, *see* MASTER EXHIBIT LIST (Dec. 18, 2015) (eDocket No. 201512-116635-01).
[3] Ex. 2 at 3-2 (Application).
[4] Ex. 2 at 1-4 (Application).
[5] On August 12, 2015, Residents and Ratepayers Against Not-so-Great Northern Transmission (RRANT) filed a Petition to Intervene Out-of-Time. *See* MOTION FOR LEAVE TO INTERVENE OUT-OF-TIME, EXTENSION OF INTERVENTION DEADLINE, AND SUPPLEMENT EIS (Aug. 12, 2015) (eDocket No. 20158-113-189-01). RRANT's untimely Petition to Intervene was denied. *See* ORDER DENYING RRANT MOTION TO INTERVENE, DENYING MOTION TO EXTEND INTERVENTION DEADLINE, AND DENYING MOTION TO SUPPLEMENT ENVIRONMENTAL IMPACT STATEMENT (Sept. 2, 2015) (eDocket No. 20159-113734-01).
[6] Ex. 2 at 5-1 to 5-3 (Application); Ex. 119 at S-1 (Final Environmental Impact Statement).
[7] Ex. 119 at S-1 (Final Environmental Impact Statement).
[8] Ex. 2 at 1-1 (Application).

additional permitting is required by the United States federal government, which has proceeded contemporaneously with this case as described more fully below.

7. Minnesota Power's Application for a Route Permit sets forth two proposed routes for a transmission line in Minnesota: a Blue Route and an Orange Route, each of which begin at the same United States-Canada border crossing location near Roseau, Minnesota, and continue south to Grand Rapids, Minnesota.[9]

8. In addition to the transmission line, the proposed Project includes construction of a new Iron Range 500 kV Substation near the existing 230kV/115 kV Blackberry Substation, and a new 500 kV series compensation station to be located near the midpoint of the combined Manitoba and United States transmission line.[10] The proposed Project will also include regeneration stations, permanent access roads, temporary access roads, laydown areas, and fly-in sites.[11]

9. Minnesota Power anticipates using three-conductor bundle 1192.5 kcmil aluminum steel conductor reinforced bunting with 18-inch sub-spacing as the phase conductor for the proposed Project. This conductor is the same as that used on the existing Dorsey-Chisago 500 kV transmission line. Final conductor selection for the Project will be based on a conductor optimization study.[12]

10. Once completed, the proposed Project is anticipated to provide approximately 883 megawatts (MW) of transfer capability.[13]

11. Minnesota Power continues to evaluate several structure types and configurations of towers that will be used for the line, including a self-supporting lattice tower, a lattice guyed V structure, and a lattice guyed delta structure. The Company currently estimates approximately four to five structures per mile of line, with the type of structure in any given section of line dependent on land type and land use.[14]

12. In its Application, Minnesota Power provided an initial range of estimated costs for the proposed Project of between $495.5 million and $647.7 million, based on the Applicant's proposed routes and segment options.[15]

13. In July of 2014, a MISO-sponsored facility study report concluded that the 500 kV Series Compensation Station originally budgeted at the expanded Blackberry Substation should now be a separate facility located at the midpoint of the 500 kV transmission line. Incorporating that change and accounting for property taxes that will

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[9] Ex. 2 at 5-1 to 5-2 (Application).
[10] Ex. 2 at 1-1, 5-7, 5-8 (Application); *see also* Ex. 119, Appendix S (Final Environmental Impact Statement).
[11] Ex. 119 at S-1 (Final Environmental Impact Statement).
[12] Ex. 2 at 5-5 (Application).
[13] *In the Matter of the Request of Minnesota Power for a Certificate of Need for the Great Norther Transmission Line,* PUC Docket No. E-015/CN-12-1163, ORDER GRANTING CERTIFICATE OF NEED WITH CONDITIONS at 12 (June 30, 2015) (CN-12-1163 ORDER).
[14] Ex. 2 at 5-5 (Application).
[15] Ex. 2 at 5-16 (Application).

be assessed against proposed Project assets before the in-service date of June 1, 2020, the Company revised its cost estimate to between $557.9 million and $710.1 million in 2013 dollars. That remains the Company's current capital cost estimate.[16]

14. If the Commission approves a final route different than that proposed by Minnesota Power, this cost estimate may change.[17]

15. Manitoba Hydro will construct and have sole ownership of the Canadian portion of this new interconnection. For the Minnesota portion of this interconnection, Manitoba Ltd. will own 49 percent of the proposed Project and Minnesota Power will own 51 percent of the proposed Project.[18]

16. Under its agreements with Manitoba Hydro, Minnesota Power will only be responsible for 28.3 percent of the Project's capital construction costs and only 33 percent of the operation and maintenance costs of the facilities.[19]

17. Subject to receipt of all applicable permits and compliance requirements, construction is expected to begin by 2017 and is scheduled to be completed by 2020.[20]

18. The Company anticipates that the proposed Project will be located on new right-of-way (ROW) that is approximately 200 feet wide. A wider ROW may be required for longer spans of the proposed Project, at angle and corner structures, for guyed structures, or where special design requirements are dictated by topography.[21]

B. Purpose and Need

19. According to Minnesota Power, the purpose and need for the Project is to provide the Company's customers and the region with clean, emission-free energy that will: (1) help meet the region's growing energy demands; (2) advance the Company's *EnergyForward* strategy of increasing its generation diversity and renewable portfolio; (3) strengthen system reliability; and (4) fulfill the Company's obligations under Power Purchase Agreements with Manitoba Hydro.[22]

20. Minnesota Power asserts that to meet its stated purpose the Company must have the Project in service by June 1, 2020.[23]

21. Minnesota Statutes section 216B.243 (2014) dictates that a certificate of need is required for a "large energy facility," as that term is defined in Minn. Stat. § 216B.2421 (2014). A large energy facility includes "any high-voltage transmission line

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[16] *See* Tr. Vol. 1 at 36.
[17] Ex. 2 at 5-16 (Application).
[18] CN-12-1163 ORDER at 3.
[19] CN-12-1163 ORDER at 2.
[20] Ex. 2 at 5-16 (Application).
[21] Ex. 2 at 5-6 (Application).
[22] Ex. 2 at 2-1 (Application)
[23] Ex. 36 at 12 (Atkinson Direct).

with a capacity of 200 kilovolts or more and greater than 1,500 feet in length."[24] As part of the certificate of need proceeding, the Commission must also determine whether there is a need for a transmission line, and establish the size, type, and required end points of the proposed Project.

22. Minnesota Power filed an Application for a Certificate of Need for the proposed Project with the Commission on October 22, 2013. Following a formal contested case hearing, the Administrative Law Judge issued a report on March 31, 2015, which concluded that the Company sufficiently satisfied the certificate of need requirements and recommended that the Commission grant a certificate of need to Minnesota Power to construct the proposed Project and associated facilities, subject to certain conditions.[25] The Commission granted the Certificate of Need on May 15, 2015.[26]

C. Routes and Alternatives

23. The proposed Project seeks to be located in Beltrami, Itasca, Koochiching, Lake of the Woods, and Roseau Counties, with the exact locations depending on the Commission's final routing decision.

24. Minnesota Power proposes two route alternatives, referred to as the Blue Route and the Orange Route (collectively referred to as the Proposed Routes).[27] The Blue Route is fully depicted on maps included as Exhibits 4-7, Sheets 1-54. The Orange Route is fully depicted on maps included as Exhibits 4 and 6-9, Sheets 1-15 and 41-77. The alignment of the Blue Route and the Orange Route are identical for a significant portion of both routes (the joint alignment portion is collectively referred to as the Blue/Orange Route).

25. Minnesota Power also proposed two "segment options" as alternatives to a portion of each of its Proposed Routes. The C2 Segment Option is an alternative to a portion of the Blue Route identified as "C1." The C2 Segment Option is fully depicted on maps included as Exhibits 9 and 10, Sheets 78-87. The J2 Segment Option is an alternative to a portion of the Orange Route identified as "J1." The J2 Segment Option is fully depicted on maps included as Exhibit 10, Sheets 87-94.

26. The Proposed Routes vary from 1,000 to 3,000 feet wide in order to provide flexibility during detailed design, in part to try to accommodate landowner's preferences once the route is selected by the Commission.[28] Minnesota Power's requested route widths and anticipated alignments are shown on the detailed maps provided in Appendix A of the Route Permit Application.

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[24] Minn. Stat. § 216B.2421, subd. 2 (2014).
[25] CN-12-1163 ORDER at 25.
[26] *Id.*
[27] Ex. 2 at ES-1 (Application).
[28] Ex. 2 at ES-4 (Application).

27. During the environmental scoping process there were 33 alternative route segments (including five alternative border crossings) and nine alignment modifications proposed for consideration in the EIS.[29] The alternative route segments (i.e., "variations") and the alignment modifications were put forth to address concerns specific to discrete sections of the Proposed Routes and seek to avoid those areas of concern.[30] No additional end-to-end routes were proposed for analysis during the scoping process.

28. The Scoping Decision identified the routes, alternatives, and alignment modifications that were to be evaluated in the EIS; these included the Applicant's proposed Blue and Orange Routes, the Proposed Border Crossing, four new border crossing options, 22 alternative route segments or variations, and nine alignment modifications.[31]

29. For the purposes of environmental review, the DOE and DOC-EERA divided the proposed Project into three geographic sections: the West Section, the Central Section, and the East Section. Within each section, multiple "variation areas" were developed to address local issues.[32]

30. The variation areas are smaller geographic areas that allow evaluation and comparison of local issues, such as wildlife management areas or co-location of transmission lines, across alternatives. Each variation area includes the Applicant's Proposed Routes and local alternative route segments or "variations." The EIS evaluated the local issues within each variation area, progressing from west to east across each section.[33]

31. The routing alternatives within a variation area are designed to avoid specific local issues. These variations were developed from alternative route segments identified during the scoping process. The FEIS evaluated the potential environmental impacts and presented the results for the variation(s) and the proposed route(s) within each variation area.[34]

32. The connector segments, or "hops," connect the end of one variation to the beginning of another variation. These hops generally connect variations from west to east from one variation area to a different variation area. The EIS uses the hops to develop complete route alternatives and to prevent isolating route segments and variations.[35]

33. Hop 1 is located in the southeastern portion of the Cedar Bend WMA Variation Area (FEIS Map 4-5) and the northwestern corner of the Beltrami North Central

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[29] Ex. 119, Vol. 1, Pt. 2 of 14, at 56 (Final Environmental Impact Statement).
[30] Ex. 119, Vol. 1, Pt. 2 of 14, at 56-57 (Final Environmental Impact Statement).
[31] Ex. 119, Appendix D (Final Environmental Impact Statement).
[32] Ex. 119, Vol. 1, Pt. 2 of 14, at 56, 67, Map 4-1 (Final Environmental Impact Statement).
[33] Ex. 119, Vol. 1, Pt. 2 of 14, at 56 (Final Environmental Impact Statement).
[34] Ex. 119, Vol. 1, Pt. 2 of 14, at 56 (Final Environmental Impact Statement).
[35] Ex. 119, Vol. 1, Pt. 2 of 14, at 57 (Final Environmental Impact Statement).

Variation Area (FEIS Map 4-7). The length of Hop 1 is approximately 0.7 miles.[36] Hop 2 is located in the southeastern portion of the Cedar Bend WMA Variation Area (FEIS Map 4-5) and the northwestern corner of the Beltrami North Central Variation Area (FEIS Map 4-7). The length of Hop 2 is approximately one mile.[37] Hop 3 is located in the southeastern portion of the Cedar Bend WMA Variation Area (FEIS Map 4-5) and the northwestern corner of the Beltrami North Central Variation Area (FEIS Map 4-7). The length of Hop 3 is approximately 1.2 miles.[38] Hop 4 is located in the eastern portion of the Beltrami North Variation Area (FEIS Map 4-6) and the northwestern corner of the Beltrami North Central Variation Area (FEIS Map 4-7). The length of Hop 4 is approximately one mile.[39] Hop 5 is located in the southwestern portion of the Beltrami North Central Variation Area (FEIS Map 4-7). The length of Hop 5 is approximately 3.5 miles.[40]

34. Alignment modifications are minor adjustments of the proposed transmission line's anticipated alignment or ROW within a proposed route or alternative. During the scoping process, commenters developed and proposed these alignment modifications to avoid an identified issue of concern (e.g., sensitive lands, residences, airstrips, etc.).[41]

35. There are five variation areas within the West Section: the Border Crossing Variation Area; the Roseau Lake WMA Variation Area; the Cedar Bend WMA Variation Area; the Beltrami North Variation Area; and the Beltrami North Central Variation Area. In addition, there are five connector segments or hops that connect variations between the Cedar Bend WMA, Beltrami North, and Beltrami North Central Variation Areas. Each variation area contains between two to six alternative route variations.[42]

36. There are eight variation areas within the Central Section: the Pine Island Variation Area (comprising the entire Central Section); the Beltrami South Central Variation Area; the Beltrami South Variation Area; the North Black River Variation Area; the C2 Variation Area; the J2 Variation Area; the Northome Variation Area (located within the J2 Variation Area); and the Cutfoot Variation Area (located within the J2 Variation Area). Each variation area contains between two and four alternative route segments. Additionally, there are four alignment modifications within the Central Section: the Silver Creek WMA Alignment Modification; the Airstrip Alignment Modification; the Mizpah Alignment Modification; and the Gravel Pit Alignment Modification.[43]

37. There are five variation areas within the East Section: the Effie Variation Area; the East Bear Lake Variation Area; the Balsam Variation Area; the Dead Man's Pond Variation Area; and the Blackberry Variation Area. Each variation area contains

[36] Ex. 119, Vol. 1, Pt. 13 of 14, at 657 (Final Environmental Impact Statement).
[37] Ex. 119, Vol. 1, Pt. 13 of 14, at 657 (Final Environmental Impact Statement).
[38] Ex. 119, Vol. 1, Pt. 13 of 14, at 657 (Final Environmental Impact Statement).
[39] Ex. 119, Vol. 1, Pt. 13 of 14, at 657 (Final Environmental Impact Statement).
[40] Ex. 119, Vol. 1, Pt. 13 of 14, at 657 (Final Environmental Impact Statement).
[41] Ex. 119, Vol. 1, Pt. 2 of 14, at 57 (Final Environmental Impact Statement).
[42] Ex. 119, Vol. 1, Pt. 2 of 14, at 57-61 (Final Environmental Impact Statement).
[43] Ex. 119, Vol. 1, Pt. 2 of 14, at 61-64 (Final Environmental Impact Statement).

between two and five alternative route segments (i.e., variations). Additionally, there are five alignment modifications within the East Section: the Bass Lake Alignment Modification; the Wilson Lake Alignment Modification; the Grass Lake Alignment Modification; the Dead Man's Pond Alignment Modification; and the Trout Lake Alignment Modification.[44]

II. PROCEDURAL SUMMARY

A. Application and Initial Notice Requirements

38. Minnesota law and rules set forth specific notice requirements that must be met when a party applies for a route permit for the construction of a high voltage transmission line (HVTL). These requirements are set forth in Minn. Stat. § 216E.03 (2014) and Minn. R. 7850.2100, .2300, .2500, and .2600 (2015).

39. Minnesota Statutes section 216E.03, subdivision 3a (2014), provides that at least 90 days before filing a route permit application with the Commission an applicant must provide notice to each local unit of government within which a route may be proposed.[45] The notice must describe the proposed project and the opportunity for a pre-application consultation meeting with local units of government.[46]

40. Minnesota Power filed a Petition for a Route Permit for its Great Northern Transmission Line (GNTL) Project on April 15, 2014.[47]

41. On December 16, 2014, at least 90 days before filing the Application, Minnesota Power served a notice of the Project on the following local units of government: Balsam Township, Barto Township, Beltrami County, Bigfork Township, Itasca County, Kittson County, Koochiching County, Lake of the Woods County, Roseau County, Caribou Township, Carpenter Township, Cedarbend Township, City of Effie, City of Taconite, Dieter Township, Falun Township, Greenway Township, Iron Range Township, Lake Township, Lawrence Township, Malung Township, Moose Township, Nashwauk Township, Pohlitz Township, Polonia Township, Ross Township, Skagen Township, Stafford Township, Stokes Township, Trout Lake Township, and Waskish Township.[48]

42. Pursuant to Minn. Stat. § 216E.03 and Minn. R. 7850.2100, within 15 days after submitting a route permit application an applicant must:

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[44] Ex. 119, Vol. 1, Pt. 2 of 14, at 64-66 (Final Environmental Impact Statement).
[45] Minn. Stat. § 216E.03, subd. 3a (2014).
[46] *Id.*
[47] *See* Exs. 2-23 (Application and Appendices).
[48] Ex. 75 (Affidavit of Mailing). Exhibit 75 cites the incorrect statutory authority for the notice. The affiant, Danny Cosgrove, cited Minn. Stat. § 216E.03, subd. 3b (2014), when the notice was actually being served pursuant to subdivision 3a, not subdivision 3b. *See* FILING LETTER (Dec. 3, 2015) (eDocket No. 201512-116156-01).

- Publish notice of the application in a legal newspaper of general circulation in each county in which routes are proposed;[49]

- Send a copy of the application by certified mail to any regional development commission, county, incorporated municipality, and town in which any part of the site or route is proposed;[50]

- Send a notice of the submission of the application and a description of the proposed project to each owner whose property is along any of the proposed routes for the transmission line;[51] and

- Send a notice of the submission of the application and a description of the proposed project to all persons listed on the Commission's "general list."[52]

43. To ensure that the required notices were served, the law requires that, within 30 days after serving the notices, the applicant submit documentation to the Commission evidencing that all notices required by Minn. R. 7850.2100 have been completed.[53]

44. In compliance with the requirements set forth in Minn. Stat. § 216E.03 and Minn. R. 7850.2100, between April 19 and April 29, 2014, Minnesota Power published a notice of its Application in legal newspapers of general circulation in each county along the proposed routes.[54]

45. In addition, on April 18, 2014, the Applicant requested from the Commission the mailing list for all individuals on the Commission's "general list."[55] The general list contained 90 names and addresses.[56] On April 30, 2014, the Applicant sent a letter to the Commission's "general list" generally advising them of the proposed Project.[57]

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[49] Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 4.
[50] Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2.
[51] Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2.
[52] Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2. Under Minn. R. 7850.2100, when a route permit is accepted, the Commission must maintain two address lists for the project: (1) a general list of persons who want to be notified of the acceptance of all applications for site permits or route permits (general list), and (2) a project contact list which contains the names of persons who want to receive notices regarding the particular project at issue (project contact list). The lists are used by the Commission, the DOC-EERA, and the applicant to comply with notice requirements set forth in statute and rule. There is no requirement in statute or administrative rule that the lists maintained by the Commission contain the names of all landowners potentially affected by a potential route alternative or alignment modification.
[53] Minn. R. 7850.2100, subp. 5.
[54] Ex. 25 (Affidavits of Publication).
[55] SUPPLEMENTAL AFFIDAVIT OF CHRISTINA ROLFES (Dec. 3, 2015) (eDocket No. 201512-116156-03).
[56] *Id.*
[57] *Id.*

46. On April 30, 2014, the Applicant also sent a copy of the letter generally describing the proposed Project to a list of approximately 793 individuals and entities.[58] It is unclear in the record if the mailing list for the general letter included all landowners whose property is along any of the proposed routes for the Project.[59]

47. Minnesota Statutes section 216E.03, subdivision 4, requires that, within 15 days of filing an application for a route permit, an applicant send a copy of the application by certified mail to any regional development commission, county, incorporated municipality, and town in which any part of the route or any alternatives is proposed. Minnesota Rule 7850.2100, subp. 2B, also requires that such notice be sent to the same governmental entities, albeit not by certified mail.

48. Minnesota Power's representative attests that on April 30, 2014, she sent a general letter describing the proposed Project to the following communities: Cedarbend Township, Dieter Township, Lake Township, Pohlitz Township, Northwest RDC, Bigfork Township, Carpenter Township, Waskish Township, City of Effie, Balsam Township, Greenway Township, Iron Range Township, Lawrence Township, Nashwauk Township, Trout Lake Township, and City of Taconite.[60] This letter was not sent by certified mail and did not include a copy of the Application.[61]

49. Minnesota Power's representatives sent a copy of the same general letter describing the proposed Project to Kay Mack, Beltrami County Administrator; Trish Klein, Koochiching County Administrator; Teresa Briggs, Lake of the Woods County Administrator; Susan Ney and Pam Grand, Roseau County Recorder's Office; Maurice and Bev Talonen on behalf of Trout Lake Township and the Arrowhead Regional Development Commission; Patricia Henderson on behalf of the Headwaters Regional Development Commission; the Roseau River Watershed District; the City of Northome; the International Falls Economic Development Commission; the City of Effie; Itasca County; the Iron Range Area Council; School District 319; the Town of Balsam; and the Town of Iron Range.[62] Again, the letter was not sent by certified mail and did not include a copy of the Application.[63]

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[58] SUPPLEMENTAL AFFIDAVIT OF DANNY COSGROVE (Dec. 3, 2015) (eDocket 201512-116156-05). The letter appears to substantially comply with Minn. R. 7850.2100, subp. 3 (2015), although it references a "handout" that was not included with the Affidavit of Mailing. Presumably, the handout contained the maps required by Minn. R. 7850.2100, subp. 3A (2015).

[59] An affidavit merely stating that a letter regarding the Project was mailed to "landowners" is legally insufficient. The affidavit of service must provide a copy of what was served and who was served to prove that adequate service actually occurred. *See e.g.,* Ex. 26 (Affidavit of Mailing).

[60] SUPPLEMENTAL AFFIDAVIT OF CHRISTINA ROLFES (Dec. 3, 2015) (eDocket No. 201512-116156-04). The supplemental affidavit of Christina Rolfes is ambiguous. The affidavit does not expressly state that Ms. Rolfes mailed the project letter to the list of communities in the attachment. Instead, the affidavit states that "[c]ertain regional development commissions, counties, incorporated municipalities, and towns receiving this notice are listed on Attachment 2 to this affidavit." *Id.* Regardless, mailing a letter to communities does not satisfy the legal requirements of service set forth in Minn. Stat. § 216E.03, subd. 4 (2014), and Minn. R. 7850.2100, subp. 2B (2015).

[61] SUPPLEMENTAL AFFIDAVIT OF CHRISTINA ROLFES (Dec. 3, 2015) (eDocket No. 201512-116156-04).

[62] SUPPLEMENTAL AFFIDAVIT OF DANNY COSGROVE (Dec. 3, 2015) (eDocket 201512-116156-05).

[63] *Id.*

50. It is unclear in the record whether notice of the Project was sent to all regional development commissions, counties, incorporated municipalities, and townships in the Project area, but the record indicates that many of these entities were served with a general letter describing the Project.

51. On April 18, 2014, the Commission issued a notice seeking comments on whether Minnesota Power's Application was complete and whether an advisory task force should be appointed for the Project.[64]

52. The DOC-EERA filed comments on May 16, 2014, recommending the Commission accept the Application as substantially complete and authorizing the DOC-EERA to establish three advisory task forces.

B. Environmental Review Scoping Process

53. On June 20, 2014, the Commission and the DOC-EERA issued a Notice of Public Information and EIS Scoping Meetings, announcing eight public meetings to be held July 16, 2014, through July 24, 2014, in Roseau, Baudette, Littlefork, International Falls, Kelliher, Bigfork and Grand Rapids, Minnesota.[65] In conformity with Minn. R. 7850.2300, subp. 2 (2015), Minnesota Power published the Notice of the EIS Scoping Meetings in eleven newspapers of general circulation in the areas in which the Project would be located.[66] The notice ran in the newspapers on various dates between June 25 and July 3, 2014.[67]

54. In addition to publication, the Commission mailed the Notice of Public Information and EIS Scoping Meetings to the project contact list maintained by the Commission.[68]

55. On July 2, 2014, the Commission issued an Order Finding Application Complete and Referring Matter to the Office of Administrative Hearings.[69] The Order accepted the Application as complete, adopted the advisory task force structure recommended by the DOC-EERA, and referred the case to the Office of Administrative

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[64] NOTICE OF COMMENT PERIOD (April 18, 2014) (eDocket No. 20144-98464-01).
[65] NOTICE OF PUBLIC INFORMATION AND ENVIRONMENTAL IMPACT STATEMENT SCOPING MEETING (June 20, 2014) (eDocket No. 20146-100639-01). Minnesota Rule Part 7850.2300, subpart 1 (2015), requires that the Commission hold a public meeting within 60 days after acceptance of a route permit application. In this case, the Commission did not hold a public meeting within 60 days after acceptance of the Application.
[66] Ex. 30 (Affidavits of Publication).
[67] *Id.*
[68] NOTICE OF PUBLIC INFORMATION AND ENVIRONMENTAL IMPACT STATEMENT SCOPING MEETING (June 20, 2014) (eDocket No. 20146-100639-01); CERTIFICATE OF SERVICE AND SERVICE LIST FOR NOTICE (June 20, 2014) (eDocket No. 20146-100639-02).
[69] ORDER FINDING APPLICATION COMPLETE AND REFERRING MATTER TO THE OFFICE OF ADMINISTRATIVE HEARINGS (July 2, 2014) (eDocket No. 20147-101165-01).

Hearings for public and evidentiary hearings to be conducted by an Administrative Law Judge.[70]

56. Also on July 2, 2014, the DOC-EERA issued a Draft Environmental Impact Statement Scoping Document (Scoping Document).[71] The Scoping Document set forth a description of the Project; outlined the regulatory processes and procedures applicable to route permit applications; explained the scoping process (i.e., the development of the scope of the environmental review that would occur for the Project); identified an outline for the EIS to be prepared by the DOC-EERA; advised of the eight public scoping meetings to occur throughout the Project area; and provided that written comments related to the scoping decision would be accepted until August 15, 2014.[72]

57. From July 16, 2014, through July 24, 2014, the DOC-EERA and the Commission convened public information meetings soliciting input on the scope of the environmental review on the Project at the locations noticed.[73]

58. The DOC-EERA received substantial comments on the scope of the environmental review for the proposed Project, both in oral and written form.[74] A total of 46 people gave oral comments at the scoping meetings.[75] The DOC-EERA and the DOE received 122 additional written comments from individuals, governmental agencies, and non-governmental organizations.[76]

59. In addition to soliciting public comment at the scoping meetings, on July 31, 2014, the Commission sent a letter to various state agencies requesting their participation in the development of the record, the environmental review, and the public hearings for the Project.[77]

60. The DOC-EERA received substantive comments related to scoping and environmental issues from both federal and state agencies, including: the Minnesota Department of Natural Resources (MNDNR), Minnesota Department of Transportation (MnDOT), the United States Environmental Protection Agency (EPA), and the United States Fish and Wildlife Service (USFWS).[78]

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[70] ORDER FINDING APPLICATION COMPLETE AND REFERRING MATTER TO THE OFFICE OF ADMINISTRATIVE HEARINGS (July 2, 2014) (eDocket No. 20147-101165-01).
[71] Ex. 102 (Environmental Impact Statement Draft Scoping Document).
[72] *Id.*
[73] *Id.*
[74] Ex. 103 (Oral Public Comments Received on the Scope of the Environmental Assessment); Ex. 105 (Written Public Comments Received on the Scope of the Environmental Assessment).
[75] Ex. 103 (Oral Public Comments Received on the Scope of the Environmental Assessment).
[76] Ex. 105 (Written Public Comments Received on the Scope of the Environmental Assessment).
[77] Ex. 101 (Notice of Public Information and Scoping Meeting).
[78] JUNE 19, 2014 AGENDA MEETING (Aug. 14, 2014) (eDocket No. 20148-102265-01); Comment by MnDOT (Aug. 10, 2015) (eDocket No. 20158-113130-01); Comment by MNDNR (Nov. 26, 2015) (eDocket No. 201411-105005-01); Comment by MNDNR (Sept. 1, 2015) (eDocket No. 20159-113683-03); Comment by MNDNR (Aug. 7, 2015) (eDocket No. 20158-113095-03); Comment by MNDNR (Aug. 7, 2015) (eDocket No. 20158-113095-02); Comment by MNDNR (Aug 7, 2015) (eDocket No. 20158-113095-01); Comment

C. Advisory Task Force and Work Group

61. On August 8, 2014, the DOC-EERA filed a letter detailing its efforts to create an advisory task force and stating that low response to solicitations prevented its creation.[79] As a result, the DOC-EERA recommended not pursuing the advisory task force directed by the Commission.[80]

62. To confirm the DOC-EERA's conclusions, the Commission issued a Notice of Comment Period on Department of Commerce Request to Reconsider Establishment of Advisory Task Force.[81] The notice gave the public until August 22, 2015, to submit comments related to the establishment of an advisory task force.[82] The DOC-EERA received 22 comments related to the establishment of an advisory task force.[83]

63. On September 5, 2014, the DOC-EERA filed a letter summarizing the public comments received related to the establishment of an advisory task force.[84] The DOC-EERA proposed two alternatives: individual solicitation of input from local units of government and non-governmental organizations, or the establishment of an informal "work group."[85]

64. On September 24, 2014, the Commission issued an Order Amending its July 2, 2014 Order, Striking the Advisory Task Force Structure and Charge, and Approving a Work Group.[86] The Order directed the DOC-EERA to develop a "Work Group" for individuals who expressed an interest in the Advisory Task Force.[87] The Commission ordered that the Work Group have at least two meetings and consult directly with local government units to identify any potential zoning conflicts with possible route alternatives.[88]

65. The resulting Work Group held two meetings: one on September 30 and another on October 29, 2014.[89] The Work Group made five recommendations to the DOC-EERA and Commission. First, the Work Group noted that because the Project is

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by MNDNR (September 1, 2015) (eDocket No. 20159-113683-03); Comment by MNDNR (Sept. 1, 2015) (eDocket No. 20159-113683-02); Comment by MNDNR (Sept. 1, 2015) (eDocket No. 20159-113683-04); Comment by DOE (Dec. 4, 2015) (eDocket No. 201512-116200-01); Comment by EPA (Dec. 4, 2015) (eDocket No. 201512-116199-01).

[79] Ex. 104 (DOC-EERA Update on Advisory Task Force).

[80] *Id.*

[81] NOTICE OF COMMENT PERIOD ON DOC-EERA REQUEST TO RECONSIDER ESTABLISHMENT OF ADVISORY TASK FORCE (Aug. 12, 2014) (eDocket No. 20148-102194-01).

[82] NOTICE OF COMMENT PERIOD ON DOC-EERA REQUEST TO RECONSIDER ESTABLISHMENT OF ADVISORY TASK FORCE (Aug. 12, 2014) (eDocket No. 20148-102194-01).

[83] Comment by DOC-EERA (Sept. 5, 2014) (eDocket No. 20149-102886-01).

[84] *Id.*

[85] *Id.*

[86] ORDER AMENDING JULY 2, 2014 ORDER, STRIKING ADVISORY TASK FORCE STRUCTURE AND CHARGE, AND APPROVING WORK GROUP (Sept. 24, 2014) (eDocket No. 20149-103259-01).

[87] ORDER AMENDING JULY 2, 2014 ORDER, STRIKING ADVISORY TASK FORCE STRUCTURE AND CHARGE, AND APPROVING WORK GROUP (Sept. 24, 2014) (eDocket No. 20149-103259-01).

[88] *Id.*

[89] Ex. 107 (Scoping Report).

for a public purpose, it should be routed, as much as possible, on public land in order to, thereby minimizing impact to human settlement and private property use.[90] Second, the Work Group suggested the route follow existing infrastructure corridors.[91] Third, the Work Group expressed its preference for the proposed Blue Route and Minnesota Power's proposed international border crossing location.[92] Fourth, the Work Group asked that the DOC-EERA investigate the legality of following an existing transmission line corridor through a MNDNR-owned Scientific and Natural Area (SNA) as an alternative route.[93] Specifically, the Work Group proposed an alternative route segment following the existing Northern States Power (NSP) 500 kV line, which runs through the Red Lake Peatland SNA and the Lost River Peatland SNA. The Work Group recommended analysis of this additional route alternative in the EIS.[94] Finally, the Work Group proposed two alternative routes for consideration during the routing process: the Effie Variation and the East Bear Lake Variation (discussed, in detail, below).[95]

66. In response to the Work Group's request to evaluate an alternative route through the SNAs, the MNDNR submitted responsive comment, noting that Minn. Stat. § 86A.05, subd. 5 (2014), limits physical development in SNAs to "the facilities absolutely necessary for protection, research, and educational projects, and, where appropriate, for interpretative services."[96] The MNDNR opined that the construction of a transmission line was not compatible with the stated limitation.[97] In addition, the MNDNR advised that peatland SNAs involve additional regulations set forth in Minn. Stat. §§ 84.035 and 84.036 (2014).[98] In light of the additional statutes, the MNDNR concluded that the existing NSP 500 kV corridor would be allowed as a grandfathered line, but any expansion of the corridor for an additional line would not be permitted because it would result in a new "disturbance" which would harm resources within the delicate peatland SNAs.[99]

D. Amended Proposed Border Crossing

67. After filing its Application, Minnesota Power learned that the border crossing proposed in its Application would no longer be feasible due to its proximity to the Piney-Pinecreek Border Airport and the Roseau River Wildlife Management Area.[100]

68. As a result, Manitoba Hydro and Minnesota Power negotiated a new border crossing location approximately 4.3 miles east of the original border crossing location.[101] The agreed-upon border crossing is located 2.9 miles east of Highway 89 in Roseau County (Lat. 49 00 00.00N; Long. 95 54 50.49W) and is referred to herein as the

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[90] *Id.*
[91] *Id.*
[92] *Id.*
[93] *Id.*
[94] *Id.*
[95] *Id.*, Appendix E (Scoping Report).
[96] Comment by MNDNR (Nov. 26, 2015) (eDocket No. 201411-105005-01).
[97] *Id.*
[98] *Id.*
[99] *Id.*
[100] AMENDMENT TO BORDER CROSSING (Oct. 29, 2015) (eDocket No. 201410-104234-01).
[101] *Id.*

"Proposed Border Crossing."[102] The Proposed Border Crossing is the origination of both the proposed Blue and Orange Routes along the Canada-U.S. border.[103]

69. On or about October 29, 2014, Minnesota Power amended its Application, as well as its federal application for a Presidential Permit, to include the Proposed Border Crossing location.[104]

70. Minnesota Power's Presidential Permit Application is currently awaiting approval by the DOE.[105] However, both the U.S. Department of Defense and the U.S. Department of State have advised the Department of Energy that they have reviewed the DEIS and the Presidential Permit Application and have no objection to the issuance of the Presidential Permit Application.[106]

E. Scoping Summary and Decision

71. The DOC-EERA filed a Scoping Summary Report on November 13, 2014.[107] In the report, the DOC-EERA identified 33 alternative route segments, including five international border crossing alternatives, and nine alignment modifications requested during the scoping process.[108]

72. Minnesota Power responded to the proposed border crossing alternatives, segment alternatives, and alignment modifications.[109] The Company opposed the study of nearly all of the alternatives.[110]

73. On December 5, 2014, the DOC-EERA submitted a summary of the public information and scoping meetings, which identified the route alternatives recommended for study in the EIS.[111] The DOC-EERA recommended studying 22 of the 33 alternative route segments and all nine alignment modifications identified during the scoping process.[112]

74. On January 9, 2015, the DOC-EERA issued the EIS Scoping Decision.[113] A Notice of Environmental Impact Statement Scoping Decision was contemporaneously

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[102] *Id.*
[103] *Id.*
[104] *Id.*
[105] *See* U.S. Dept. of Energy (Dec. 30, 2015), http://energy.gov/oe/downloads/application-presidential-permit-oe-docket-no-pp-398-minnesota-power-great-northern-4.
[106] LETTER FROM U.S. DEPT. OF DEFENSE (September 11, 2015) (eDocket No. 20159-113920-01).
[107] Ex. 107 (Scoping Report).
[108] Ex. 205 (DOC-EERA Public Hearing presentation).
[109] RESPONSE TO NOVEMBER 2014 SCOPING REPORT PART I (Nov. 14, 2014) (eDocket 201411-104659-01); RESPONSE TO NOVEMBER 2014 SCOPING REPORT PART II (Nov. 14, 2014) (eDocket No. 201411-104659-02).
[110] Ex. 108 (DOC-EERA Comments and Recommendations). Minnesota Power did not respond to one segment option because the segment option was proposed after the Company had already filed a response.
[111] Ex. 108 (DOC-EERA Comments and Recommendations).
[112] *Id.*
[113] Ex. 110 (EIS Scoping Decision).

e-filed and served on the Commission's contact list for the Project, as required by Minn. R. 7850.2500, subp. 2 (2014).[114]

75. In the EIS Scoping Decision, the DOC-EERA identified 22 route segment alternatives and nine alignment modifications to be studied in the EIS, along with the Blue and Orange Route Alternatives proposed by Minnesota Power in the Application.[115] The 22 route segment alternatives identified in the EIS Scoping Decision for study were:[116]

- Pine Creek Border Crossing Alternative Route Segment (hereafter referred to as the Pine Creek Variation)
- Highway 310 Border Crossing Alternative Route Segment (hereafter referred to as the Highway 310 Variation)
- 500 kV Border Crossing Alternative Route Segment (hereafter referred to as the 500 kV Variation)
- 230 kV Border Crossing Alternative Route Segment (hereafter referred to as the 230 kV Variation)
- Roseau Lake Wildlife Management Area (WMA) Alternative Route Segment 1 (hereafter referred to as the Roseau Lake WMA Variation 1)
- Roseau Lake WMA Alternative Route Segment 2 (hereafter referred to as the Roseau Lake WMA Variation 2)
- Cedar Bend WMA Alternative Route Segment (hereafter referred to as the Cedar Bend Variation
- Beltrami WMA Alternative Route Segment 1 North (hereafter referred to as the Beltrami North Variation 1)
- Beltrami WMA Alternative Route Segment 1 South (hereafter referred to as the Beltrami North Central Variation 4)
- Beltrami WMA Alternative Route Segment 2 (hereafter referred to as the Beltrami North Variation 2)
- Beltrami WMA Alternative Route Segment 3 (hereafter referred to as the Beltrami North Central Variation 2)
- Beltrami WMA Alternative Route Segment 4 (part of what will referred to herein as the Beltrami North Central Variations 3 and 5)
- Beltrami WMA Alternative Route Segment 5 (part of what will be referred to herein as the Beltrami North Central Variation 1)
- Beltrami WMA Alternative Route Segment 7 (hereafter referred to as the Beltrami South Central Variation)
- Beltrami WMA Alternative Route Segment 8 (hereafter referred to as the Beltrami South Variation)
- North Black River Alternative Route Segment (hereafter referred to as the North Black River Variation)

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[114] AFFIDAVIT OF SERVICE (Jan. 9, 2015) (eDocket No. 20151-106061-01).
[115] Ex. 110 (EIS Scoping Decision).
[116] *Id.*

- Northome Alternative Route Segment (hereafter referred to as the Northome Variation)
- Cutfoot Alternative Route Segment (hereafter referred to as the Cutfoot Variation)
- Effie Alternative Route Segment (hereafter referred to as the Effie Variation)
- East Bear Lake Alternative Route Segment (hereafter referred to as the East Bear Lake Variation)
- Dead Man's Pond Alternative Route Segment (hereafter referred to as the Dead Man's Pond Variation)
- Balsam Alternative Route Segment 1 (hereafter referred to as the Balsam Variation)[117]

76. The nine alignment modifications identified in the EIS Scoping Decision for study were:[118]

- Silver Creek WMA Alignment Modification
- Airstrip Alignment Modification
- Mitzvah Alignment Modification
- Gravel Pit Alignment Modification
- Bass Lake Alignment Modification
- Wilson Lake Alignment Modification
- Grass Lake Alignment Modification
- Deadman's Pond Alignment Modification
- Trout Lake Alignment Modification

F. Presidential Permit for International Border Crossing

77. Transmission lines crossing an international border require a Presidential Permit from the U.S. Department of Energy.[119] The DOE has determined that the issuance of a Presidential Permit for the proposed Project constitutes a major federal action and an environmental impact statement (EIS) is the appropriate level of review under the National Environmental Policy Act of 1969 (NEPA).[120]

78. Pursuant to NEPA, when considering an application for a Presidential Permit the DOE must take into account possible environmental impacts and reasonable

[117] The names of the variations in the Beltrami North Variation Area, Beltrami North Central Variation Area, Beltrami South Central Variation Area, and Beltrami South Variation Area change from the Scoping Decision to the DEIS and FEIS, causing some confusion. The names for the variations or route alternatives used in the FEIS shall be used in this Report.
[118] Ex. 110 (EIS Scoping Decision).
[119] Exec. Order 10,485, 18 Fed. Reg. 5397 (Sept. 3, 1953).
[120] Ex. 119 at S-1 (Final Environmental Impact Statement).

alternatives to the proposed Project.[121] Similarly, Minnesota law requires that the DOC-EERA prepare an EIS for the proposed Project.[122]

79. Accordingly, the environmental review required for the proposed Project needs to comply with both federal and state regulations.[123] To that end, the DOE and the DOC-EERA decided to jointly develop one EIS that would meet all the requirements of both federal and state law, so as to avoid duplication.[124] In preparation of the EIS, the DOE acted as the federal lead agency, and DOC-EERA acted as the state lead agency pursuant to 40 CFR 1501.5(b). This Report shall address only the adequacy and requirements of the state environmental review process.

G. DOC-EERA Environmental Review

80. On January 26, 2015, the Commission issued an Order Concurring in the Scoping Decision.[125] Thereafter, the DOC-EERA, in conjunction with the DOE, embarked on an extensive environmental review of the proposed route alternatives, route segment alternatives, and alignment modifications identified in the scoping decision.

81. Although not required by statute or rule, the DOC-EERA sends a letter to landowners who may be directly or indirectly affected by route alternatives identified during the scoping process to inform them of the Project.[126]

82. On February 9, 2015, the DOC-EERA prepared a form letter to landowners impacted by the route segment alternatives and alignment modifications identified during the scoping process (Newly Identified Landowner Letter).[127] The Newly Identified Landowner Letter informed the landowners of the Project, the route permit application process, the on-going environmental impact study, and the public hearings that would eventually be held on the Project.[128]

83. Based upon the routing alternatives and variations identified during the scoping process, the DOC-EERA created a list of 622 landowners potentially affected by the route alternatives and variations.[129] The mailing list was called the "New Landowner Mailing List."[130] That same day, February 9, 2014, the DOC-EERA identified 24 additional landowners who may also be affected by the route alternatives and alignment

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[121] *Id.*
[122] Minn. R. 7850.2500 (2015).
[123] *Id.*
[124] *Id.*
[125] ORDER CONCURRING IN SCOPING DECISION (Jan. 26, 2015) (eDocket 20151-1066641-01).
[126] AFFIDAVIT OF BILL STORM at ¶2 (Aug. 18, 2015) (eDocket No. 20158-113390-01); *see also* Ex. 113 (Newly Affected Landowner Notice).
[127] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01); Ex. 113 (Newly Affected Landowner Notice).
[128] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01); Ex. 113 (Newly Affected Landowner Notice).
[129] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01).
[130] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01); Ex. 113 (Newly Affected Landowner Notice).

modifications identified in the scoping process.[131] The list of 24 additional landowners was named by the DOC-EERA, the "ADDITIONAL New Landowners Mailing List."[132]

84. Bill Storm, an analyst for the DOC-EERA, prepared the February 9, 2015 Newly Identified Landowner Letter.[133] Mr. Storm instructed his assistant, Sharon Ferguson, to send the letter to the 622 individuals listed on the New Landowner Mailing List.[134] Ms. Ferguson complied and mailed the letter to those 622 individuals on February 9, 2015.[135] Later that same day, Mr. Storm instructed a different staff member, Caren Warner, to mail the same letter to the 24 individuals listed on the ADDITIONAL New Landowners Mailing List.[136] While Mr. Storm believes Ms. Warner mailed the letter to the 24 individuals listed on the ADDITIONAL New Landowners Mailing List, and his computer files indicate the letter was prepared for the 24 additional landowners, Ms. Warner did not prepare an affidavit of service to document the mailing.[137]

85. On June 19, 2015, DOC-EERA issued the Draft Environmental Impact Study (DEIS),[138] as well as a Notice of Availability of the Draft Environmental Impact Study, State Public Information Meetings, and Federal Public Hearings.[139] The notice advised the public of combined DEIS informational meetings and federal public hearings required for the issuance of a Presidential Permit.[140] The meetings were scheduled to occur on July 15, 16, 21, and 22, 2014, in Roseau, Baudette, Littlefork, International Falls, Kelliher, Bigfork, and Grand Rapids, Minnesota.[141]

86. The DOC-EERA served the Notice of Availability of the DEIS, State Public Information Meetings, and Federal Public Hearings upon the individuals and entities identified on the Commission's project contact list, as required by Minn. R. 7850.2500, subps. 7 and 8.[142] The DOC-EERA also placed the notice in the *Environmental Quality Board Monitor*, which was published on June 22, 2015.[143] The notice gave the public

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[131] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01); Ex. 113 (Newly Affected Landowner Notice).
[132] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01); Ex. 113 (Newly Affected Landowner Notice).
[133] AFFIDAVIT OF BILL STORM at ¶¶4-5 (Aug. 18, 2015) (eDocket No. 20158-113390-01).
[134] AFFIDAVIT OF BILL STORM at ¶4, Attachment (Aug. 18, 2015) (eDocket No. 20158-113390-01);
[135] Ex. 113 (Newly Affected Landowner Notice).
[136] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01).
[137] AFFIDAVIT OF BILL STORM at ¶4 (Aug. 18, 2015) (eDocket No. 20158-113390-01); AFFIDAVIT OF CAREN WARNER ¶5 (Aug. 21, 2015) (eDocket No. 20158-113450-01).
[138] Ex. 111 (Draft Environmental Impact Statement).
[139] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[140] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[141] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[142] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[143] Ex. 117 (June 22, 2015, EQB publication).

until August 10, 2015, more than 10 days after the close of the informational meetings, to submit comments on the DEIS, as required under Minn. R. 7850.2500, subp. 8.[144]

87. In addition, between June 26 to July 4, 2015, Minnesota Power published in newspapers of general circulation within the proposed Project area the Notice of the DEIS, State Public Information Meetings, and Federal Public Hearings.[145]

88. The record is silent as to whether the DOC-EERA posted the notice on its agency webpage.

89. As required by Minn. R. 7850.2500, subp. 7, Minnesota Power made the DEIS available for public review by placing a copy of the document in the public libraries located in the following Minnesota communities: Baudette, Blackduck, Bovey, Calumet, Coleraine, Duluth, Grand Rapids, Greenbush, International Falls, Marble, Northome, Roseau, Warroad, and Williams.[146]

90. On July 7, 2015, Minnesota Power sent "a letter to landowners" regarding the Notice of Availability of the DEIS, State Public Information Meetings, and Federal Public Hearings.[147] The relevant affidavit of service cited inapplicable law, failed to attach the document(s) served, and failed to include a list of who was served.[148]

91. The Notice of Availability of the DEIS, State Public Information Meetings, and Federal Public Hearings provided that comments to the DEIS and DOE Presidential Permit would be accepted through August 10, 2015.[149]

92. Between July 15, 2015 and July 22, 2015, the DOC-EERA and DOE held Public Information Meetings and Federal Public Hearings on the DEIS and Presidential Permit in Roseau, Baudette, Littlefork, International Falls, Kelliher, Bigfork and Grand Rapids, Minnesota. During the hearings, the DOC-EERA and DOE accepted public comments regarding the DEIS and Presidential Permit.

93. On August 10, 2015, Minnesota Power filed a response to the DEIS.[150] The DEIS public comment period closed at the end of the day on August 10, 2015.[151]

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[144] Ex. 117 (June 22, 2015, EQB publication).
[145] AFFIDAVIT OF PUBLICATION (Aug. 5, 2015) (eDocket No. 20158-113053-01).
[146] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[147] Ex. 58 (Affidavit of Mailing); Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[148] *See* Ex. 58 (Affidavit of Mailing); Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[149] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).
[150] RESPONSE TO DRAFT ENVIRONMENTAL IMPACT STATEMENT (Aug. 10, 2015) (eDocket No. 20158-113134-01).
[151] Ex. 112 (Notice of Availability of Draft EIS, State Public Information Meetings, and Federal Public Hearings).

H. Public and Evidentiary Hearings

94. On July 23, 2015, the Commission issued a Notice of Public Hearings, setting forth the dates, times, and locations of the eight public hearings, to occur on August 5, 6, 12, and 13, 2015.[152] It is unclear in the record if the notice was served on the original project list, an updated project list (including newly-identified landowners), or the Commission's general list.

95. On July 29, 2015, the Commission served the Notice of Public Hearings on 12 additional individuals.[153] The record is silent as to why this occurred.

96. In addition, in conformity with Minn. Stat. § 216E.03, subd. 6, on or about July 24, 2015, the Commission sent, by certified mail, the Notice of Public Hearings to the chief executives of the regional development commissions, counties, organized towns, townships, and the incorporated municipalities in the proposed route areas.[154]

97. Between July 22 and July 31, 2015, Minnesota Power published the Notice of Public Hearings in legal newspapers of general circulation in the counties in which the public hearings were to be held, as well as in the communities in which the proposed routes would be located, thereby satisfying the requirements of Minn. Stat. § 216E.03, subd. 6.[155]

98. Combined public and evidentiary hearings were conducted by an Administrative Law Judge on August 5, 6, 12, and 13, 2015, in Roseau, Baudette, Littlefork, Kelliher, Bigfork, and Grand Rapids, Minnesota.[156]

99. The evidentiary hearings took place after the public hearings in the following locations: Roseau, Minnesota, on August 5, 2015; Baudette, Minnesota, on August 6, 2015; Littlefork, Minnesota, on August 6, 2015; Kelliher, Minnesota, on August 12, 2015; and Grand Rapids, Minnesota, on August 13, 2015.

100. Minnesota Power's witnesses, James Atkinson, Christina Rolfes, Darel Tracy and Christian Winter, appeared at each of the evidentiary hearings, as well as at the public hearings.

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[152] NOTICE OF PUBLIC HEARINGS (July 23, 2015) (eDocket No. 20157-112684-01); AFFIDAVIT OF SERVICE (July 23, 2015) (eDocket No. 20157-112684-02).
[153] ADDITIONAL SERVICE LIST (July 30, 2015) (eDocket No. 20157-112862-01).
[154] LGU CERTIFIED MAIL (Aug. 24, 2015) (eDocket No. 20158-113474-01); RETURN RECEIPTS FOR CERTIFIED MAIL (Aug. 24, 2015) (eDocket No. 20158-113474-02). The Commission's filing only contains the certified mail return receipts and mailing receipts, and does include a copy of the document actually served. Due to the timing of this service, the document served was presumably the Notice of Public Hearings.
[155] AFFIDAVIT OF PUBLICATION (Sept. 3, 2015) (eDocket No. 20159-113774-01).
[156] Roseau Hearings Transcript (Tr.) Volume (Vol.) 1-2 (Aug. 5, 2015); Baudette Hearing Tr. Vol. 3 (Aug. 6, 2015); Littlefork Hearing Tr. Vol. 4 (Aug. 6, 2015); Kelliher Hearing Tr. Vol. 5 (Aug. 12, 2015); Bigfork Hearing Tr. Vol. 6 (Aug. 12, 2015); Grand Rapids Hearings Tr. Vol. 7-8 (Aug. 13, 2015).

101. While DOC-EERA offered no pre-filed or other witness testimony, Project Manager Bill Storm appeared at each of the public and evidentiary hearings to answer questions for members of the public and to assist in the clarification of information during the evidentiary hearing.

I. Final Environmental Impact Statement

102. Upon completion of the public information meetings related to the DEIS and Presidential Permit, and the closing of the public comment period related to the DEIS (August 10, 2015), the DOC-EERA undertook to prepare the Final Environmental Impact Statement.

103. On October 30, 2015, the DOC-EERA and DOE e-filed the FEIS, a multi-volume document comprising over 3,200 pages and containing a thorough discussion of the issues and alternatives raised in scoping.[157]

104. On November 2, 2015, the DOC-EERA served Notice of Availability of the Final Environmental Impact Statement on the project contact list, as required by Minn. R. 7850.2500, subp. 9.[158] The DOC-EERA also placed the notice in the *Environmental Quality Board Monitor*, which was published on November 9, 2015, and supplied a press release to at least one newspaper of general circulation in the Project area.[159]

105. The U.S. Department of the Interior, on behalf of the USFWS, submitted written comments regarding the FEIS. The agency noted that it has requested an in-depth analysis of the impacts to USFWS Interest Lands and the USFWS preferred alternative, as part of the EIS. The USFWS advised that it will need such analysis before it can grant a ROW permit for access to the land; and the USFWS cautioned that such permitting process may cause delays in the project. In addition, the USFWS noted that if there are impacts to USFWS Interest Lands, it "considers compensatory mitigation mandatory before [it] will grant a ROW permit." Finally, the USFWS stated that it does

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[157] *See* FINAL ENVIRONMENTAL IMPACT STATEMENT (Oct. 30, 2015) (eDocket Nos. 201510-115232-04, 201510-115248-02, 201510-115261-01, 201510-115251-01, 201510-115261-10, 201510-115-251-02, 201510-115261-03, 201510-115238-05, 201510-115248-08, 201510-115261-09, 201510-115258-10, 201510-115248-07, 201510-115258-02, 201510-115258-09, 201510-115248-09, 201510-115251-03, 201510-115261-05, 201510-115238-10, 201510-115261-08, 201510-115261-06, 201510-115238-07, 201510-115251-05, 201510-115251-07, 201510-115258-08, 201510-115248-03, 201510-115258-03, 201510-115258-04, 201510-115238-08, 201510-115232-02, 201510-115251-06, 201510-115232-01, 201510-115258-07, 201510-115238-04, 201510-115248-10, 201510-115248-05, 201510-115258-06, 201510-115261-04, 201510, 115238-01, 201510-115248-01, 201510-115258-05, 201510-1155251-04, 201510-115251-09, 201510-115238-02, 201410-115238-09, 201510-115231-01, 201510-115238-03, 201510-115251-08, 201510-115231-02, 201510-115232-03, 201510-115261-07, 201510-115248-04, 201510-115251-10, 201510-115261-02, 201510-115258-01, 201510-115248-06, 201510-115262-01, 201510-115238-06); FINAL ENVIRONMENTAL IMPACT STATEMENT (Dec. 18, 2015) (eDocket Nos. 201512-116605-08, 201512-116605-02, 201512-116605-06, 201512-116605-03, 201512-116605-05, 201512-116605-07, 201512-116605-04, 201512-116605-01).

[158] NOTICE OF AVAILABILITY OF FINAL ENVIRONMENTAL IMPACT STATEMENT (Nov. 3, 2015) (eDocket No. 201511-115405-01).

[159] EQB MONITOR NOTICE OF FINAL ENVIRONMENTAL IMPACT STATEMENT (Dec. 22, 2015) (eDocket No. 201512-116736-01).

"not agree that the FEIS adequately addresses compensatory mitigation that might be necessary in light of the potential environmental impacts of the GNTL."[160]

106. The U.S. Environmental Protection Agency (EPA) also provided written comment on the FEIS. The EPA noted that "the FEIS does not identify Minnesota Power's proposed locations for permanent and temporary access roads, laydown areas, stringing areas and fly-in sites, and potential pole locations along with their potential resources impact as we recommended." Because of this, the EPA warns that there may be additional impacts to resources such as wetlands and forests that have not been disclosed in the FEIS. The EPA then made various recommendations to be included in the federal Record of Decision.[161]

107. Minnesota Power provided extensive comments on the DEIS and acknowledges stated that the FEIS meets all relevant rule criteria and should be accepted as adequate.[162]

108. The FEIS addressed the issues and alternatives raised in the scoping processes to a reasonable extent considering the availability of information and the time limitations for considering the permit application. The FEIS also provided responses to the timely and substantive comments received during the DEIS review process.

III. PUBLIC COMMENT PROCESS

A. Public Hearings

109. Eight public hearings were held at the following locations and times: Roseau, Minnesota on August 5, 2015, at 11:00 a.m. and at 6:00 p.m.; Baudette, Minnesota on August 6, 2015, at 11:00 a.m.; Littlefork, Minnesota on August 6, 2015, at 6:00 p.m.; Kelliher, Minnesota on August 12, 2015, at 11:00 a.m.; Bigfork, Minnesota on August 12, 2015, at 6:00 p.m.; and Grand Rapids, Minnesota on August 13, 2015, at 11:00 a.m. and at 6:00 p.m. The following is a summary of the public commentary presented at the public hearings.

1. Roseau Morning Hearing (August 5, 2015)

110. Seventeen people spoke at the Roseau morning hearing on August 5, 2015, with no members of the public opposing the Applicant's preferred Blue Route.[163]

111. Gerry Reed, a resident of America Township (south of Warroad, Minnesota), is an owner of a private airstrip that would be impacted by the Roseau Lake WMA Variation 1. As a result, Mr. Reed supports either the Blue/Orange Route, but opposes the Roseau Lake WMA Variation 1.[164]

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[160] Comments by DOE (Dec. 4, 2015) (eDocket No. 201512-116200-01).
[161] Comments by EPA (Dec. 4, 2015) (eDocket No. 201512-116199-01).
[162] Minnesota Power Reply Brief (Br.) at 12.
[163] Tr. Vol. 1 at 11-158.
[164] Tr. Vol. 1 at 70-76.

112. Nola Brandt, Malung Township, Minnesota, supports the proposed Blue/Orange Route, but opposes the Roseau Lake WMA Variation 1, noting that the variation would negatively impact numerous family farms in that area. Ms. Brandt urges the Commission to honor the years of public involvement in developing the Company's proposed routes, and consider the people, their homes, and their livelihoods in the areas impacted by variations proposed by the MNDNR (specifically, the Roseau Lake WMA Variations 1 and 2).[165]

113. Marlin Elton, Pine Creek Township, Minnesota, voiced his support for the Highway 310 Variation Border Crossing over the Applicant's Proposed Border Crossing and Blue/Orange Route. Mr. Elton did not elaborate further as to his preference.[166]

114. Tom Johnson, Roseau, Minnesota, opposed the Roseau Lake WMA Variation 1, which cuts through his farm land. Mr. Johnson explained that the Roseau Lake WMA Variation 1 would impact an area of land where he and his father have planted over 60,000 trees. Accordingly, Mr. Johnson supports the proposed Blue/Orange Route, which avoids his property.[167]

115. Nathan Dahl, Falun Township, Minnesota, provided both written and oral comment. Mr. Dahl owns a farm which would be impacted by the Roseau Lake WMA Variation 1. Mr. Dahl states that the powerline would make farming his land harder and more costly, and would hamper his ability to use aerial spraying methods. In addition, Mr. Dahl argues that the Roseau Lake WMA Variation 1 would impact historic farming areas in Falun Township, as well as scenic areas, such as the Bemis Hill Scenic Overlook and Beltrami Island State Forest ridge line. Moreover, Mr. Dahl warns that water fowl that live and nest in the area would be disturbed by the alternative. Finally, Mr. Dahl is concerned about how a power line will impact his ability to receive radio signals and how the electromagnetic fields of the lines will affect his health.[168]

116. Gary Slater, Roseau, Minnesota, is a pilot who performs aerial crop spraying for farmers in the Roseau area. Mr. Slater explained that farms in the area depend on aerial spraying for their crops, but that aerial spraying is very difficult to do around power lines. To avoid agricultural land as much as possible, Mr. Slater supports the Blue/Orange Route but asks that the Commission consider the Highway 310 Border Crossing, as opposed to the Proposed Border Crossing and Blue/Orange Route.[169]

117. Leroy Carriere appeared on behalf of the Roseau River Watershed District Board of Managers. Mr. Carriere voiced the Watershed District's support for the proposed Blue Route and urged the Commission to avoid the Roseau Lake WMA Variation 2.

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[165] Tr. Vol. 1 at 77-78.
[166] Tr. Vol. 1 at 78-80.
[167] Tr. Vol. 1 at 80-82.
[168] Tr. Vol. 1 at 82-85; ROSEAU HEARING EXHIBIT 210 (Aug. 28, 2015) (eDocket No. 20158-113597-01).
[169] Tr. Vol. 1 at 86-90.

Mr. Carriere stated that the Roseau Lake WMA Variation 2 would create complications for a dike in the Norland Empoundment [sic] and the local flood storage area.[170]

118. Laverne Voll, Lake Township, Minnesota, expressed his opposition to the Proposed Border Crossing and Blue/Orange Route. Mr. Voll urged the Commission to select the 230 kV Variation Border Crossing Variation instead. Mr. Voll also opposed the Roseau Lake WMA Variation 2.[171]

119. Todd Miller, a Roseau County Commissioner, spoke on behalf of the Roseau County Board of Commissioners. Mr. Miller stated that his involvement in the routing process began with the Work Group organized by the DOC-EERA. Mr. Miller emphasized that a primary concern of the Work Group was that the route selected should "minimize impacts to private property and maximize the use of state land." Based upon this preference, the Work Group supports the Blue Route, as proposed by the Applicant. Mr. Miller asserts that the Blue Route is in the "best interest" of Roseau County. According to Mr. Miller, the County is "very much opposed" to the Roseau Lake WMA Variation 1. Mr. Miller urges the Company to "treat landowners fairly" and "compensate them well" for their land. Mr. Miller reiterated the Roseau County Board of Commissioner's Resolution 2014-02-01, which documents the County's support for the Blue/Orange Route and Proposed Border Crossing, and its opposition to any other alternative routes proposed in Roseau County.[172]

120. Roger Falk, Norland Township, Minnesota, is also a Roseau County Commissioner. Mr. Falk thanked Minnesota Power for involving the Roseau County Board in the routing and planning process. Mr. Falk emphasized the County's preference for a route that maximizes the use of public land over private land. According to Mr. Falk, the Roseau Lake WMA Variations 1 and 2 would impact approximately 160 households, whereas the Blue Route would impact approximately 11 households. Accordingly, Mr. Falk supports the Blue/Orange Route, but urges the Commission to consider a border crossing further east of the current Proposed Border Crossing location.[173]

121. Greg Grahn farms land east of Roseau, Minnesota. Mr. Grahn stated that he is not in favor of any particular route, but he is adamantly opposed to the Roseau Lake WMA Variations 1 and 2 due to their potential impacts on farmland in the area. Mr. Grahn is a pilot who has performed aerial crop spraying for 25 years. He explained that if either of the Roseau Lake WMA Variations is selected, he will not spray fields in those areas due to the hazards of flying near power lines. Mr. Grahn warned against the dangers of flying airplanes near power lines.[174]

122. David Lund, Warroad, Minnesota, presented both written and oral comment. Mr. Lund expressed his concern about the impact that certain route

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[170] Tr. Vol. 1 at 90-93; ROSEAU HEARING EXHIBIT 212 (Aug. 28, 2015) (eDocket No. 20158-113597-03).
[171] Tr. Vol. 1 at 94-99.
[172] Tr. Vol. 1 at 100-102; Ex. 35 (Roseau County Resolution).
[173] Tr. Vol. 1 at 102-103.
[174] Tr. Vol. 1 at 103-108, 134-135.

alternatives would have on farming operations, which rely heavily on large machinery and aerial spraying. Specifically, Mr. Lund strongly opposes the Beltrami North Variation 1 and 2, stating that his house and 40-year-old, 400-acre tree farm would be negatively impacted by those route alternatives. Instead, Mr. Lund expressed his preference for the Blue or Orange Routes. Mr. Lund was critical of the DEIS, which, in his opinion, placed the interests of the USFWS and protection of land the agency oversees above the property interests of private citizens. Mr. Lund argued that human impacts are just as important as environmental impacts and should be given adequate weight in the routing process.[175]

123. Charles Habstritt, Roseau, Minnesota, voiced support for the Blue/Orange Route and opposition to the Roseau Lake WMA Variation 2. Mr. Habstritt noted that the Roseau Lake WMA Variation 2 runs through a "very delicate" area of peat land and would largely eliminate the ability to conduct aerial spraying of crops in the area.[176]

124. Blair Comstock, Roseau, Minnesota, owns a family farm along the Roseau Lake WMA Variation 1 and argued against the selection of that alternative. Mr. Comstock explained that a large population of migratory birds, including eagles, use the area for nesting and would be negatively impacted by the alternative. In addition, Mr. Comstock explained that aerial spraying is an important part of farming in the area and that power lines would impact the farmer's ability to continue such practices. As a result, Mr. Comstock supports the Blue/Orange Route, along with the 230 kV Border Crossing Variation, but opposes the Roseau Lake WMA Variation 1.[177]

125. Douglas Erickson, Roseau, Minnesota, voiced his support for the Blue/Orange Route, and his opposition to the Roseau Lake WMA Variations 1 and 2, due to their impacts on agricultural lands and aerial spraying.[178]

126. Jack Swanson is a member of the Roseau County Board of Commissioners, representing the City of Roseau and Jadis Township. Mr. Swanson praised Minnesota Power on its efforts to keep the public informed and seek input from landowners. Mr. Swanson presented comments in support of the Blue/Orange Route and the Proposed Border Crossing. Mr. Swanson asserted that because the Project provides a public benefit, it should be located, wherever possible, on public land as opposed to private property.[179]

127. John Wahlberg owns farmland north of Roseau, Minnesota. Mr. Wahlberg opposes the Roseau Lake WMA Variation 2 due to its potential impact on farming and aerial crop spraying. Mr. Wahlberg expressed that public sentiment favors placing the

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[175] Tr. Vol. 1 at 109-117, 136-158; ROSEAU HEARING EXHIBIT 220 (Aug. 28, 2015) (eDocket No. 20158-113598-01).
[176] Tr. Vol. 1 at 120-123.
[177] Tr. Vol. 1 at 123-126.
[178] Tr. Vol. 1 at 126-130.
[179] Tr. Vol. 1 at 130-131; *see also* ROSEAU HEARING EXHIBIT 204 (Aug. 28, 2015) (eDocket No. 20158-113595-05).

route on public lands as opposed to private properties, and urged the Commission to honor the public preference.[180]

2. Roseau Evening Hearing (August 5, 2015)

128. Nine people spoke at the Roseau evening hearing on August 5, 2015. None of the commenters expressed opposition to the proposed Blue Route.[181]

129. At the hearing, Marie Johnson, Salol, Minnesota, questioned the Company about the health effects of living near high voltage transmission lines. Ms. Johnson warned that the Roseau Lake WMA Variation 1 would place a power line too close to homes so she opposes that alternative. In her written comments, Ms. Johnson notes that the Roseau Lake WMA Variation 1 would also impact a nearby airstrip and asked that the Commission select a route near Roseau that uses existing utility corridors.[182]

130. Nancy Hammer, Badger, Minnesota, questioned who receives the money from the Company if public land is used for the power lines. Ms. Hammer expressed her opposition to both the Roseau Lake WMA Variations 1 and 2.[183]

131. Jerry Skoglund owns a cattle farm in Roseau, Minnesota. Mr. Skoglund expressed concern about the effects of electromagnetic fields and stray voltage on his cattle if the power lines were to be located near his farm. He also questioned the Company on the type of pole structures that would be used. Minnesota Power provided him with a diagram of the proposed structures that would be located near his property. While Mr. Skoglund is concerned about the health risks related to high voltage lines, he favors the Orange/Blue Route and strongly opposes the Roseau Lake WMA Variation 1.[184]

132. Charles Skoglund, Jerry Skoglund's brother, stated that he shares his brother's concerns and similarly opposes the Roseau Lake WMA Variation 1. Charles Skoglund raised a question about why the Roseau Lake WMA Variation 1 crosses diagonally through properties and so close to homes.[185]

133. Maxine Skoglund, the mother of Jerry and Charles, supported the statements made by her sons.[186]

134. Dan Fabian is a State Representative from Minnesota House District 1A, which includes all of Roseau County, all of Kittson County, all Marshall County, and a portion of Pennington County. Rep. Fabian presented both written and oral comments into the hearing record. Rep Fabian expressed his "strong support" for the Blue/Orange

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[180] Tr. Vol. 1 at 131-134.
[181] Tr. Vol. 2 at 4-93.
[182] Tr. Vol. 2 at 37-43, 45-48.
[183] Tr. Vol. 2 at 43-45.
[184] Tr. Vol. 2 at 49-57; ROSEAU HEARING EXHIBIT 222 (Aug. 28, 2015) (eDocket No. 20158-113598-03).
[185] Tr. Vol. 2 at 58-63.
[186] Tr. Vol. 2 at 63-64.

Route and the Proposed Border Crossing. Rep. Fabian urges the Commission to choose the Blue Route so as to avoid homes and agricultural property as much as possible. Rep. Fabian explained that he has spoken to constituents, farmers in the area, representatives from Manitoba Hydro, governmental officials from Manitoba and Minnesota, local county commissioners, and the MNDNR about the proposed Project. He noted that the proposed Blue Route was the result of three years of work between the Company and stakeholders; whereas, the alternatives proposed by the MNDNR and USFWS were not developed cooperatively with residents or local communities. Based upon his discussions with MNDNR Commissioner Tom Landwehr, Rep. Fabian believes that the MNDNR will not "actively pursue" the Roseau Lake Variations 1 and 2. Rep. Fabian warned the Commission that the Roseau Lake Variations would have a significantly negative impact on agriculture, homes, landowners, and families in the area. Thus, he encourages the Commission to select a route that utilizes more public, as opposed to private, land.[187]

135. Steven Pavek, Roseau, Minnesota, questioned why the MNDNR would propose the Roseau Lake WMA Variations 1 and 2, given their impact on private property and human settlement. Mr. Pavek stated that he was troubled by the fact that the MNDNR seeks to avoid a wildlife management area at the expense of property interests and human settlement.[188]

136. Sheldon Rice farms land close to the Proposed Border Crossing. Mr. Rice strongly opposes the Pine Creek Variation Border Crossing and asked that if the Blue/Orange Route and Proposed Border Crossing are selected the power line be sited as far away from his farm as possible.[189]

137. Lorraine Rice, Sheldon Rice's wife, also testified in opposition to the Pine Creek Variation. Ms. Rice requested that, if the Blue/Orange Route and Proposed Border Crossing are selected, the alignment be moved "as far to the east as possible." Ms. Rice also questioned whether the power lines will impact the "underground border security devices" on their property.[190]

3. Baudette Public Hearing (August 6, 2015)

138. Five people presented oral comments at the Baudette public hearing on August 6, 2015.[191]

139. Tom Hanson, Lake of the Woods County Commissioner, presented a Lake of the Woods Resolution in favor of the Orange Route. According to Mr. Hanson, Lake of the Woods County believes that the Orange Route will have the least impact on human settlement of all the proposed routes and alternatives. Mr. Hanson further expressed

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[187] Tr. Vol. 2 at 65-78; Ex. 44 (Letter from Dan Fabian).
[188] Tr. Vol. 2 at 79-83.
[189] Tr. Vol. 2 at 84-89.
[190] Tr. Vol. 2 at 90-92.
[191] Tr. Vol. 3 at 5-133.

concern that the impacted landowners be fairly compensated for any property that is taken or used for the proposed Project.[192]

140. Dale Holte, Baudette, Minnesota, provided both written and oral comment. Mr. Holte owns agricultural land in the Blue Route corridor. Mr. Holte stated that there is already a 230 kV line on his property and that a second line would result in even more obstructions for his farm equipment. Mr. Holte requested that if the Blue Route is selected the line be placed far enough south of the current line to move it off of his farmland and onto state-owned "swamp" land. Minnesota Power responded that, given the need for a 250-foot separation between the two lines, the new line would not be on Mr. Holte's farmland and would, indeed, fall on state-owned land.[193]

141. Robert Humeniniuk, Baudette, Minnesota, owns 240 acres on the proposed Orange Route upon which he operates a tree farm. Mr. Humeniniuk stated that there is already a 230 kV line on his property and that a second line would make it impossible for him to continue to use the property as a tree farm. Accordingly, he strongly opposes the Orange Route. In addition, Mr. Humeniniuk noted that he does not believe he could ever be fairly compensated for his tree farm due to its intrinsic value to his family.[194]

142. Marshall Nelson, Baudette, Minnesota, owns land along the proposed Blue Route. Mr. Nelson advised the Commission that power lines make it difficult to operate large farm equipment on property and have crops sprayed by air. Mr. Nelson submitted a news article involving this issue, as well as photographs demonstrating his point. Mr. Nelson fears that residents are not opposing the Project because they believe it is futile. Mr. Nelson indicated that he does not support the idea of utility corridors on private land and believes the lines should be placed on public property.[195]

143. Gary Bailey owns a bison farm in Williams, Minnesota. Bill Storm of the DOC-EERA provided a map on behalf of Mr. Bailey, who could not remain at the hearing to provide oral comment. In his written comments, Mr. Bailey asserted that if the Orange Route is selected, he will seek the "Buy the Farm" option to sell his property. Mr. Bailey indicated a preference for the Beltrami North Central Variation 3 and Beltrami North Central Variation 5.[196]

144. Jennifer French owns a hunting cabin on 240 acers of property along the Blue Route. Ms. French sought information regarding how close the Blue Route might be to her property but did not indicate any preference for, or opposition to, a particular route or variation.[197]

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[192] Tr. Vol. 3 at 36-40; BAUDETTE HEARING EXHIBIT 226 (Aug. 28, 2015) (eDocket No. 20158-113598-07).
[193] Tr. Vol. 3 at 40-43; BAUDETTE HEARING EXHIBIT 227 (Aug. 28, 2015) (eDocket No. 20158-113598-08).
[194] Tr. Vol. 3 at 43-45.
[195] Tr. Vol. 3 at 46-55.
[196] Tr. Vol. 3 at 56-57; BAUDETTE HEARING EXHIBIT 234 (Aug. 28, 2015) (eDocket No. 20158-113600-05).
[197] Tr. Vol. 3 at 59-61.

4. Littlefork Public Hearing (August 6, 2015)

145. Seven people presented oral comments at the Littlefork public hearing on August 6, 2015.[198]

146. Jeff Naglosky, the Koochiching County Attorney, provided comment on behalf of the Koochiching County Board. Mr. Naglosky stated that Koochiching County supports either the Blue or Orange Routes, with a strong preference for the Blue Route. Mr. Naglosky noted that Minnesota Power "has been very good to work with" and that there have been "at least five meetings here in Littlefork and many, many County Board meetings" where Minnesota Power representatives were present or available for consultation. Mr. Naglosky further indicated that the County opposes the C2 and J2 Segment Options. He noted that the C2 Segment Option would impact more landowners directly when compared to the Blue Route, and that the J2 Segment Option would pass too close to the Northome School. Mr. Naglosky presented Resolution 2015/06-28, passed by the Koochiching County Board of Commissioners, which states that the County opposes all segment options and alignment options offered in substitute of the Blue and Orange Routes.[199]

147. George Gray, Littlefork, Minnesota, owns property adjacent to the C2 Segment Option and operates an existing airstrip on his property. Mr. Gray voiced his opposition to the C2 Segment Option, explaining that it would interfere with the existing runways on his airstrip, making take-offs and landings dangerous. As a result, Mr. Gray supports the Blue Route as a better option in the area.[200]

148. William Gray, Littlefork, Minnesota, also expressed his concerns with the C2 Segment Option due to its proximity to the airstrip. Mr. Gray stated that he built the airstrip in 1968 and has operated it ever since. He is a certified flight instructor, instrument flight instructor, mechanic, and Federal Aviation Administration (FAA)-authorized maintenance inspector. Based on his experience and his qualifications, Mr. Gray explained that the C2 Segment Option would render the airstrip very difficult to maneuver for students and pilots, and would limit the size of aircraft that could land for maintenance.[201]

149. Steve Nelson, International Falls, Minnesota, spoke in support of the same airstrip mentioned by George and William Gray. Mr. Nelson explained that the airstrip serves an important function in the area as it is one of the few places that a pilot can land a plane and have it serviced in the area. Accordingly, Mr. Nelson opposes the C2 Segment Option.[202]

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[198] Tr. Vol. 4 at 5-119.
[199] Tr. Vol. 4 at 35-38; LITTLEFORK HEARING EXHIBIT 237 (Aug. 28, 2015) (eDocket No. 20158-113600-08).
[200] Tr. Vol. 4 at 38-41.
[201] Tr. Vol. 4 at 41-44.
[202] Tr. Vol. 4 at 45-47.

150. Kevin Peterson, International Falls, Minnesota, owns 40 acres on the Koochiching County line, between the Orange Route and the Cutfoot Variation. Mr. Peterson purchased the property in 2012 for recreation and hunting, and plans to construct a cabin on the property. Mr. Peterson stated that one of the reasons he enjoys the area is its solitude, undisturbed nature, and wildlife. Mr. Peterson asserted that a power line in the area will dramatically reduce the value of his land and render it "worthless" for his purposes. Mr. Peterson disagreeds with the DEIS, explaining that both the Orange Route and Cutfoot Variation would, indeed, have negative impacts in the area, particularly to the cedar trees and the wildlife that depend on the cedar forest. Accordingly, Mr. Peterson supports the Blue Route, stating that it would have less impact on forested areas and would make greater use of existing utility corridors.[203]

151. Bonnie Horne, Littlefork, Minnesota, spoke on behalf of herself, her parents, and other family members (Becky Horne Dunn, Bonnie Horne, and Kristy Horne Dunn) in opposition to the C2 Segment Option. Ms. Horne is concerned about the potential health and safety issues related to high voltage power lines, as well as the impact to property values in the area. Specifically, Ms. Horne is opposed to C2 Segment Option because it would come too close to homes in Littlefork and affect numerous families in the area.[204]

152. Lorella Fulton, International Falls, Minnesota, submitted written and oral comments in opposition to the C2 Segment Option. Ms. Fulton explained that the C2 Segment Option would have negative impacts to the residences in the area, would create an "eyesore" in the community, and would lower property values for which compensation would not be sufficient. Ms. Fulton and her husband support the Blue Route which, according to Ms. Fulton, is shorter and will have fewer human and natural impacts.[205]

5. Kelliher Public Hearing (August 12, 2015)

153. Five people presented oral comments at the Kelliher public hearing on August 12, 2015.[206]

154. Tanna Lindner, Mizpah, Minnesota, owns property along County Road 58. The north side of Ms. Lindner's property is on the Orange Route. Ms. Lindner requested that the route alignment be moved to the north so that it is on public property rather than private property. Ms. Lindner expressed gratitude for the DOC-EERA including the Mizpah Alignment Modification into the DEIS and requested that the Commission select that modification if the Orange Route is selected.[207]

155. Michael Handzus, Lakefield, Minnesota, presented written and oral comments in opposition to the Orange Route. Mr. Handzus stated that the Orange Route

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[203] Tr. Vol. 4 at 47-53.
[204] Tr. Vol. 4 at 54-57; LITTLEFORK HEARING EXHIBIT 242 (Aug. 28, 2015) (eDocket No. 20158-113601-03); LITTLEFORK HEARING EXHIBIT 243 (Aug. 28, 2015) (eDocket No. 20158-113601-04); LITTLEFORK HEARING EXHIBIT 244 (Aug. 28, 2015) (eDocket No. 20158-113601-05).
[205] Tr. Vol. 4 at 119; LITTLEFORK HEARING EXHIBIT 245 (Aug. 28, 2015) (eDocket No. 20158-113601-06).
[206] Tr. Vol. 5 at 4-97.
[207] Tr. Vol. 5 at 41-44.

goes through the center of his 640-acre property. Mr. Handzus purchased the property to enjoy nature and is concerned about the impact the Orange Route would have on nature in the area, specifically the moose, wolf, waterfowl, and trees. Mr. Handzus presented photographs of plants and animal species in the area. Mr. Handzus is concerned about the clear-cutting of trees and use of herbicides along the route, which would destroy an otherwise organic area. In short, Mr. Handzus asserted that the Orange Route would be devastating to the fragile and pristine ecosystems that exist in the area.[208]

156. Senator Rod Skoe, State Senator for District 2, stated that a large part of his district is impacted by the Project. Senator Skoe expressed his interest in making sure that any transmission line impacts the fewest number of people. He further indicated his support of the Blue/Orange Route and Proposed Border Crossing, noting the importance of working cooperatively with Manitoba and Manitoba Hydro. Senator Skoe stated that Minnesota Power has been working in cooperation with local governments and his constituents for over three years to develop and refine the route for this Project in a way that is least impactful to residents and landowners. He specifically articulated opposition to MNDNR and USFWS-sponsored variations, given that those variations: (1) were developed without input from local governments or his constituents; (2) would result in significantly more negative impacts to landowners and farmers in the area; and (3) would unnecessarily increase the length of the proposed Project. Sen. Skoe supports the Blue Route and opposes the Orange Route and other alternatives, variations, and modifications proposed in the DEIS.[209]

157. David Leonhardt is the Chair of the Citizens Advisory Committee for the Big Bog Scenic Recreation Area and provided comment on behalf of that Committee. Mr. Leonhardt explained that the Committee is concerned that the Orange Route would be visible from the Big Bog Boardwalk and would spoil the pristine view from the state park. As a result, the Committee is opposed to the Orange Route.[210]

158. Ronald Lindner, Mizpah, Minnesota, stated that he has been involved in this routing process since the beginning and strongly supports the Orange Route, despite the fact that it passes by his property. Mr. Lindner emphasized that the line is transporting hydropower, which is important to the economy and environment. Mr. Lindner commended Minnesota Power for working with citizens in the area in developing the proposed routes. Overall, Mr. Lindner supports the proposed Project.[211]

6. Bigfork Public Hearing (August 12, 2015)

159. Twelve people presented oral comment at the Bigfork public hearing on August 12, 2015.[212]

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[208] Tr. Vol. 5 at 45-53; KELLIHER HEARING EXHIBIT 250 (Aug. 28, 2015) (eDocket No. 20158-113602-01); KELLIHER HEARING EXHIBITS 248A-G (Aug. 28, 2015) (eDocket No. 20158-113601-09).
[209] Tr. Vol. 5 at 55-60.
[210] Tr. Vol. 5 at 60-70.
[211] Tr. Vol. 5 at 71-73.
[212] Tr. Vol. 6 at 4-111.

160. Mark Lofgren owns property in Balsam Township on the Orange Route. Citing the DEIS, Mr. Lofgren argued that the Blue Route is a better alternative in the Balsam Township area because there are few residences on the Blue Route compared to either the Orange Route or the Balsam Variation. In addition, the Blue Route is the shortest of the three alternatives near Balsam Township. Mr. Lofgren asserted that he will pursue a "Buy the Farm" option if the Orange Route is selected.[213]

161. John Kannas, Bovey, Minnesota, is a supervisor on the Balsam Township Board of Supervisors and spoke on behalf of the Township in support of the Blue Route. Mr. Kannas noted that Balsam Township passed a resolution supporting the Blue Route because it is the most direct route and affects the least number of citizens in the community. The Township opposes the Orange Route and Balsam Variation because they would pass through much of the town. Mr. Kannas' own home is located near the Blue Route, but he supports that option, along with the Grass Lake Alignment Modification.[214]

162. Christopher Viere lives in Lino Lakes, Minnesota, and owns property on the Orange Route near Effie, Minnesota. Mr. Viere provided both oral and written comments in opposition to the Orange Route and in support of the Effie Variation. Mr. Viere made six arguments. First, Mr. Viere noted that the area in which the Orange Route would run in Effie and Bigfork would impact the original James Knight homestead, a valued historical and cultural landmark in the area. Second, the Orange Route would fragment one of the largest intact forests in the state, now owned by Itasca County. Third, the line would compromise the beauty of the Wilderness Scenic Byway (Highway 38). Fourth, the line would impact private properties in the area, including his own. Mr. Viere owns two wooded 40-acre parcels in the area that would be fragmented by the lines, thereby devaluing his property. Fifth, the Orange Route would cut through the Beltrami Island State Forest, the Big Bog Recreational Area, Red Lake, and the Kelliher/Northome region. According to Mr. Viere, because of the impacts the Orange Route would have higher costs for the Company, the residents, and the environment than the Blue Route. Sixth, Mr. Viere argued that the Blue Route, in combination with the Effie Variation, would reduce forest fragmentation and minimize impacts to the communities and people in the area.[215]

163. Meloy Mattfield, Bovey, Minnesota, lives near the proposed Orange Route. Mr. Mattfield expressed his opposition to the Orange Route and the Balsam Variation. Mr. Mattfield is particularly concerned with the electromagnetic fields and asked the Commission to select a route that impacts the fewest number of homes and people. Therefore, Mr. Mattfield supports the Blue Route.[216]

164. Carl Gibson is a representative of the Bear Lake Cabin Owners Association. Bear Lake is located near the Blue and Orange Routes. Both routes pass within sight of

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[213] Tr. Vol. 6 at 42-45.
[214] Tr. Vol. 6 at 46-49; BIGFORK HEARING EXHIBIT 254 (Aug. 28, 2015) (eDocket No. 21058-113602-05).
[215] Tr. Vol. 6 at 50-60; BIGFORK HEARING EXHIBIT 255 (Aug. 28, 2015) (eDocket No. 21058-113602-06).
[216] Tr. Vol. 6 at 61-63.

Bear Lake. Therefore, the Association supports the Effie Variation. He further indicated that if the Effie Variation is not selected, the Association opposes the Orange Route but "could live with" selection of the Blue Route.[217]

165. Larry Salmela is an elected supervisor within the Town of Carpenter, Minnesota, and presented comment on behalf of the town. Mr. Salmela expressed the concerns of one resident along the north side of Deer Lake who could not attend the public hearing. Mr. Salmela stated that the resident had concerns regarding the visibility impacts for anyone living on Deer Lake if the Blue Route is selected. Mr. Salmela also indicated that the resident expressed concerns about the potential impact of the proposed Project on aircraft operations that occur on Deer Lake.[218]

166. Daniel Sigfrid, Maple Lake, Minnesota, owns property along the Blue Route along with three other property owners. Mr. Sigfrid provided both oral and written comments. Mr. Sigfrid stated that he and the other three own the only privately-owned property on the Blue Route in the Maple Lake area. Mr. Sigfrid made two main points. First, he asserted that the route permitting process is "dishonest, unfair, done in the dark, unlawful, and totally one-sided" in favor of Minnesota Power. Second, Mr. Sigfrid requested that he and the other three landowners be given an opportunity to include another alternative to the EIS, arguing that they lacked timely notice of the Project. In making his argument, Mr. Sigfrid questioned the need for the Project itself. Third, Mr. Sigfrid noted that he and the other landowners only received notice in early 2015 of the Project, despite the fact that his property is on the Company's preferred Blue Route. Finally, Mr. Sigfrid is opposed to the Blue Route due to its potential impact on the natural environment, particularly the loss of trees that would result from the line. Mr. Sigfrid stated that the Effie area contains a large array of trees and wildlife, including rare and endangered species. As a result, Mr. Sigfrid supports the Effie Variation, which uses an existing utility corridor.[219]

167. Larry Sullivan, Effie, Minnesota, owns property on the Blue Route and is building a residence on the property. Mr. Sullivan has stopped construction until he has more information related to the power line. Mr. Sullivan expressed concern that he did not receive timely notice of the proposed Project. Mr. Sullivan opposes the Blue Route, but supports the Effie Variation.[220]

168. Kenneth Koester lives in the Pickerel Lake and Deer Lake area. Mr. Koester testified in support of the Effie Variation because it would share a corridor with existing power lines.[221]

169. John Johnson, Little Bear Lake, Minnesota, spoke in support of the Effie Variation due to its use of an existing power line corridor. Mr. Johnson emphasized the

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[217] Tr. Vol. 6 at 63-67.
[218] Tr. Vol. 6 at 67-69.
[219] Tr. Vol. 6 at 70-82; BIGFORK HEARING EXHIBIT 258 (Aug. 28, 2015) (eDocket No. 21058-113602-09).
[220] Tr. Vol. 6 at 83-97.
[221] Tr. Vol. 6 at 97-102.

fact that an existing corridor should be used so that the Company can avoid new impacts. Mr. Johnson opposes the Blue and Orange Routes.[222]

170. Bob Tammen, Soudan, Minnesota, has worked on the construction of high voltage lines in Minnesota and warned about the damage that is done by their construction. Mr. Tammen implored the Commission to consider the importance of wetlands to Minnesota' ecology and natural environment. He asked the Commission to avoid impact on wetlands wherever the proposed Project is routed.[223]

171. Mike Bunes, Lawrence Township, lives within 1,000 feet of the Orange Route. Mr. Bunes expressed his opposition to the Orange Route and his support for the Blue Route.[224]

7. Grand Rapids Morning Hearing (August 13, 2015)

172. Fifteen people spoke at the Grand Rapids morning public hearing on August 13, 2015.[225]

173. Mark Mandich is an Itasca County Commissioner who presented a resolution from the Itasca County Board. Mr. Mandich indicated that the Itasca County Board supports the Effie Alternative. Mr. Mandich explained that the Itasca County Board originally passed a resolution stating a preference for the Blue Route as compared to the Orange Route. However, the Board now prefers the Effie Variation over either the Blue or Orange Routes.[226]

174. Garrett Ous, a Land Commissioner for Itasca County, also supported the Effie Variation. He indicated that if the Commission chooses either the Blue Route or the Orange Route, the County prefers the Bass Lake Alignment Modification and the Wilson Lake Alignment Modification.[227]

175. Don Peterson, Brownsdale, Minnesota, owns land in Koochiching County that would be impacted by the Cutfoot Variation and the Orange Route. Mr. Peterson provided both written and oral comments. Mr. Peterson stated that he purchased the property to enjoy the wilderness, which provides a habitat for animals. Mr. Peterson expressed concern about the notice provided to landowners in this action and asserted that outdated (2012) property records were used by the Company to form its service lists. He also noted that the energy being transmitted by the proposed Project will not benefit Minnesota residents because it will be exported out of the state and will primarily benefit Allete shareholders. Therefore, he questioned whether Minnesota residents should bear

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[222] Tr. Vol. 6 at 102-106.
[223] Tr. Vol. 6 at 107-109.
[224] Tr. Vol. 6 at 109-110.
[225] Tr. Vol. 7 at 5-238.
[226] Tr. Vol. 7 at 16-22, 25-27; GRAND RAPIDS HEARING EXHIBIT 263 (Aug. 28, 2015) (eDocket No. 20158-113614-04).
[227] Tr. Vol. 7 at 22-26.

the brunt of the human and environmental impacts of the line. Overall, Mr. Peterson prefers the Blue Route.[228]

176. John "Buddy" Savich provided both written and oral comments. Mr. Savich owns a 431-acre cattle farm in Effie Township, as well as a farm in northeast Itasca Township. He is concerned that the Orange Route would affect his farming operations. Mr. Savich stated that he would pursue the "Buy-the-Farm option" if the Orange Route is selected. Mr. Savich also expressed concern over the timeliness of notice to landowners in the Project area, which prevented him from proposing other variations during the scoping process. Mr. Savich proposed a segment through his farm which would result in a straight, diagonal line, as opposed to a line that contains eight short hops or segments. Mr. Savich urged the Commission to reject the Orange Route and select the Blue Route or Effie Variation.[229]

177. Michael Twite spoke on behalf of Magnetation, LLC, a mining company which operates two plants in Grand Rapids and Taconite. Magnetation provided both written and oral comments at the hearing. Mr. Twite expressed Magnetation's overall support for the Project, but stated Magnetation's opposition to the Balsam Variation because of its impact on one of Magnetation's plants. Mr. Twite noted that the Balsam Variation includes lands that are part of a historic mining area known as the Orwell-Danube Tailings Basin, which includes several stockpiles of iron-bearing materials that are currently under lease to Magnetation and are included in the company's current permit to mine.[230]

178. Quintin Legler spoke on behalf of Blandin Paper Company, which has property that would be impacted by the J2 Segment Option, the Blue Route, the Wilson Lake Alignment, the Effie Variation, and the Orange Route. Mr. Legler explained that Blandin's property is encumbered by a conservation easement held by the MNDNR.[231]

179. Dan Strand owns property in Northome Township and expressed his support for the Blue Route. Mr. Strand indicated that if the Orange Route is selected with the J2 Segment Option, then he prefers the Northome Variation, with the alignment moved to the south to avoid his property. Mr. Strand is also concerned about the prospect of trespassers on his Property along the ROW. He asks that Minnesota Power take action to protect the ROW from trespassers, such as snowmobilers and ATV operators.[232]

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[228] Tr. Vol. 7 at 53-61; GRAND RAPIDS HEARING EXHIBIT 265 (Aug. 28, 2015) (eDocket No. 20158-113614-06).
[229] Tr. Vol. 7 at 62-74; GRAND RAPIDS HEARING EXHIBIT 267 (Aug. 28, 2015) (eDocket No. 20158-113614-08).
[230] Tr. Vol. 7 at 74-79; GRAND RAPIDS HEARING EXHIBIT 269 (Aug. 28, 2015) (eDocket No. 20158-113614-10).
[231] Tr. Vol. 7 at 80-84; GRAND RAPIDS HEARING EXHIBIT 271 (Aug. 28, 2015) (eDocket No. 20158-113615-02).
[232] Tr. Vol. 7 at 86-96; GRAND RAPIDS HEARING EXHIBIT 272 (Aug. 28, 2015) (eDocket No. 20158-113615-03).

180. Richard Libbey of the Izaak Walton League presented detailed comments, both written and oral, in support of the Effie Variation. Mr. Libbey explained that the Blue Route cuts through an area of high biological diversity near Effie and would lead to forest fragmentation. In addition, the Blue Route would impact important bird nesting areas and would pass within one-quarter mile of Bass Lake County Park, as well as pass near a State campground on Larson Lake. Mr. Libbey supports the Effie Variation because it would share a corridor with existing power lines and have fewer new impacts. Moreover, the Effie Variation would avoid an area referred to as the Wasson Lake/Bear-Wolf Peatland Bog. In making his argument, Mr. Libbey highlighted state law, which indicates a preference for using existing corridors. While the Effie Variation is longer than the Blue Route, Mr. Libbey noted that it still involves fewer new impacts because it utilizes an existing utility corridor. In response to Minnesota Power's concerns about weather-related losses and increased cost, Mr. Libbey argued that: (1) the Company represented in the Certificate of Need proceeding that Manitoba Hydro will be paying for 78% of the cost of the Project, thus any increase in cost will be minor for Minnesota Power (approximately $3 million for a line with a useful "life expectancy" of 100 years); and (2) multiple-line unexpected outages due to weather are extremely rare for lines that do not share facilities, and can be prevented with appropriate designs and larger buffers between the lines. Mr. Libbey noted that the Company's own weather data does not support its claims regarding the risks of weather-related outages, but instead demonstrates that there have been no significant icing or wind events in the Effie Variation area since 1950. Mr. Libbey added that by increasing the distance between the Effie Variation and the existing Xcel 500 kV line by 50 or more feet, Minnesota Power will avoid the construction, operational, and maintenance issues that the Company identifies in opposition to the Effie Variation.[233]

181. Rodney Tuomi, Hibbing, Minnesota, provided both written and oral comments in this proceeding. Mr. Tuomi spoke in support of the Project overall, but in opposition to the Dead Man's Pond Alignment Modification. Mr. Tuomi indicated that he has explored the area of this alignment modification for many years and that it includes a waterfall and areas of significant wildlife activity, including migrating birds and moose. Mr. Tuomi advised that the area is a "unique[,] self-enclosed watershed" that very few people even know exists. He is concerned that a power line in this area will greatly disturb this unspoiled area of wilderness and habitat to animals rare in Minnesota, such as moose.[234]

182. Cavour Johnson appeared on behalf of himself and the Hartley Lake Association, and presented both oral and written comments. Mr. Johnson indicated that he met early in the process with Minnesota Power representatives and was pleased that the Company agreed to move the line farther to the east than originally considered. Mr. Johnson stated that his Association supports the Effie Variation with the East Bear Lake Alternative Route Segment in combination because the Effie Variation uses an existing

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[233] Tr. Vol. 7 at 97-112, 134-144, 178-180; GRAND RAPIDS HEARING EXHIBIT 273 (Aug. 28, 2015) (eDocket No. 21058-113615-04).

[234] Tr. Vol. 7 at 114-116; GRAND RAPIDS HEARING EXHIBIT 274 (Aug. 28, 2015) (eDocket No. 21058-113615-05).

utility corridor and has fewer new impacts. In his written comments, Mr. Johnson also supported the Balsam Variation because of its use of a former utility corridor.[235]

183. Raymond Steffen, a Balsam Township Supervisor, spoke in opposition to the Orange Route and Balsam Variation. Mr. Steffen noted that the Balsam Variation would run past the community center, fire hall, chapel, park and recreation area, and the Balsam store. Therefore, Mr. Steffen supports the Blue Route.[236]

184. Kathy Krook, who owns property on Snaptail Lake in Balsam Township, provided both oral and written comment in opposition to the Balsam Variation and Orange Route. According to Ms. Krook, the Balsam Variation and Orange Route would negatively impact her enjoyment of her recreational property and lower its market value. In addition, Ms. Krook is concerned that the noise of the power lines would impact deer hunting, and that the lines themselves may present health risks to humans. As a result of these factors, Ms. Krook supports the Blue Route because it does not affect her property.[237]

185. Catherine McLynn owns a cabin on the Orange Route in an unorganized area north of Effie, Minnesota. Ms. McLynn voiced her support of the Effie Variation. She commented that her family has owned the cabin for 50 years and enjoys the wildlife in the area. Ms. McLynn warned that the Orange Route would disturb the natural environment in the area and fragment the forest there. Accordingly, she supports using the existing corridor that the Effie Variation offers.[238]

186. James Marshall owns two parcels of land along the Orange Route in Effie Township, and has had a hunting camp in the area for several decades. Mr. Marshall opposed the Orange Route and advocated for the Effie Variation. Mr. Marshall is a retired forest manager for the Blandin Company. Based upon his forestry experience, Mr. Marshall urged the Commission to follow existing transmission corridors wherever possible so as to avoid forest fragmentation and new impacts.[239]

187. Rian Reed appeared as a representative of the MNDNR. Mr. Reed clarified that MNDNR has not yet endorsed any routes or alternatives. Mr. Reed added that the MNDNR may, at a later date, weigh in by written comment as to its position on various route alternatives and conditions.[240]

188. Carol Overland of Legalectric, Inc., presented both written and oral comments on behalf of Residents and Ratepayers Against the Not-So-Great Northern Transmission Line (RRANT). Ms. Overland offered the written comments from the MNDNR, MNDOT, and the USFWS into the hearing record. Ms. Overland raised issues

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[235] Tr. Vol. 7 at 116-122; GRAND RAPIDS HEARING EXHIBIT 275 (Aug. 28, 2015) (eDocket No. 21058-113615-06).
[236] Tr. Vol. 7 at 123-126.
[237] Tr. Vol. 7 at 126-129; GRAND RAPIDS HEARING EXHIBIT 277 (Aug. 28, 2015) (eDocket No. 21058-113615-08).
[238] Tr. Vol. 7 at 129-133.
[239] Tr. Vol. 7 at 171-176.
[240] Tr. Vol. 7 at 176-177.

related to landowner notice that were addressed, in full, in the Administrative Law Judge's Order Denying RRANT's Motion to Intervene, Denying Motion to Extend Deadline, and Denying Motion to Supplement Environmental Impact Statement, dated September 2, 2015. Ms. Overland argued that landowners who did not receive notice of the Project in time for them to participate in the scoping and public hearing process should have their properties exempted from the routing alternatives. In her oral comments, Ms. Overland emphasized that the Minnesota legislature has expressed a preference for using existing transmission corridors, when possible. In addition, Ms. Overland questioned whether the Company has addressed "corridor fatigue." Finally, Ms. Overland wanted to ensure that the Work Group's comments have been made part of the hearing record, although she did not offer them into the record.[241]

8. Grand Rapids Evening Hearing (August 13, 2015)

189. Six people provided oral comments at the evening hearing in Grand Rapids, Minnesota, on August 13, 2015, including addition comment by Mr. Libbey [242]

190. Roger Weber, Nashwauk, Minnesota, presented comment in support of the Balsam Variation. Mr. Weber stated that because the Balsam Variation entails a previously-used transmission line corridor, that variation was preferable to creating a new corridor.[243]

191. Keeley Todd, Bovey, Minnesota, presented both written and oral comments. Ms. Todd co-owns property on Snaptail Lake in Balsam Township with Karen Lucachick. Ms. Todd testified in support of the Blue Route and in opposition to the Orange Route and the Balsam Variation. Ms. Todd asserted that the Balsam Variation is not as cost effective as the Blue Route due to its "zig-zagging" route and additional 135 feet of ROW that will need to be cleared. Ms. Todd reminded the Commission of the Work Group's preference for minimizing impacts to private landowners, and noted that the Balsam Variation will reduce the value of private properties and impact more private lands than the Blue Route. In addition, she noted that the Balsam Variation will have negative impacts on Balsam Township public areas, such as the community center, fire department, bible chapel, parsonage, playground, tennis court, and ballfields. With respect to her own property, Ms. Todd asserted that the Balsam Variation would run behind her family's hunting cabin, causing audible noise and impacting their deer hunting activities. Ms. Todd also expressed concern about "induced voltage" and potential health risks to people and animals exposed to the emissions from high voltage transmission lines. Finally, Ms. Todd noted that there are osprey nests in the area of the Balsam Variation that could be disturbed by the construction.[244]

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[241] Tr. Vol. 7 at 184-207; *see* Exhibit 281 (Submission by Overland), Exhibit 282 (Submission by Overland), Exhibit 283 (Submission by Overland).
[242] Tr. Vol. 8 at 4-78.
[243] Tr. Vol. 8 at 35-39.
[244] Tr. Vol. 8 at 39-43; GRAND RAPIDS HEARING EXHIBIT 284 (Aug. 28, 2015) (eDocket No. 20158-113622-07).

192. Karen Lucachick co-owns property with Ms. Todd and submitted similar written and oral comments. Like Ms. Todd, Ms. Lucachick opposes the Balsam Variation and prefers the Blue Route through Balsam. Ms. Lucachick noted that the Balsam Variation would have more impact to Balsam Township than the Orange Route, but she still prefers the Blue Route in this area. Ms. Lucachick also explained that the ROW/corridor created by the power line previously sited along the Balsam Variation has been replanted to include an apple orchard that she maintains. Therefore, Ms. Lucachick stated that the Balsam Variation would cause new impacts to the natural environment in that area. Ms. Lucachick also voiced her concern regarding health risks associated with electromagnetic fields and power line noise.[245]

193. Jerry Adam owns a cabin on Bray Lake in the area of the Balsam Variation. Mr. Adam stated that the Blue Route runs through his property so he opposes that route, as well as the Grass Lake Alignment Modification. Mr. Adam supports the Balsam Variation.[246]

194. Janet Delich owns property in Lawrence Township along the Orange Route, which she uses for hunting and recreation. She also has a residence along the Orange Route. Ms. Delich noted that there is a wildlife sanctuary directly north of her property and that her children live in an area impacted by the Orange Route. She is concerned about potential health risks living close to high voltage transmission lines. In addition, she is concerned about the effect on wildlife, the enjoyment of her property, and property values if a power line were to pass by her residence. Ms. Dellich further noted that the community of Balsam would be negatively impacted by the Orange Route. For these reasons, Ms. Delich opposes the Orange Route.[247]

B. Written Comments Received

195. As set forth in the Notice of Public Hearing issued July 23, 2015, written comments were accepted on the Route Permit Application until 4:30 p.m. on September 1, 2015. Public comments were accepted in a variety of formats: (1) through the Commission's electronic SpeakUp website; (2) filed on the Commission's eDocket system; (3) mailed or emailed to the Commission; and (4) mailed or emailed to the Administrative Law Judge.[248] The Administrative Law Judge provided a copy of all comments she received to the Commission to be included on the SpeakUp website as well as filed in the eDocket system.[249]

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[245] Tr. Vol. 8 at 46-48; GRAND RAPIDS HEARING EXHIBIT 285 (Aug. 28, 2015) (eDocket No. 21058-113622-08).
[246] Tr. Vol. 8 at 44-45.
[247] Tr. Vol. 8 at 48-59.
[248] *See* ORDER CLARIFYING METHODS FOR PUBLIC COMMENT (Aug. 18, 2015) (eDocket No. 20158-113351-01).
[249] *See* PUBLIC COMMENT (Sept. 2, 2015) (eDocket No. 20159-113722-01); PUBLIC COMMENT (Sept. 2, 2015) (eDocket No. 20159-113725-01).

1. *SpeakUp*

196. Ten written comments were submitted using the Commission's SpeakUp website. Of those comments, only one was signed using the commenter's name. The nine other comments were submitted anonymously by "citizens."[250]

197. Two of the anonymous commenters discussed the method for posting public comments, the inability to submit attachments, and the need for an email option that allows for attachments.[251]

198. One commenter addressed a notice issue related to additional new landowners identified by the DOC-EERA after the DEIS meetings.[252]

199. Four anonymous commenters opposed the C2 Segment Option due to its close proximity to a private airstrip. According to the commenters, this airstrip is the only location housing an FAA-certified inspector and FAA-certified mechanic in the area. The commenters noted that the location of the airstrip requires pilots to operate at low altitudes and that power lines in the area would impede both take-offs and landings at the airstrip. The commenters also stated that the C2 Segment Option would present a hazard to pilots flying into and out of the airstrip.[253]

200. An eighth anonymous commenter is a landowner in Deiter Township. The commenter voiced his/her opposition to both the Blue Route and the Roseau Lake WMA Variation 1, and requested that the line follow existing transmission corridors in that area.[254]

201. The ninth anonymous commenter commended Minnesota Power for using existing transmission line corridors in many areas of the Project. The commenter expressed concern about the Beltrami North Variation 1 and 2. The commenter noted that while these variations attempt to keep power lines off of USFWS lands, they cause impacts to the same type of plant communities, wetlands, and animal habits located in the USFWS lands, but are longer in distance, and so have a greater impact on the environment. Accordingly, the commenter supports the Blue Route.[255]

202. The final comment on the SpeakUp system website was submitted by Russ and Faith Galatz of Little Bear Lake, Minnesota. The Galatzes wrote in support of the Effie Variation, noting that the Effie Variation will follow an existing transmission corridor and thereby avoid new impacts to areas of undisturbed wilderness, wildlife, and natural beauty.[256]

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[250] It is unclear whether the comments were submitted anonymously or if the SpeakUp system merely failed to provide identifying information for the commenters.
[251] PUBLIC COMMENT at 1-2 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[252] PUBLIC COMMENT at 1 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[253] PUBLIC COMMENT at 2-3 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[254] PUBLIC COMMENT at 2 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[255] PUBLIC COMMENT at 4 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[256] PUBLIC COMMENT at 2-3 (Sept. 2, 2015) (eDocket No. 20159-113722-01).

2. *Additional Written Comments Received*

203. Additional written comments were submitted by mail or email to the Commission or the Administrative Law Judge. Those comments are summarized below.

204. Todd Lund, Roseau, Minnesota, wrote to oppose the Beltrami North Variations 1 and 2. Mr. Lund argued that these variations would negatively impact farming operations in the area by impeding the use of large machinery, crop spraying by land, and aerial spraying. Mr. Lund advocated for the Blue Route, which is located along more "unfarmed and uninhabited" land.[257]

205. Jeff and Laura Hanzal, Horsehead Lake, Minnesota, commented in opposition to the Blue Route. The Hanzals argued that the Blue Route running north of Effie to Balsam Township will have negative impacts on Horsehead Lake, as well as "countless" other lakes, streams, and rivers along the route. According to the Hanzals, the Blue Route would run through natural, undisturbed wetland and animal habitats that are home to protected animal and plant species. The Hanzals emphasized that the undisturbed land, unfragmented forest, and natural environment in this area is "priceless," not only to them but to the people of the state of Minnesota. The Hanzals urged the Commission to select the Effie Variation to avoid the disturbances that the Blue Route would cause in this area.[258]

206. John and Beverly Johnson, Little Bear Lake, Minnesota, advocated for the Effie Variation, arguing that it "would preserve more of the natural beauty that so many [landowners] love about…Northern Minnesota."[259]

207. Richard Myers, Warroad, Minnesota, commented that he attempted to become a member of the DOC-EERA's Work Group, but was "rejected." Mr. Myers made several points in his comments. First, he suggested that the Company and the MNDNR pursue a route that follows the existing 500 kV line despite the fact that it is located in a SNA. Second, he argued that the Orange Route presents fewer ecological impacts, has "less public interference," less "agricultural land interference," fewer impacts on state conservation lands and state forests, crosses fewer acres with mineral leases, and affects fewer historical sites. Third, Mr. Myers asserted that, even if power lines are placed on public property, they devalue surrounding private property. Fourth, Mr. Myers opposed the Beltrami North Variations 1, 2, and 3, and proposed two other variations. Fifth, Mr. Myer noted concerns about the effect of the power lines on his pacemaker if they are placed within close proximity to his home. Finally, Mr. Myers emphasized that the final route selection should not be based on cost or ease of access or maintenance, but upon environmental concerns and human impacts.[260]

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[257] PUBLIC COMMENT at 6-7 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[258] PUBLIC COMMENT at 8 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[259] PUBLIC COMMENT at 9 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[260] PUBLIC COMMENT at 10-12 (Sept. 2, 2015) (eDocket No. 20159-113722-01).

208. John Lund, Roseau, Minnesota, owns a farm with Todd Lund (commenter above) along the proposed Beltrami North Variation 1. Mr. Lund noted that the transmission lines would make farming his land "much more difficult" because it is hard to maneuver large farm equipment around powers lines and use ground sprayers/irrigation. Mr. Lund opposes the Beltrami North Variation 1 and supports the Blue Route instead.[261]

209. Ronald Johnson, Edmonds, Washington, submitted a written comment opposing the Blue Route, which would cross through land he owns in Balsam Township. Mr. Johnson noted that he has invested his life savings into the property and intends to retire there someday due to its natural, undisturbed beauty. Mr. Johnson advised the Commission that his 120-acre parcel is an original Finnish homestead with historical, archeological, anthropological, and agricultural value. In addition, the area that surrounds his property has been found to contain Native American artifacts. Mr. Johnson asserted that any disruption of his property by a power line would render his property "worthless" to him. Therefore, he implored the Commission to select a different route alternative in the Balsam area.[262]

210. James and Patricia Schaffran own property on Horsehead Lake in Bigfork, Minnesota. The Schaffrans wrote to oppose the Blue Route from Effie to Balsam, Minnesota. According to the Schaffrans, the Blue Route in this area will impact at least 21, if not more, lakes in the area and will greatly reduce property values there. In addition, the line would run through 50 miles of continuous forest and wetlands, which provide natural habitats for wolves, moose, and other wildlife. The Schaffrans are concerned that many landowners in the area are seasonal residents and may not be receiving notice of the Project in sufficient time to submit comments or are unable to attend the public hearings and meetings. The Schraffrans urged the Commission to select the Effie Variation.[263]

211. Several individuals submitted identical comment letters. The individuals are: Susan Lisell, Darryll Dahlquist, Richard Stacy, Karen Stacy, Willard Comstock, Greg Grahn, Michael Grahn, Gerry Grahn, Blair Comstock, Gary and Ione Olson, all of Roseau, Minnesota. In the letters, the commenters expressed their "strong support" for the Blue/Orange Route and Proposed Border Crossing. The commenters also opposed all alternatives, variations, and border crossing options proposed by the MNDNR and USFWS, particularly the Roseau Lake WMA Variations 1 and 2. The writers noted that the Roseau Lake WMA Variations will cause "significant negative impacts" on private and agricultural properties, and will interfere with the operation of the Roseau Public Airport. In addition, the variations will "unnecessarily" increase the length of the power line. The commenters warned that a power company's easements over agricultural land would put land at risk for the growth of harmful and noxious weeks. Finally, the group asserted that the variations proposed by the MNDNR and USFWS "disregard and effectively negate over three years of good faith dialogue and participation by Roseau County officials and

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[261] PUBLIC COMMENT at 17 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[262] PUBLIC COMMENT at 18-19 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[263] PUBLIC COMMENT at 23 (Sept. 2, 2015) (eDocket No. 20159-113722-01).

its residents" who have been working with Minnesota Power to develop a line that will have the least impact to residents, property owners, and agricultural producers. The writers argued that the MNDNR and USFWS did not involve the public when they proposed the variations and that the agencies failed to take into account the significant private property interests affected, as well as the preferences of the residents in the area.[264]

212. Norman Kveen, Brookfield, Wisconsin, submitted written comments in opposition to the Roseau Lake WMA Variations 1 and 2. Mr. Kveen's family has owned farmland in this area for over 100 years. Mr. Kveen expressed concern about the fact that crop sprayers will not be able to service the fields in this area if high voltage transmission lines are in the way. Mr. Kveen is also concerned about power line noise and the "eyesore" that the power lines will be to this natural area. Mr. Kveen advocated for the Blue/Orange Route through Roseau.[265]

213. Larry Sullivan owns property north of Effie, Minnesota, along the proposed Blue Route. In 2012, Mr. Sullivan obtained a building permit to build a new home on his land. At that time, Mr. Sullivan had no knowledge of the Project. He is now concerned that the power lines will significantly affect not only his property value, but also his use and enjoyment of the land. Additionally, Mr. Sullivan voiced his concern about the lack of notice he received about the Project and its potential impact on his home. Mr. Sullivan suggested that the Blue Route be shifted one mile south to avoid his home and those of other property owners.[266]

214. Dennis Strandlund, Roseau, Minnesota, submitted a written comment in opposition to the Roseau Lake WMA Variations 1 and 2, due to their impact on farming operations in the area. Mr. Strandlund asked the Commission to select the Blue/Orange Route through Roseau instead.[267]

215. Stan Brown owns 40-acres of land near the proposed C2 Segment Option in Koochiching County. Mr. Brown stated that his property already contains a power line and that he should not be forced to bear the brunt of another one. Mr. Brown is also concerned about the ability of small planes to use an airstrip in the area if power lines are constructed. Therefore, Mr. Brown opposes the C2 Segment Option and advocates for selection of the Blue Route.[268]

216. Charlotte Neigh, Bovey, Minnesota, submitted written comments regarding conditions to include related to ROW maintenance in any Route Permit issued in this case. Ms. Neigh explained that she owns property where power lines are located and has given an easement to Minnesota Power to enter her property to maintain the lines

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[264] PUBLIC COMMENT at 26-27, 30-31, 39-42 (Sept. 2, 2015) (eDocket No. 20159-113722-01); PUBLIC COMMENT at 6-7, 22-23, 24-25, 27-28, 121-122 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[265] PUBLIC COMMENT at 35-36 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[266] PUBLIC COMMENT at 37-38 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[267] PUBLIC COMMENT at 44 (Sept. 2, 2015) (eDocket No. 20159-113722-01).
[268] PUBLIC COMMENT at 47 (Sept. 2, 2015) (eDocket No. 20159-113722-01).

within the ROW. Ms. Neigh stated that although the easement agreement is specific as to whether the Company can trim trees outside the ROW, the tree trimmers are often unaware of these specifications and trim trees in violation of the easement. She suggested that any Route Permit issued in this case require the Company to give landowners reasonable notice of any maintenance that will occur to the lines; advise landowners if trees outside the ROW will be cut before they are cut; and place limits on the amount of vegetation removal that can occur outside the ROW.[269]

217. In addition to her timely comments, Ms. Neigh submitted comments after the close of the comment period in response to Minnesota Power's legal briefs. Ms. Neigh requested that the conditions on the Route Permit include conditions on the maintenance of the lines, as well as the construction. She also suggested that the Commission require Minnesota Power to provide the Department of Commerce's Rights-of-Way and Easements for Energy Facility Construction and Operation Fact sheet to all affected landowners. Ms. Neigh further requested that the Commission include all of its standard conditions in any Route Permit issued in this case. Ms. Neigh urged the Commission to include conditions in route permits that protect landowners from abuses by utility companies, not only during construction but as a result of maintenance and repair of lines.[270]

218. Arthur Krahn commented about the benefits of power lines in forested areas due to the open areas they create and the landmarks they become for people who may otherwise get lost. Mr. Krahn opposes the Beltrami North Variations 1 through 5 due to their proximity to residences and agricultural property.[271]

219. Blair Comstock, Kyle Comstock, and Joel Comstock submitted individual written comments in opposition to the Roseau Lake Variations 1 and 2, and in support of the Blue Route. Blair Comstock also voiced his concern about the variations impacts on migratory birds and eagles in the area.[272]

220. Aaron Nelson, Roseau, Minnesota, wrote in opposition to the Roseau Lake WMA Variations 1 and 2. Mr. Nelson noted that his property is incorrectly identified in the DEIS as "nonresidential," when it is residential. Mr. Nelson asked the Commission to select a route that has less impact on residences.[273]

221. Celeste Kawulok, Duluth, Minnesota, owns property in Itasca County west of Little Sand Lake and near the Goshawk Trail. Ms. Kawulok noted that the Orange Route would impact her property and other residences, and would disrupt the goshawk nesting practices that occur in the area. Ms. Kawulok supports the Blue Route, along with the Effie Variation.[274]

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[269] PUBLIC COMMENT at 1-4 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[270] PUBLIC COMMENT at 1-5 (Nov. 2, 2015) (eDocket No. 201511-115341-01).
[271] PUBLIC COMMENT 6 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[272] PUBLIC COMMENT at 43-46 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[273] PUBLIC COMMENT at 47-48 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[274] PUBLIC COMMENT at 73 (Sept. 2, 2015) (eDocket No. 20159-113725-01).

222. Shirley Loegering submitted a Resolution in Favor of the Effie Variation passed by the Izaak Walton League, Grand Rapids Wes Libbey Chapter. The Resolution supports the Effie Variation for the following reasons: (1) it minimizes forest fragmentation resulting in fewer environmental and visual impacts; (2) it avoids impacts to the Chippewa Plains Important Bird Area, the Itasca County Bass Lake Park, the Larson Lake State Campground, and the Bear-Wolf-Wasson Lake site of high biological diversity; (3) it has fewer visual impacts to the Taconite State Trail and Bear Lake and Day Brook snowmobile trails; (4) it minimizes the spread of invasive species into new environments; and (5) it reduces adverse noise impacts during construction, maintenance, and operation in a "relatively pristine area." The Izaac Walton League further noted that Minnesota Power has the capability to engineer facilities to parallel an existing utility corridor; and that Manitoba Hydro is funding approximately 78 percent of the cost of construction, such that the additional cost of the Effie Variation to Minnesota ratepayers would be relatively nominal in exchange for the environmental benefits gained for the state.[275]

223. The International Union of Operating Engineers Local 49 (Union) submitted written comment in support of the Project and, in particular, the Blue/Orange Route and Proposed Border Crossing. The Union noted that the Project will provide "hundreds of construction jobs" in northern Minnesota and facilitate the use of cleaner, renewable power. The Union further noted that Minnesota Power's proposed Blue Route was developed over a three-year period with the involvement of landowners and local governmental units. The Union opposes the alternatives proposed by the MNDNR and USFWS, arguing that those alternatives "negate" the three years of coordination by Minnesota Power and stakeholders.[276]

224. Gordon Hannon, general counsel with Manitoba Justice (a governmental agency similar to a state attorney general in the United States), submitted written comments to explain Canada's border crossing and utility route permitting process. According to the comments, Manitoba Hydro has obtained approval to proceed with the Project in Canada. This approval was based upon the Proposed Border Crossing location and no other. If a new border crossing is now selected, Manitoba Hydro will need to file a new or amended application, which would require additional studies and regulatory processes. Manitoba Hydro advised that such studies and regulatory processes could not be completed in time for the Project to meet the 2020 in-service date. Accordingly, selection of a border crossing location other than the Proposed Border Crossing could place the entire Project in jeopardy.[277]

225. James Johnson, Roosevelt, Minnesota, is "strongly opposed" to the Cedar Bend WMA Variation. Mr. Johnson suggested that the variation be moved north to avoid his property so that the line could parallel an existing power line crossing state-owned

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[275] PUBLIC COMMENT at 12 (Oct. 1, 2015) (eDocket No. 201510-114494-01).
[276] PUBLIC COMMENT at 104-05 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[277] COMMENT BY MANITOBA JUSTICE (June 5, 2015) (eDocket No. 20156-111176-01).

property. In the alternative, Mr. Johnson proposed a "land trade" of his parcel in exchange for state-owned property.[278]

226. John and Marty Licke, Bigfork, Minnesota, submitted written comments in support of the Effie Variation and East Bear Lake Alternative Route Segment. The Lickes noted that these alternatives minimize the negative impact on the forest and foresting industry, which are central to the Bigfork community, industry, residents, and economy.[279]

227. Bill and Terry Cox, Cook, Minnesota, own property on Little Bear Lake. The Coxes note that they submitted a 277-signature petition to the Commission in 2013 recommending an alternative to the Orange Route that would avoid Little Bear Lake, as well as other nearby lakes. The Effie Variation was identified in the DEIS and addresses the concerns noted in the petition presented by the Coxes. The Coxes expressed their support for the Effie Variation and asked the Commission to reject the Blue Route in the Effie Variation Area. The Coxes state that the Effie Variation will have the "smallest impact on habitat, recreational areas, and property value of landowners" compared to the Blue and Orange Routes in the area.[280]

228. Laura Imax, St. Paul, Minnesota, submitted general comments related to the adequacy of the environmental review of the Project. Ms. Imax urged the Commission to select a route that best preserves Minnesota's natural resources. She also identified an alternative route that she asked the Commission to consider. Ms. Imax asserted that the DEIS failed to explain that the Company's proposed Orange and Blue Routes are designed to avoid farmland and privately-held property at the expense of state-owned nature reserves.[281]

229. Jason Braaten, Greg Braaten, and Maynard Braaten submitted a letter in support of the Blue/Orange Route and the Proposed Border Crossing. The Braatens opposed all of the alternative routes and border crossings proposed by the MNDNR and USFWS in Roseau County, arguing that these variations "negate over three years of good faith participation of Roseau County residents" and Minnesota Power in developing route alternatives. The Braatens noted that the variations proposed by the MNDNR and USFWS were done without input from Roseau County officials or residents, and have more adverse impacts to landowners and agriculture than the Blue and Orange Routes.[282]

230. State Senators Rod Skoe and Ann Rest submitted written comment in support of the proposed Blue/Orange Route, along with the Proposed Border Crossing. The senators noted that the Project has positive impacts to the state, including increased

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[278] PUBLIC COMMENT at 178-79 (Sept. 2, 2015) (eDocket No. 20159-113725-01).
[279] BIGFORK HEARING EXHIBIT 252 (Aug. 28, 2015) (eDocket No. 20158-113602-03).
[280] PUBLIC COMMENT at 11 (Oct. 1, 2015) (eDocket No. 201510-114494-01). The comment was untimely. However, the Administrative Law Judge includes it to ensure all public comments are documented.
[281] PUBLIC COMMENT at 1-3 (Jan. 22, 2015) (eDocket No. 20151-106291-01). The comment was submitted to the Administrative Law Judge prior to the opening of the public comment period, but is included to ensure that all public comments are documented.
[282] Ex. 48 (Letter from Braatens).

property tax revenue and the transportation of clean and renewable energy. The senators urged the Commission to consider that the proposed Orange and Blue Routes were the result of three years of coordination between the Company, potentially impacted landowners, and communities in the area. The senators asserted that the alternatives proposed by the MNDNR and USFWS ignore the interests of the landowners in the area, and will have "significantly more impacts to private landowners and farmers, while unnecessarily increasing the length of the line." [283]

231. State Senator LeRoy Stumpf sent a letter in support of the proposed Blue/Orange Route and the Proposed Border Crossing. The content of Sen. Stumpf's letter was the same as the letter submitted by Senators Skoe and Rest.[284]

232. United States Senators Amy Klobuchar and Al Franken, and United States Representatives Collin Peterson and Rick Nolan submitted a joint letter to the U.S. Department of Energy in support of the Project and the Proposed Border Crossing. These elected officials noted that the Proposed Border Crossing was the "result of years of meetings with various federal, state and local entities and close coordination with Manitoba Hydro to find a crossing location amendable to all parties on both sides of the international border." They urged the DOE to "take into account the collaborative outreach efforts that resulted in a consensus United States-Canada border crossing location" for the GNTL.[285]

233. Manitoba Hydro submitted a letter into the record which: (1) briefly outlined Manitoba Hydro's efforts in developing the transmission line route on the Canadian side; (2) identified the Proposed Border Crossing as the only viable border crossing location for Manitoba Hydro; and (3) contained a statement that any changes to the Proposed Border Crossing would jeopardize the commitment to a June 2020 in-service date and the proposed Project overall.[286]

234. Numerous communities within the Project area submitted resolutions in favor of particular routes and border crossing alternatives. The Red Lake Band of Chippewa Indians submitted Resolution No. 172-15 in support of the Blue/Orange Route and the Proposed Border Crossing.[287] Lake of the Woods County submitted Resolution No. 15-06-08 in support of the Orange Route.[288] The Koochiching County Board of Commissioners submitted Resolution 2015/06-28 in support of either the Blue or Orange Route, with a preference for the Blue Route, and in opposition to all other segment variations and alignment options identified in the DEIS.[289] The City of International Falls presented Resolution No. 39-15 which supports the Blue Route through Koochiching County and opposes all alternatives proposed "by agencies of government and their personnel that [sic] do not reside in Koochiching County and understand [International

[283] Ex. 50 (Letter from Senators Skoe and Rest).
[284] Ex. 52 (Letter from Senator Stump).
[285] Ex. 81 (Letter from Senators Klobuchar and Franken, Representatives Peterson and Nolan).
[286] Ex. 61 (Letter from Manitoba Hydro).
[287] Ex. 82 (Red Lake Band Resolution).
[288] Ex. 57 (Lake of the Woods County Resolution).
[289] Ex. 56 (Koochiching County Resolution)

Falls'] needs and preferences."[290] The Town of Falun, Dieter Township, Stokes Township, Ross Township, Stafford Township, and Roseau County all submitted resolutions in support of the Blue/Orange Route and Proposed Border Crossing.[291]

235. Three utility companies that operate transmission lines in Northern Minnesota also submitted comments. Minnkota Power Cooperative, Inc. (Minnkota) owns a 230 kV transmission line that crosses the international border in Roseau County and proceeds through Lake of the Woods and Koochiching Counties to a substation near Little Fork, Minnesota. Minnkota noted that the Effie Variation and the East Bear Lake Variation would place the GNTL in the same corridor as a Minnesota Power-owned 230 kV line, as well as an Xcel Energy 500 kV line. Minnkota asserted that adding a third line in the corridor could possibly "result in an elevated risk of adverse system reliability impacts."[292]

236. Great River Energy (GRE) serves electric load in northern Itasca County through the Ortman Substation via the Little Fork-Shannon 230 kV line. GRE asserted that the Effie Variation and the East Bear Lake Variation would place the GNTL in the same corridor as the Little Fork-Shannon 230 KV line, as well as Xcel Energy's 500 kV line. GRE is concerned about the possibility of severe weather that could impact reliability in the area if it were to hit the utility corridor and affect all three lines in the area.[293]

237. Xcel Energy (Xcel) explained that under the proposed Effie and East Bear Lake Variations, Xcel's 500 kV line would be located between Minnesota Power's proposed 500 kV line and Minnesota Power's existing 230 kV line. According to Xcel Energy, this configuration could make it slightly more difficult for Xcel to inspect its line by helicopter. In addition, it would require Xcel to take "extra precaution" when performing maintenance on the line to protect its crews and equipment.[294]

IV. LEGAL CONSIDERATIONS FOR A ROUTE PERMIT

238. Minnesota Statutes section 216E.03, subdivision 7 and Minnesota Rules part 7850.4100 set forth considerations and factors which the Commission shall use to make its decision on whether to issue a route permit and which route shall be approved.

239. The Minnesota Power Plant Siting Act (PPSA), Minnesota Statutes chapter 216E (2014), requires that route permit determinations "be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure."[295]

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[290] Ex. 54 (Letter from City of International Falls).
[291] Ex. 55 (Falun Township Resolution); Ex. 47 (Falun Township Resolution); Ex. 49 (Dieter Township Resolution); Ex. 46 (Stokes Township Resolution); Ex. 45 (Ross Township Resolution); Ex. 43 (Stafford Township Resolution); Ex. 35 (Roseau County Resolution).
[292] PUBLIC COMMENT at 10 (Oct.1, 2015) (eDocket No. 201510-114494-01).
[293] PUBLIC COMMENT at 8-9 (Oct. 1, 2015) (eDocket No. 201510-114494-01).
[294] COMMENT BY XCEL ENERGY (Sept. 1, 2015) (eDocket No. 20159-113672-01).
[295] Minn. Stat. § 216E.03, subd. 7.

240. To facilitate the study, research, evaluation, and designation of routes, the Commission must be guided by the following considerations:

(1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values . . .;

(2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

(3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

…

(5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;

(7) evaluation of alternatives to the applicant's proposed site or route. . . ;

(8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;

(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

(10) evaluation of the future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;

(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.[296]

241. With respect to the use of existing utility corridors, the law provides that the Commission "must make specific findings that it has considered locating a route for a high-voltage transmission line on an existing high-voltage transmission route and the use of parallel existing highway right-of-way and, to the extent those are not used for the route, the commission must state the reasons."[297]

242. The Commission's rules further specify the factors the Commission must consider in selecting a route. These factors include:

A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;

B. effects on public health and safety;

C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;

D. effects on archaeological and historic resources;

E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;

F. effects on rare and unique natural resources;

G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;

H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;

. . .

J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;

K. electrical system reliability;

L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;

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[296] *Id.*
[297] *Id.*

M. adverse human and natural environmental effects which cannot be avoided; and

N. irreversible and irretrievable commitments of resources.[298]

V. APPLICATION OF THE ROUTING FACTORS AND CRITERIA

243. Route permits issued by the Commission include a permitted route and anticipated alignment, as well as conditions specifying construction and operation standards.[299] The Commission is charged with selecting routes that minimize adverse human and environmental impacts, while ensuring continuing electric power system reliability and integrity.[300]

244. In evaluating routing options, the Commission must often make its determination among competing interests; weighing the various factors to be considered against each other and, on balance, selecting the routing option(s) that best satisfy the goals specified in statute.

245. The analysis in the FEIS addresses each of the factors to be considered under Minn. R. 7850.4100 by evaluating the potential impacts to individual components or "elements" of each factor. For example, "effects on human settlement" are assessed by evaluating potential impacts to 12 different components of human settlement, including displacement, noise, property values, air quality, electronic interference, transportation and public services, environmental justice, socioeconomics, aesthetics, land use compatibility, cultural values, and recreation and tourism.[301] Similarly, "effects on the natural environment" are assessed by evaluating potential impacts to three distinct components of the natural environment, including water resources, vegetation, and wildlife.[302]

246. For each element, the FEIS selects a number of "indicators" or objective data sources that provide an indication of the potential impacts. For example, "proximity to residences" is used as one indicator of potential aesthetic impacts that residents may experience. Similarly, the evaluation of water resources relies on data about the acres of wetland impacted by a proposed route.[303]

247. The affected environment and potential impacts are analyzed in the FEIS for each resource within given spatial bounds or "region of influence" (ROI). The ROI for each resource is the geographic area within which the proposed Project or alternatives may exert some influence; it is used in the FEIS as the basis for assessing the potential

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[298] Minn. R. 7850.4100 (2015).
[299] Ex. 119, Vol. 1, Pt. 2 of 14, at 7 (Final Environmental Impact Statement).
[300] Minn. Stat. § 216E.03, subd. 7 (2014); Minn. R. 7850.4100 (2015).
[301] Ex. 119, Vol. 1, Pt. 2 of 14, at 7 (Final Environmental Impact Statement).
[302] Ex. 119, Vol. 1, Pt. 2 of 14, at 7 (Final Environmental Impact Statement).
[303] Ex. 119, Vol. 1, Pt. 2 of 14, at 7 (Final Environmental Impact Statement).

impacts to each resource. The spatial area for each resource's ROI may be different and each is described independently within the FEIS.[304]

248. The FEIS divided and described those impacts that do not vary by geographic section and which are not expected to be significant separately from those impacts that either vary by geographic section or which are potentially significant.[305]

A. Impacts Common to All Routes and Alternatives

249. According to the DOC-EERA, the following factors are anticipated to be similarly impacted by, or not significant in, all route alternatives, as detailed in the FEIS:

- Human Settlement/Displacement
- Human Settlement/Noise
- Human Settlement/Air Quality
- Human Settlement/Property Values
- Human Settlement/Electronic Interference
- Human Settlement/Transportation and Public Services
- Human Settlement/Environmental Justice
- Human Settlement/Socioeconomics
- Human Settlement/Recreation and Tourism
- Public Health and Safety/Electric and Magnetic Fields
- Public Health and Safety/Implantable Medical Devices
- Public Health and Safety/Stray Voltage
- Public Health and Safety/Induced Voltage
- Public Health and Safety/Intentional Destructive Acts
- Public Health and Safety/Environmental Contamination
- Public Health and Safety/Worker Health and Safety[306]

B. Impacts Variable Among Route Alternatives

250. The following factors were found by the DOC-EERA to be distinguishable among the various route alternatives, each of which are examined in detail below:

- Human Settlement – Aesthetics
- Human Settlement – Land Use Compatibility
- Land-Based Economies – Agriculture, Forestry, Mining and Mineral Resources
- Archaeological and Historic Architectural Resources
- Natural Environment – Water Resources
- Natural Environment – Vegetation

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[304] Ex. 119, Vol. 1, Pt. 4 of 14, at 85 (Final Environmental Impact Statement).
[305] Ex. 119, Vol. 1, Pt. 4 of 14, at 85 (Final Environmental Impact Statement).
[306] Ex. 119, Vol. 1, Pt. 4 of 14, at 86-143 (Final Environmental Impact Statement).

- Natural Environment – Wildlife
- Rare and Unique Natural Resources – Federal and State Listed Species
- Rare and Unique Natural Resources – State Rare Communities
- Use or Paralleling of Existing Rights-of-Way
- Electrical System Reliability
- Cost of Constructing, Operating, and Maintaining Facilities[307]

251. For the Human Settlement - Aesthetics factor, the indicator selected by the DOC-EERA is the proximity to residences measured in feet to the anticipated alignment; specifically, the number of residences within 0 to 500 feet; 0 to 1,000 feet; and 0 to 1,500 feet from the anticipated line alignment.[308]

252. For the Human Settlement - Land Use Compatibility factor, the indicator selected by the DOC-EERA is the amount of land in the ROW of the route alternative and the type of land (privately-owned land versus publicly-owned land) in the ROW, measured in acres.[309]

253. For the Land-Based Economies factor, the indicators selected by the DOC-EERA include: (1) proximity to farmland (total acres of farmland in the ROW, including acres of prime farmland, farmland of statewide importance, and prime farmland, if drained, in the ROW); (2) proximity to forest land (acres of state forest land in the ROW); and (3) proximity to state mining lease lands (active and/or expired or terminated lease lands measured in acres) and aggregate resources (number of resources in the ROW).[310]

254. For the Archaeological and Historic Architectural Resources factor, the indicators selected by the DOC-EERA are: (1) the proximity of the line to archaeological sites (measured in the number of archaeological resources within 0 to 100 feet and 0 to 1,500 feet from the ROW); and (2) the proximity of the line to historic architectural sites (measured in the number of historic architectural resources within 0 to 100 feet; 0 to 1,500 feet; and 0 to 1 mile from the ROW).[311]

255. The indicators selected by the DOC-EERA for the Natural Environment – Water Resources factor include: (1) proximity to watercourses and waterbodies; (2) proximity to floodplains; and (3) proximity to wetlands. The proximity to watercourses and waterbodies is measured by the total number of waterbody crossings in the ROW, the number of Public Water Inventory (PWI) crossings, the number of non-PWI crossings, and the number of trout stream crossings. The proximity to floodplains is measured by

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[307] Ex. 119, Vol. 1, Pt. 4 of 14, at 86-143 (Final Environmental Impact Statement).
[308] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 143-44 (Final Environmental Impact Statement).
[309] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 146-48 (Final Environmental Impact Statement).
[310] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 151-55 (Final Environmental Impact Statement).
[311] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 156-59 (Final Environmental Impact Statement).

the total acres of floodplain in the ROW, the number of acres in a Zone A floodplain, and the number of acres in a Zone B floodplain. The proximity to wetlands is measured by the number of acres of Palustrine Scrub-Scrub (PSS) Wetland and Palustrine Forested Wetlands (PFO) in the ROW (thereby resulting in wetland-type conversion), and the acres of total wetlands in the ROW too large to span a line across (thereby resulting in structures being placed in the wetland).[312]

256. The indicator selected by the DOC-EERA for the Natural Environment – Vegetation factor is the type of vegetative cover in the area, and, for this Project specifically, the number of acres of forested land cover in the ROW for each alternative.[313]

257. For the Natural Environment - Wildlife factor, the indicators selected by the DOC-EERA are: (1) the proximity of the alternative (measured by acres in the ROW) to wildlife resources (such as WMAs, Grassland Bird Conservation Areas, Important Bird Areas); (2) the proximity to shallow lakes (measured in the number of shallow lakes in the ROW); and (3) the proximity to Gray Owl Management Areas (measured in the number of management areas within 0 to 1,500 feet of the line).[314]

258. The indicators selected by the DOC-EERA for the Rare and Unique Natural Resources – Federal and State Listed Species factor are: (1) the proximity of federal and state-listed species measured by the number of Natural Heritage Information System database (NHIS) records within one mile of the line; (2) the number of state-listed species, measured by the total number of state threatened, endangered, and special concern NHIS records within one mile of the line; and (3) the number of state threatened and endangered NHIS records within one mile of the line.[315]

259. The indicators selected by the DOC-EERA for the Rare and Unique Natural Resources – State Rare Communities factor are: (1) proximity to Scientific and Natural Areas (SNAs) (measured by the number of SNAs within 1,500 feet of the line) and SNA Watershed Protection Areas (WPAs) (measured in acres of SNA within the ROW); (2) proximity to Minnesota Biological Survey (MBS) Sites of Biodiversity Significance (measured in total acres of sites within the ROW); (3) proximity to MBS native plant communities (measured in total acres within the ROW); and (4) proximity to MnDNR High Conservation Value Forest and MnDNR Ecologically Important Lowland Conifer Areas (measured in acres within the ROW).[316]

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[312] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 162-67 (Final Environmental Impact Statement).
[313] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 167-69 (Final Environmental Impact Statement).
[314] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 169-72 (Final Environmental Impact Statement).
[315] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 172-74 (Final Environmental Impact Statement).
[316] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 174-79 (Final Environmental Impact Statement).

260. For the Use or Paralleling of Existing Rights-of-Way factor, the indicator selected by the DOC-EERA is the proximity of the line to existing HVTLs, roadways, and trails, expressed in the percent of total length of the line which could potentially follow an existing HVTL, roadway, or trail corridor (all of which are referred to herein as a "corridor").[317]

261. The indicator for electrical system reliability is the proximity to two or more HVTLs, measured by the percentage of the total length of the line that would result in "triple paralleling". This is because "triple paralleling" is deemed to have the potential to reduce reliability where there is a catastrophic event in the area of the paralleled lines.[318]

262. The indicator for the costs of constructing, operating, and maintaining the facility factor is the total estimated construction cost of the route alternative or segment.[319]

263. Each of these factors are discussed below, using the indicators or measurements identified by the DOC-EERA in the FEIS.

C. Route Specific Impacts – West Section

264. The West Section contains five variation areas: the Border Crossing Variation Area; the Roseau Lake WMA Variation Area; the Cedar Bend WMA Variation Area; the Beltrami North Variation Area; and the Beltrami North Central Variation Area (FEIS MAP 4-2).

265. Each variation area in the West Section contain two or more route variations or alternatives to be considered.

266. The Border Crossing Variation Area contains five route alternatives, each of which have a separate border crossing location: the Blue/Orange Route (which begins at the Proposed Border Crossing location); the Pine Creek Variation; the Highway 310 Variation; the 500 kV Variation; and the 230 kV Variation (FEIS Map 4-3).

267. The Roseau Lake WMA Variation Area contains three route alternatives: the combined Blue/Orange Route; the Roseau Lake WMA Variation 1; and the Roseau Lake Variation 2 (FEIS Map 4-4).

268. The Cedar Bend WMA Variation Area contains two route alternatives: the combined Blue/Orange Route and the Cedar Bend Variation (FEIS Map 4-5).

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[317] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 179-80 (Final Environmental Impact Statement).
[318] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 180-83 (Final Environmental Impact Statement).
[319] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 4 of 14, at 183-84 (Final Environmental Impact Statement).

269. The Beltrami North Variation Area contains three route alternatives: the combined Blue/Orange Route; the Beltrami North Variation 1; and the Beltrami North Variation 2 (FEIS Map 4-6).

270. The Beltrami North Central Variation Area contains six route alternatives: the combined Blue/Orange Route; the Beltrami North Central Variation 1; the Beltrami North Central Variation 2; the Beltrami North Central Variation 3; the Beltrami North Central Variation 4; and the Beltrami North Central Variation 5 (FEIS Map 4-7).

271. The route alternatives in each of the variation areas of the West Section are discussed below, organized by variation area.

1. Border Crossing Variation Area

272. The Border Crossing Variation Area is located in the northwestern portion of the West Section (FEIS Map 4-3). The Border Crossing Variation Area is bounded by the United States – Canada international border to the north, overlapped by the Roseau Lake WMA Variation Area to the south, and overlapped by the Cedar Bend WMA Variation Area to the southeast.[320]

273. There is one proposed international border crossing and four alternative border crossing locations within the Border Crossing Variation Area. The five route alternatives in the Border Crossing Variation Area include: the combined Blue/Orange Route (the northernmost part of the Blue and Orange Routes, which begins at Minnesota Power's Proposed Border Crossing location); the Pine Creek Variation; the Highway 310 Variation; the 230 kV Variation; and the 500 kV Variation (FEIS Map 4-3).[321]

274. The primary issues identified by commenters regarding the Border Crossing Variation Area included logistical issues related to the Presidential Permit and Canada's approval of the Proposed Border Crossing location, as well as the potential impact of an HVTL on large peatland complexes, SNAs, agricultural lands, and homesteads in the variation area.

a. Human Settlement - Aesthetics

275. The Highway 310 Variation would pass by two residences within 1,500 feet of the anticipated alignment, with no homes within 500 or 1,000 feet of the line. The 500 kV Variation would pass by three residences within 1,500 feet of the anticipated alignment, with no homes within 500 or 1,000 feet of the line. The 230 kV Variation would pass by five residences within 1,500 feet of the anticipated alignment, with one home within 1,000 feet and no homes within 500 feet of the alignment. The Blue/Orange Route would pass by four residences within 1,500 feet of the anticipated alignment, with two homes within 1,000 feet and two homes within 500 feet of the line. The Pine Creek Variation would pass by five residences within 1,500 feet of the anticipated alignment,

[320] Ex. 119, Vol. 1, Pt. 2 of 14, at 57 (Final Environmental Impact Statement).
[321] Ex. 119, Vol. 1, Pt. 2 of 14, at 57-58 (Final Environmental Impact Statement).

with three homes within 1,000 feet and two homes within 500 feet of the line. Accordingly, the Highway 310 Variation would impact the least number of residences within 1,500 feet of the anticipated alignment.[322]

b. Human Settlement - Land Use Compatibility

276. The Pine Creek Variation crosses the most land (624 acres), with the Blue/Orange Route following close behind (608 acres). The variations crossing the least amount of land are the Highway 310 Variation (453 acres), the 500 kV Variation (244 acres), and the 230 kV Variation (199 acres). The Pine Creek Variation crosses the most private land (243 acres). The 230 kV Variation crosses the least amount of private land (102 acres), with the 500 kV Variation following close behind (113 acres). The Blue/Orange Route would cross the most publicly-owned land (436 acres); whereas the 230 kV Variation would cross the least amount of publicly-owned land (97 acres).[323]

277. While the 230 kV Variation crosses the least amount of land (both public and private), an airstrip, important to the region, would be located within one mile from the anticipated alignment for the Highway 310 Variation.[324] Public comment overwhelmingly opposed any HVTL that could interfere with this airstrip important to residents in the area.

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

278. The Pine Creek Variation would cross the most farmland (171 acres) and the 230 kV Variation would cross the least amount of farmland (77 acres). The Blue/Orange Route, Pine Creek Variation, and Highway 310 Variation would cross the most state forest land (394 acres, 339 acres, and 294 acres, respectively). No active or expired mineral lease lands or aggregate resources are present in the ROW of any alternative.[325]

d. Archaeological and Historic Architectural Resources

279. Only the Pine Creek Variation, Highway 310 Variation, and the 500 kV Variation have potential impacts on archaeological and historic architectural sites in the region. The Pine Creek Variation would cross sections containing two known archaeological sites within 1,500 feet of the anticipated alignment; the Highway 310 Variation would cross one section containing a historic architectural site; and the 500 kV Variation would cross one section identified as containing a known archaeological resources. The other alternatives would not impact these resources.[326]

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[322] Ex. 119, Vol. 1, Pt. 7 of 14, at 252-55 (Final Environmental Impact Statement).
[323] Ex. 119, Vol. 1, Pt. 7 of 14, at 255-59 (Final Environmental Impact Statement).
[324] Ex. 119, Vol. 1, Pt. 7 of 14, at 255-59 (Final Environmental Impact Statement).
[325] Ex. 119, Vol. 1, Pt. 7 of 14, at 259-63 (Final Environmental Impact Statement).
[326] Ex. 119, Vol. 1, Pt. 7 of 14, at 263-65 (Final Environmental Impact Statement).

e. Natural Environment - Water Resources

280. The Pine Creek Variation would cross the most watercourses or waterbodies; however, all crossings are expected to be spanned. The Blue/Orange Route, the Pine Creek Variation, and the Highway 310 Variation cross areas of Federal Emergency Management Agency (FEMA)-designated floodplain that cannot be spanned. The 500 kV Variation and Highway 310 Variation would not cross floodplains.[327]

281. All alternatives would cross wetlands that are too large to be spanned. The Blue/Orange Route has the most total wetland and the most forested wetland, requiring the most forested wetland-type conversion. The 500kV Variation would cross the most shrub wetland, requiring the most shrub wetland-type conversion.[328]

f. Natural Environment – Vegetation

282. The Blue/Orange Route crosses the most forested land (411 acres), followed by the Pine Creek Variation (369 acres) and the Highway 310 Variation (288 acres). These alternatives parallel minimal existing corridor.[329]

g. Natural Environment - Wildlife

283. The Blue/Orange Route, the Pine Creek Variation, and the Highway 310 Variation cross a WMA and/or Grassland Bird Conservation Area. The Highway 310 Variation has a Gray Owl Management Area located within 1,500 feet, but not within the ROW.[330]

h. Rare and Unique Natural Resources - Federal and State Listed Species

284. The Blue/Orange Route, the Pine Creek Variation, and the Highway 310 Variation have a NHIS record for a federal candidate species (Sprague's pipit) within one mile. The Blue/Orange Route and the Pine Creek Variation have the most NHIS records within one mile, including records of state threatened or endangered species, followed by the Highway 310 Variation.[331]

i. Rare and Unique Natural Resources - State Rare Communities

285. The Blue/Orange Route would be located within 1,500 feet of an SNA. The Blue/Orange Route, the Pine Creek Variation, and the Highway 310 Variation would cross SNA WPAs.[332]

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[327] Ex. 119, Vol. 1, Pt. 7 of 14, at 266-69 (Final Environmental Impact Statement).
[328] Ex. 119, Vol. 1, Pt. 7 of 14, at 266-69 (Final Environmental Impact Statement).
[329] Ex. 119, Vol. 1, Pt. 7 of 14, at 269-71 (Final Environmental Impact Statement).
[330] Ex. 119, Vol. 1, Pt. 7 of 14, at 272-73 (Final Environmental Impact Statement).
[331] Ex. 119, Vol. 1, Pt. 7 of 14, at 273-75 (Final Environmental Impact Statement).
[332] Ex. 119, Vol. 1, Pt. 7 of 14, at 275-77 (Final Environmental Impact Statement).

286. The Blue/Orange Route would cross the most MBS Sites of Biodiversity Significance, including those ranked outstanding or high, followed by the Pine Creek Variation and Highway 310 Variation.[333]

287. The Blue/Orange Route would also cross through the most MNDNR High Conservation Value Forest areas, followed by the Pine Creek Variation and the Highway 310 Variation.[334]

288. In addition, the Blue/Orange Route would cross the most MBS native plant communities, followed by the Pine Creek Variation and the Highway 310 Variation. Only the 230 kV Variation would avoid MBS native plant communities with a conservation status rank of "S2" or "S3."[335]

j. Use or Paralleling of Existing Rights-of-Way

289. The 230 kV Variation and the 500 kV Variation parallel existing transmission line corridors for their entire lengths. The other alternatives would parallel existing corridors for approximately one-third of their lengths. The Blue/Orange Route would use the least amount of existing corridor.[336]

k. Electrical System Reliability

290. There are no identified issues related to electrical reliability in this variation area.[337]

l. Costs of Constructing, Operation, and Maintenance

291. The Blue/Orange Route and the Pine Creek Variation would cost the most to construct (approximately $29 million and $29.2 million, respectively). The least costly alternatives are the 230 kV Variation (approximately $9.9 million) and the 500 kV Variation (approximately $11.5 million).[338]

m. Summary of Route Alternatives in Border Crossing Variation Area

292. When considering the aggregated factors, none of the individual variations within the Border Crossing Variation Area stand out as having substantial benefits or impacts over the other options. The distinguishing feature between the variations, relative to the factors, are associated with the benefits of paralleling existing ROWs compared to the direct impacts that occur with the clearing of a transmission ROW.

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[333] Ex. 119, Vol. 1, Pt. 7 of 14, at 275-77 (Final Environmental Impact Statement).
[334] Ex. 119, Vol. 1, Pt. 7 of 14, at 275-77 (Final Environmental Impact Statement).
[335] Ex. 119, Vol. 1, Pt. 7 of 14, at 275-77 (Final Environmental Impact Statement).
[336] Ex. 119, Vol. 1, Pt. 7 of 14, at 277-79 (Final Environmental Impact Statement).
[337] Ex. 119, Vol. 1, Pt. 7 of 14, at 277-79 (Final Environmental Impact Statement).
[338] Ex. 119, Vol. 1, Pt. 7 of 14, at 279-80 (Final Environmental Impact Statement).

293. The public comments received from residents, landowners, and communities in the area are overwhelmingly in support of the Blue/Orange Route and in opposition to the other border crossing variations due to their impacts on farming operations, an important airstrip in the region, and human occupation. In addition, the contractual negotiations between Minnesota Power and Manitoba Hydro which underlie the Project, the previous approval of a border crossing site by the Canadian government consistent with the Blue/Orange Route, and the issuance of a Presidential Permit are all favorable considerations in addition to the factors set forth in Minn. R. 7850.4100.

294. The Blue/Orange Route is the longest route in the area; parallels the least amount of existing corridor; crosses the most public, private, and forested land; has the most impact on the natural environment (including wildlife, vegetation, water resources, and rare/unique species); and is the most expensive of the five alternatives in the Border Crossing Variation Area.[339] Therefore, it would appear that this alternative should not be selected when a decision is based upon the factors set forth in Minn. R. 7850.4100. However, there are significant issues that are not addressed by the rule factors which relate to the viability of the Project as a whole and the support of the surrounding community.

295. Contemporaneous with the approval processes for this Project in the United States involving both state and federal approval, the Canadian government is approving the Canadian portion of the line which connects this Project to Manitoba Hydro's facilities. The Canadian process for approval of a HVTL is roughly similar to the United States' and Minnesota's processes of approval for an international transmission line, in that it requires both federal and provincial approval along with an environmental impact study, opportunity for public comment, and consultation with Aboriginal groups.[340]

296. Canada and Manitoba have completed the equivalent of what Minnesota refers as the "certificate of need" process. Manitoba has granted Manitoba Hydro the authority to proceed with all actions necessary to construct and operate the new transmission line required to connect to the GNTL.[341]

297. Manitoba Hydro is now in the process of completing its next phase of the process: approval of a route and international border crossing by the National Energy Board (NEB). According to Manitoba Justice, the equivalent of a state attorney general's office, Manitoba Hydro has presented just one proposed route and one international border crossing – the same border crossing as set forth in this proceeding as the Proposed Border Crossing – for approval by the NEB.[342]

298. For at least two years, Minnesota Power and Manitoba Hydro have been negotiating an international border crossing that satisfies Canadian, Manitoba, United States, and Minnesota laws, regulations, and logistical constraints. The parties initially

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[339] Ex. 120 (DOC-EERA Relative Merits Table).
[340] COMMENT BY MANITOBA JUSTICE (June 2, 2015) (eDocket No. 20156-111176-01).
[341] *Id.*
[342] *Id.*

arrived at one international border crossing that was proposed in Minnesota Power's Application. Minnesota Power subsequently determined that the originally-proposed border crossing was "not feasible" due to issues associated with the Piney-Pinecreek Border Airport and the Roseau River WMA.[343]

299. Consequently, Minnesota Power and Manitoba Hydro identified a different border crossing, located approximately 4.3 miles east of the original international border crossing location (the Proposed Border Crossing location).[344] Minnesota Power revised its Presidential Permit Application to reflect the Proposed Border Crossing and Manitoba Hydro submitted an application to the NEB for route approval based upon this Proposed Border Crossing Location.[345]

300. Manitoba Hydro asserts that it does not have any routes that connect to the four alternative border crossing locations identified in the DEIS (i.e., the Pine Creek Border Crossing Variation, the Highway 310 Border Crossing Variation, the 230 kV Border Crossing Variation, or the 500 kV Border Crossing Variation).[346] Moreover, Manitoba Hydro asserts that it has not presented for NEB approval any routes or border crossings other than the route and border crossing consistent with the Proposed Border Crossing. In essence, Manitoba Hydro submitted its application to the NEB based solely on the Proposed Border Crossing location.[347]

301. Manitoba Hydro asserts that if it is required to amend its application to the NEB to address a different border crossing location and thus select a different route for the Canadian portion of the line, such change will "jeopardize" the Project as a whole because it will cause delays in the process and could potentially impact the June 2010 in-service date agreed to by Minnesota Power and Manitoba Hydro in their contracts for this Project.[348] Unfortunately, the record is unclear as to how long the Canadian approval process could take if a border crossing location is selected other than the Proposed Border Crossing.[349]

302. Similarly, if a border crossing location other than the Proposed Border Crossing is selected by the Commission in this proceeding, Minnesota Power will need to amend or re-start the Presidential Permit process to obtain federal approval for a new international border crossing.[350] Minnesota Power's Presidential Permit Application has already been amended once during this process, in 2014.[351] That process took approximately 30 days to complete.[352] The Presidential Permit Application has already

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[343] Ex. 36 at 11-12 (Atkinson Direct).
[344] *Id.*
[345] Ex. 32; COMMENT BY MANITOBA JUSTICE (June 2, 2015) (eDocket No. 20156-111176-01).
[346] Ex. 61 (Letter from Manitoba Hydro).
[347] *Id.*
[348] *Id.*
[349] *See e.g.,* Tr. Vol. 3 at 126-132.
[350] Ex. 67 at 14 (Atkinson Supp.).
[351] Ex. 32 (Amendment to Border Crossing).
[352] Tr. Vol. 3 at 100, 130 (Atkinson).

received approval by the United States Departments of Defense and State.[353] Accordingly, for Minnesota Power to amend its Presidential Permit Application, there would be an unknown additional delay in the start of the Project and no assurances that the DOE would approve a different border crossing location.

303. Minnesota Power and Manitoba Hydro are contractually committed to an in-service date of June 1, 2020.[354] If either or both of the parties are unable to fulfill that contractual obligation, there could be a breach of the contracts putting the Project, as a whole, in jeopardy.[355]

304. Put simply, changes to the border crossing at this point would have a ripple effect: (1) it would require Manitoba Hydro to amend its application for route approval and delay (and possibly place in jeopardy) the approval of the Canadian portion of the line; and (2) it would require Minnesota Power to amend its Presidential Permit Application and cause additional delay awaiting approval for that new location. According to Minnesota Power and Manitoba Hydro, the additional time required for approval of a different border crossing location in both Canada and in the United States would delay the start of construction for the Project and would likely impede the parties from meeting their contractual obligations.[356] In turn, this would impact whether Minnesota Power will be able to satisfy the goals of its Energy*Forward* program and whether the Company will be able to meet the projected capacity and increased energy requirements of its customers by 2020 – both of which were underlying bases for the Commission's approval of the Certificate of Need in 2015.[357]

305. Manitoba Hydro and Minnesota Power have already agreed upon the Proposed Border Crossing and this is the only border crossing location that will allow the two companies to meet their contractual in-service date obligations.[358] The Proposed Border Crossing Location is consistent with only the Blue/Orange Route in the Border Crossing Variation Area.[359] All other variations utilize different border crossing locations.[360]

306. While the issues raised by Manitoba Hydro and Minnesota Power do not easily fit within the factors to be considered in Minn. R. 7850.4100, these concerns have implications on the overall goals and guidelines contained in Minn. Stat. § 216E.03, subd. 7(a), which are to "ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure."

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[353] LETTER FROM MINNESOTA POWER (September 11, 2015) (eDocket No. 20159-113920-01).
[354] Tr. Vol. 3 at 123-24 (Atkinson).
[355] Tr. Vol. 3 at 128-29 (Atkinson).
[356] Ex. 67 at 16-18 (Adkinson Supp.); Ex. 69 (Letter from Manitoba Justice); Ex. 70 (Letter from Manitoba Hydro).
[357] Ex. 67 at 16-18 (Adkinson Supp.).
[358] COMMENT FROM MANITOBA HYDRO (July 30, 2015) (eDocket No. 20157-112859-01).
[359] Ex. 39 at 12-13 (Atkinson Direct).
[360] Ex. 119, Pt. 1, Vol. 4 at 68, Map 4-2.

307. With respect to the Border Crossing Variation Area, the selection of a route alternative requires a balance between paralleling existing utility lines and ensuring the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.

308. Selection of a border crossing other than the Proposed Border Crossing would likely result in additional processes and delays (both federally and by the Canadian government), putting at risk the in-service contract date and, consequently, the Project as a whole. Given the determinations made in the affiliated Certificate of Need proceeding, jeopardizing the Project would be in direct conflict with the goals of the Power Plant Siting Act. Accordingly, the scales tip in favor of selecting the Blue/Orange Route as the most reasonable alternative given the logistical issues related to this Project.

2. Roseau Lake WMA Variation Area

309. The Roseau Lake WMA Variation Area is located in the northwestern portion of the West Section (FEIS Map 4-2). The Roseau Lake WMA Variation Area is overlapped by the Border Crossing Variation Area to the north, the Cedar Bend WMA Variation Area to the east, and the Beltrami North Variation Area to the southeast.

310. There are three alternatives within the Roseau Lake WMA Variation Area: the Blue/Orange Route, the Roseau Lake WMA Variation 1, and the Roseau Lake WMA Variation 2.[361]

311. The primary issue identified in this variation area is a request by the MNDNR and USFWS for the proposed transmission line to avoid the Roseau Lake WMA. The Roseau Lake WMA Variations 1 and 2 avoid the Roseau Lake WMA. The Blue/Orange Route does not.

a. Human Settlement - Aesthetics

312. The Roseau Lake WMA Variation 1 would pass by the most residences (50) within 1,500 feet of the anticipated alignment, including 19 of those within 1,000 feet and three of those within 500 feet. In addition, the Roseau Lake WMA Variation 1 parallels the least amount of existing transmission line corridor.[362]

313. The Roseau Lake WMA Variation 2 would pass 23 residences within 1,500 feet of the anticipated alignment, including eight of those within 1,000 feet but none within 500 feet.

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[361] Ex 119, Vol.1, Pt. 2 of 14, at 57-58 (Final Environmental Impact Statement).
[362] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 280-81, Table 6-13 (Final Environmental Impact Statement).

314. The Blue/Orange Route would pass by the fewest residences within 1,500 feet of the anticipated alignment (only 13), with five of those within 1,000 feet and two of those within 500 feet of the line.[363]

b. Human Settlement - Land Use Compatibility

315. The Roseau Lake WMA Variation 1 and the Roseau Lake WMA Variation 2 would cross the most privately owned land (1,064 acres and 765 acres, respectively).[364] In addition, public comment evidences that the Roseau Lake WMA Variations are widely opposed by the private landowners and farmers in the area, as well as the communities in the area. The Blue/Orange Route would cross USFWS Interest Lands, while the Roseau Lake WMA Variations 1 and 2 would not. Crossing USFWS lands will require a provisional use permit, which Minnesota Power is apparently prepared to obtain within the time required for the anticipated in-service date.[365]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

316. The Roseau Lake WMA Variations 1 and 2 would cross the most amount of farmland and agricultural areas, impacting farmers' ability to conduct aerial spraying and use large farm equipment (493 acres and 412 acres, respectively). In contrast, the Blue/Orange Route would cross more state-owned forest land, followed by Roseau Lake WMA Variation 2. No active or expired or terminated mineral lease lands or aggregate resources are present in the ROW of any alternative in the Roseau Lake Variation Area.[366]

d. Archaeological and Historic Architectural Resources

317. The Roseau Lake WMA Variations 1 and 2 would cross sections identified as containing known archaeological sites and have historic architectural sites present within one mile. The Blue/Orange Route would not impact any archaeological or historic architectural sites.[367]

e. Natural Environment - Water Resources

318. All alternatives would cross relatively similar numbers of watercourses and waterbodies, which are expected to be spanned. In addition, all alternatives would cross

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[363] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 280-81, Table 6-13 (Final Environmental Impact Statement).
[364] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 282-84, Table 6-15 (Final Environmental Impact Statement).
[365] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 283-86, Table 6-16 (Final Environmental Impact Statement).
[366] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 286-87 (Final Environmental Impact Statement).
[367] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 287-88, Table 6-17 (Final Environmental Impact Statement).

relatively similar areas of FEMA-designated floodplain areas that are too large to span. All alternatives would also cross wetlands that are too large to span.[368]

319. The Blue/Orange Route crosses the most total wetland. It would also cross the most forested and shrub wetland and would, therefore, require the most wetland-type conversion.[369]

f. Natural Environment - Vegetation

320. The Blue/Orange Route and the Roseau Lake WMA Variation 2 would cross the most forested land cover (515 acres and 275 acres, respectively).[370]

g. Natural Environment - Wildlife

321. The Blue/Orange Route and Roseau Lake WMA Variation 2 cross a WMA and more acres of Grassland Bird Conservation Area than the Roseau Lake WMA Variation 1.[371]

h. Rare and Unique Natural Resources - Federal and State Listed Species

322. All alternatives have a relatively similar number of NHIS records within one mile. The Blue/Orange Route has an NHIS record for a federal candidate species (Sprague's pipit), which is also state-endangered, within one mile. The Blue/Orange Route and Roseau Lake WMA Variation 2 have a state-threatened species documented within one mile.[372]

i. Rare and Unique Natural Resources - State Rare Communities

323. The Blue/Orange Route would be located close to an SNA, but not within 1,500 feet. The Blue/Orange Route would also cross more acres of SNA- WPAs than the variations. The Blue/Orange Route and the Roseau Lake WMA Variation 2 would cross the most acres of MBS Sites of Biodiversity Significance, including those ranked outstanding or high. The Blue/Orange Route would cross the most acres of High Conservation Value Forest. The Blue/Orange Route and Roseau Lake WMA Variation 2

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[368] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 289-90 (Final Environmental Impact Statement).
[369] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 290-91 (Final Environmental Impact Statement).
[370] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 291-92 (Final Environmental Impact Statement).
[371] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 292-93 (Final Environmental Impact Statement).
[372] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 293-95 (Final Environmental Impact Statement).

would cross the most MBS native plant communities, including those with conservation status ranks of S2 and S3.[373]

j. Use or Paralleling of Existing Rights-of-Way

324. The Blue/Orange Route would use or parallel the most existing transmission line, roadway, and/or trail corridor, with 52 percent of its length paralleling existing ROW. The Roseau Lake WMA Variation 1 would parallel the least existing transmission line, roadway, and/or trail corridor, with only 11 percent of its segment length using or paralleling existing ROW. The Roseau Lake WMA Variation 2 uses or parallels existing ROW for 43 percent of its length.[374]

k. Electrical System Reliability

325. There are no issues with electrical reliability because there would not be three transmission lines paralleling the same corridor.[375]

l. Costs of Constructing, Operation, and Maintenance

326. The estimated cost of the Roseau Lake WMA Variations 1 and 2 are significantly higher than the Blue/Orange Route (approximately $57 million and $46.1 million, respectively). The estimated cost of the Blue/Orange Route is approximately $33.2 million, making it the least expensive option by far.[376]

m. Summary of Route Alternatives in the Roseau Lake WMA Variation Area

327. The Blue/Orange Route minimizes the potential impacts to those factors related to the built environment, including fewer impacts on residences, private property, farmland, and archaeological and historical sites. In addition, the Blue/Orange Route is the least expensive alternative and parallels the most extent existing ROW.[377] Moreover, the Blue/Orange Route is overwhelmingly favored by residents, farmers, landowners, and communities in the Roseau area, a factor that the Commission cannot ignore.

328. The Roseau Lake WMA Variation 1 and the Roseau Lake WMA Variation 2 attempt to minimize potential impacts to the natural environment by avoiding the Lost River State Forest. Consequently, these two routing options have a greater potential impact on private property and agricultural lands, and have the highest costs due to increased length. In addition, the Roseau Lake WMA Variation 1 offers the least opportunities to parallel existing ROW. While the Roseau Lake WMA Variations 1 and 2

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[373] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 294-96 (Final Environmental Impact Statement).
[374] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 297-98 (Final Environmental Impact Statement).
[375] Ex. 120 (DOC-EERA Relative Merits Table).
[376] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 296-97, Table 6-24 (Final Environmental Impact Statement).
[377] Ex. 120 (DOC-EERA Relative Merits Table).

attempt to minimize impacts on the natural environment, they do so at the expense of private property interests, as well as ratepayers who would be affected by the increased cost of these lines.[378]

329. Based upon a balancing of the rule factors set forth in Minn. R. 7850.4100, the Blue/Orange Route is the more reasonable and cost-effective option.

3. Cedar Bend WMA Variation Area

330. The Cedar Bend WMA Variation Area is located in the central portion of the West Section (FEIS Map 4-2). The Cedar Bend WMA Variation Area is overlapped by the Border Crossing Variation Area to the northwest, the Roseau Lake WMA Variation Area to the west, the Beltrami North Variation Area to the south, and the Beltrami North Central Variation Area to the southeast.

331. There are two route alternatives within the Cedar Bend WMA Variation Area: the combined Blue/Orange Route and the Cedar Bend WMA Variation.[379]

332. The primary issue identified in this variation area is a request by the MNDNR and USFWS to avoid USFWS Interest Lands and the Cedar Bend WMA.

a. Human Settlement - Aesthetics

333. The Cedar Bend WMA Variation 1 would pass by significantly more residences within 1,500 feet of the anticipated alignment: 101 residences for the Cedar Bend WMA Variation 1, as opposed to 11 residences for the Blue/Orange Route.[380]

b. Human Settlement - Land Use Compatibility

334. The proposed Blue/Orange Route would cross USFWS Interest Lands (six acres), which would require obtaining a provisional special use permit for construction from the USFWS. The Cedar Bend WMA Variation would not cross USFWS Interest Lands. However, the Cedar Bend WMA Variation would cross more private land than the Blue/Orange Route (392 acres versus 158 acres). The Blue/Orange Route maximizes the use of public lands in conformity with the stated interests of the DOC-EERA Work Group formed to evaluate and give recommendations related to this Project.[381]

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[378] Ex. 120 (DOC-EERA Relative Merits Table).
[379] Ex. 119, Vol. 1, Pt. 7 of 14, at 299 (Final Environmental Impact Statement).
[380] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 299-300 (Final Environmental Impact Statement).
[381] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 301-03, Table 6-27 (Final Environmental Impact Statement).

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

335. The Cedar Bend WMA crosses more agricultural land than the Blue/Orange Route (192 acres versus 101 acres). In contrast, the Blue/Orange Route would cross more state forest land, as well as expired or/ terminated mineral lease lands. The Cedar Bend WMA Variation would not cross any mineral lease lands.[382]

d. Archaeological and Historic Architectural Resources

336. The Cedar Bend WMA Variation would cross sections identified as containing two known archaeological sites; the Blue/Orange Route would not. In addition, there are eight historic architectural sites within one mile of the Cedar Bend WMA Variation, but there are none within the ROW of the Blue/Orange Route.[383]

e. Natural Environment - Water Resources

337. Both alternatives have the same number of crossings of watercourses and waterbodies, which are expected to be spanned. The Cedar Bend WMA would cross a floodplain that cannot be spanned; the Blue/Orange Route would not cross any floodplains. Both alternatives would cross wetlands that are too large to span. Overall, the Blue/Orange Route has the most total wetland, including the most forested and shrub wetland, and would therefore require the most wetland-type conversion.[384].

f. Natural Environment - Vegetation

338. The Blue/Orange Route would cross more forested land cover than the Cedar Bend WMA.[385]

g. Natural Environment - Wildlife

339. The Blue/Orange Route crosses a WMA, more acres of Grassland Bird Conservation Area, and a shallow lake.[386]

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[382] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 303-306 (Final Environmental Impact Statement).
[383] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 307-08 (Final Environmental Impact Statement).
[384] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 309-11 (Final Environmental Impact Statement).
[385] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 311-12 (Final Environmental Impact Statement).
[386] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 312-14 (Final Environmental Impact Statement).

h. Rare and Unique Natural Resources - Federal and State Listed Species

340. There are no federally-listed species identified for either of these alternatives. The Blue/Orange Route has more NHIS records within one mile, including some threatened NHIS records.[387]

i. Rare and Unique Natural Resources - State Rare Communities

341. The Blue/Orange Route would cross more MBS Sites of Biodiversity Significance (including outstanding or high rank), High Conservation Value Forest, and MBS native plant communities, including communities with a conservation status rank of "S2" (S2) and "S3." (S3). No SNAs would be located within 1,500 feet of any of the routing options, and neither routing option would cross a SNA WPA.[388]

j. Use or Paralleling of Existing Rights-of-Way

342. Both routing options parallel existing transmission line, roadway, and/or trail corridors for their entire lengths.[389]

k. Electrical System Reliability

343. There are no identified issues related to electrical reliability in this variation area.[390]

l. Costs of Constructing, Operation, and Maintenance

344. The range of cost for the Cedar Bend WMA Variation ranges from approximately $22.9 to $23.2 million, making it less expensive than the cost of the Blue/Orange Route (which has an estimated cost of approximately $27.2 million). The cost difference is relatively minor.

m. Summary of Route Alternatives in the Cedar Bend WMA Variation Area

345. Both routing options through the Cedar Bend WMA Variation Area parallel existing transmission lines for 100 percent of their length.[391] Like in the Roseau Lake WMA Variation Area, the Blue/Orange Route minimizes the potential impacts to

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[387] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 314-15 (Final Environmental Impact Statement).
[388] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 315-16 (Final Environmental Impact Statement).
[389] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 316 (Final Environmental Impact Statement).
[390] Ex. 120 (DOC-EERA Relative Merits Table).
[391] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 7 of 14, at 316-17, Table 6-35 (Final Environmental Impact Statement).

residences, private land, agricultural operations, and archaeological and historic sites.[392] In addition, the commenting public and surrounding communities overwhelmingly support the Blue/Orange Route over the Cedar Bend WMA, a factor that the Commission cannot ignore.

346. The Cedar Bend WMA Variation attempts to minimize potential impacts to the natural environment mainly by avoiding a large section of the Beltrami Island State Forest and the Cedar Bend WMA. This route option also avoids USFWS Interest Lands that the Blue/Orange Route would cross. In exchange for lesser impacts on the natural environment, the Cedar Bend WMA Variation would have greater impacts on human settlement.[393]

347. The largest distinction between the two routing options within the Cedar Bend WMA Variation Area is in the human settlement and land use factors. The Cedar Bend WMA Variation impacts 16 residences within 500 feet of the line; 52 residences within 1,000 feet of the line; and 101 residences within 1,500 feet of the alignment. The Blue/Orange Route affects five residences within 1,000 feet of the line and 11 residences within 1,500 feet of the line, and has no residences within 500 feet of the line.[394] Over all, the Cedar Bend WMA Variation would impact 392 acres of private land, in comparison to only 158 acres of private land for the Blue/Orange Route.[395] In conformity with the goals articulated by DOC-EERA's Work Group, the Blue/Orange Route would maximize the use of public lands and minimize the impact on human settlement.

348. Notably, both the Blue/Orange Route and the Cedar Bend WMA Variation parallel existing transmission line corridors and, thus, their corresponding impacts are in or adjacent to areas previously disturbed by existing HVTL ROWs and are expected to be incremental. However, the Cedar Bend WMA Variation would affect substantially more residences.[396] Additionally, the Cedar Bend WMA Variation has a problematic pitch point between two residences where the existing 230 kV crosses 650th Avenue.[397]

349. Overall, given the greater impact the Cedar Bend WMA Variation would have on human settlement and given the values expressed by the Work Group and involved communities, a balancing of the presented issues favors the Blue/Orange Route.

4. Beltrami North Variation Area

350. The Beltrami North Variation Area is located in the central portion of the West Section (FEIS Map 4-2). The Beltrami North Variation Area is overlapped by the Roseau Lake WMA Variation Area to the west, the Cedar Bend WMA Variation Area to the north, and the Beltrami North Central Variation Area to the east. (FEIS Map 4-6).

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[392] Ex. 120 (DOC-EERA Relative Merits Table).
[393] Ex. 120 (DOC-EERA Relative Merits Table).
[394] Ex. 120 (DOC-EERA Relative Merits Table).
[395] Ex. 120 (DOC-EERA Relative Merits Table).
[396] Ex. 119, Vol. 1, Pt. 7 of 14, at 299 (Final Environmental Impact Statement).
[397] Ex. 119, Appendix S, Map Book West Sec., Pt. 2 of 2, at Map 29 (Final Environmental Impact Statement).

351. There are three segment alternatives within the Beltrami North Variation Area: the combined Blue/Orange Route, the Beltrami North Variation 1, and the Beltrami North Variation 2.[398]

352. The primary issue identified in this variation area is a request by USFWS to consider avoiding USFWS Interest Lands.

a. Human Settlement - Aesthetics

353. Of the three route alternatives in this variation area, the Beltrami North Variation 1 would pass by the most residences (six) within 1,500 feet of the anticipated alignment with no residences within 500 or 1,000 feet. The Blue/Orange Route would pass by three residences within 1,500 feet of the anticipated alignment, two of which are within 1,000 feet but none of which are within 500 feet. The Beltrami North Variation 2 would pass by only one residence within 1,500 feet of the anticipated alignment and no residences within 500 or 1,000 feet.[399]

b. Human Settlement - Land Use Compatibility

354. The Blue/Orange Route would cross USFWS Interest Lands, while the other alternatives purposely avoid these public lands. Crossing USFWS Interest Lands would require obtaining a provisional special use permit for construction from the USFWS. Of the three alternatives, Beltrami North Variation 1 would cross the most private land (86 acres). In contrast, the Beltrami North Variation 2 would cross the most public land (450 acres), but avoids USFWS Interest Lands.[400]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

355. All of the routing options would cross the same amount of farmland (27 acres). The three options would also cross a relatively similar amount of state forest land and expired or terminated mineral lease lands. The Beltrami North Variation 2 would cross the most forestry land (462 acres) and the most state mining lease lands (152 acres).[401]

d. Archaeological and Historic Architectural Resources

356. Beltrami North Variation 2 crosses near more sections identified as containing known archaeological and historic architectural sites. There are two archeological sites and two historic architectural sites within one mile of Beltrami North

[398] Ex. 119, Vol. 1, Pt. 2 of 14, at 58-60 (Final Environmental Impact Statement).
[399] Ex. 120 (DOC-EERA Relative Merits Table).
[400] *Id.*
[401] *Id.*

Variation 2. Neither the Blue/Orange Route nor the Beltrami North Variation 1 would cross archaeological or historic architectural sites.[402]

e. Natural Environment - Water Resources

357. All of the routing options would cross relatively similar numbers of watercourses and waterbodies (between 11 and 15). None of the routing options would cross FEMA-designated floodplains. In addition, all of the routing options would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion.[403]

f. Natural Environment - Vegetation

358. All of the routing options would cross a relatively similar amount of forested land cover, with the Beltrami North Variation 2 crossing the most forested land (473 acres).[404]

g. Natural Environment/Wildlife

359. The Beltrami North Variation 2 would cross an Important Bird Area (crossing 23 acres). Both the Blue/Orange Route and the Beltrami North Variation 1 cross a shallow lake, but both lines would parallel existing corridor in this area, causing minimal new impacts.[405]

h. Rare and Unique Natural Resources - Federal and State Listed Species

360. There are no federally-listed species identified within the ROI for one mile from these three routing options. However, the Beltrami North Variation 2 has more NHIS records, including records of state threatened and/or endangered species, within one mile of the anticipated alignment.[406]

i. Rare and Unique Natural Resources - State Rare Communities

361. The Beltrami North Variation 2 would cross the most MBS Sites of Biodiversity Significance, including those ranked “outstanding” or “high.” Both the Blue/Orange Route and the Beltrami North Variation 2 would cross High Conservation Value Forest. However, the Beltrami North Variation 2 would also cross MBS native plant

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[402] *Id.*
[403] *Id.*
[404] *Id.*
[405] *Id.*
[406] *Id.*

communities, including communities with a conservation status rank of "S2" and "S3," whereas the other alternatives would not cross any MBS native plant communities.[407]

j. Use or Paralleling of Existing Rights-of-Way

362. The Blue/Orange Route parallels existing transmission line, roadway, and/or trail corridor for 100 percent of its length in this segment. The Beltrami North Variation 1 and Beltrami North Variation 2 would only parallel existing transmission line, roadway, and/or trail corridor for a portion of their lengths (72 percent and 53 percent, respectively), resulting in more potential new impacts.[408] A goal identified by the Work Group was to use, as much as possible, existing utility corridors.[409]

k. Electrical System Reliability

363. There are no identified issues related to electrical reliability in this variation area.[410]

l. Costs of Constructing, Operation, and Maintenance

364. The estimated cost of the Beltrami North Variation 1 is between $18.7 and $19.6 million; the estimated cost of the Beltrami North Variation 2 is approximately $24.6; the estimated cost of the Blue/Orange Route is approximately $19 million. The Beltrami North Variation 2 is the most expensive alternative.[411]

m. Summary of Route Alternatives in the Beltrami North Variation Area

365. The Beltrami North Variations 1 and 2 were developed specifically to avoid USFWS Interest Lands.[412] While these two variations do avoid USFWS land, the drawbacks of the alternatives outweigh the benefits of avoiding the federal land. Notably, the Blue/Orange Route follows an existing 500 kV transmission line for 100 percent of its total length through this variation area. In contrast, the Beltrami North Variations 1 and 2 only parallel existing ROW for a portion of their distances and would create between four and nine miles of new utility corridor across the natural landscape.[413]

366. The Beltrami North Variation 1 crosses the most private land and impacts the largest number of private residences. The Beltrami North Variation 2 is the longest route option and impacts the most public land, including the most forest land. In addition, the Beltrami North Variation 2 has the most new impacts to the natural environment, including impacts on Important Bird Areas, areas containing state-listed species, MBS

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[407] *Id.*
[408] *Id.*
[409] Ex. 107 at 7, Appendix E (Scoping Report).
[410] Ex. 120 (DOC-EERA Relative Merits Table).
[411] *Id.*
[412] Ex. 119, Vol. 1, Pt. 8 of 14 at 380, Map 6-16 (Final Environmental Impact Statement).
[413] Ex. 120 (DOC-EERA Relative Merits Table).

Sites of Biodiversity Significance, and more MBS native plant communities. Moreover, the Beltrami North Variation 2 is the most expensive option, estimated to cost over 20 percent more than the Blue/Orange Route.[414]

367. In sum, the Blue/Orange Route best balances the factors set forth in Minn. R. 7850.4100. Aside from avoiding USFWS-owned lands, there is no significant reduction in the potential impacts on the built and natural environment to justify the divergence from the paralleling of existing infrastructure. Because the Blue/Orange Route parallels existing ROW for 100 percent of its length and is likely the least-cost alternative of the three presented, the Blue/Orange Route is the most favorable route through the Beltrami North Variation Area.

5. Beltrami North Central Variation Area

368. The Beltrami North Central Variation Area is located in the southeastern portion of the West Section (FEIS Map 4-2). The Beltrami North Central Variation Area is overlapped by the Cedar Bend WMA and Beltrami North Variation Areas to the northwest.

369. There are six routing options within this variation area: the combined Blue/Orange Route, the Beltrami North Central Variation 1, the Beltrami North Central Variation 2, the Beltrami North Central Variation 3, the Beltrami North Central Variation 4, and the Beltrami North Central Variation 5.[415]

370. The primary issue identified in this variation area is a request by the USFWS to consider avoiding USFWS Interest Lands.[416]

a. Human Settlement - Aesthetics

371. The Beltrami North Central Variations 4 and 5 would pass by the most residences within 1,500 feet of the anticipated alignment (10 and eight, respectively).[417] The Beltrami North Central Variations 1 and 2 would pass by the fewest number of residences (two) within 1,500 feet of the alignments.[418]

b. Human Settlement - Land Use Compatibility

372. The Blue/Orange Route would cross 18 acres of USFWS Interest Lands; the Beltrami North Central Variation 2 would cross only one acre of USFWS Interest Land.[419].

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[414] *Id.*
[415] Ex. 119, Vol. 1, Pt. 2 of 14, at 58-60 (Final Environmental Impact Statement).
[416] Ex. 119, Vol. 1, Pt. 2 of 14, at 59-60 (Final Environmental Impact Statement).
[417] Ex. 119, Vol. 1, Pt. 7 of 14, at 336-38 (Final Environmental Impact Statement).
[418] Ex. 119, Vol. 1, Pt. 7 of 14, at 336-38 (Final Environmental Impact Statement).
[419] Ex. 119, Vol. 1, Pt. 7 of 14, at 339-40, Table 6-51 (Final Environmental Impact Statement).

373. The Beltrami North Central Variations 4 and 5 would cross the most land (329 acres and 365 acres, respectively), including the most private land (151 acres and 155 acres, respectively). The Blue/Orange Route and Beltrami North Central Variation 2 would cross the fewest acres of private property (59 acres and 68 acres, respectively).[420]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

374. The Beltrami North Central Variations 4 and 5 would cross the most farmland (39 acres each). The Beltrami North Central Variation 2 would not cross any farmland.[421]

375. All of the routing options would cross similar amounts of state forest. However, the Blue/Orange Route and Beltrami North Central Variation 4 would parallel the most existing transmission line, roadway, or trail corridor.[422]

376. No active or expired or terminated mineral lease lands or aggregate resources are present in the ROW of any of the routing options.[423]

d. Archaeological and Historic Architectural Resources

377. There are no known archaeological sites that would be affected by the six alternatives in this variation area. The Beltrami North Central Variation 4 and the Beltrami North Central Variation 5 have one historic architectural site within one mile of the anticipated alignment. The other variations do not cross areas of known archaeological or historic architectural significance.[424]

e. Natural Environment - Water Resources

378. All of the routing options would cross relatively similar numbers of watercourses or waterbodies (between five and 10), and relatively similar small areas of FEMA-designated floodplain, which would likely be spanned. All of the routing options would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion.[425]

f. Natural Environment - Vegetation

379. All of the routing options would cross a relatively similar amount of forested land cover. However, the Blue/Orange Route would impact the fewest number of acres

[420] Ex. 119, Vol. 1, Pt. 7 of 14, at 339-40, Table 6-51 (Final Environmental Impact Statement).
[421] Ex. 119, Vol. 1, Pt. 7 of 14, at 340-41, Table 6-52 (Final Environmental Impact Statement).
[422] Ex. 119, Vol. 1, Pt. 7 of 14, at 341-43, Table 6-52 (Final Environmental Impact Statement).
[423] Ex. 119, Vol. 1, Pt. 7 of 14, at 343 (Final Environmental Impact Statement).
[424] Ex. 119, Vol. 1, Pt. 7 of 14, at 343-44, Table 6-53 (Final Environmental Impact Statement).
[425] Ex. 119, Vol. 1, Pt. 7 of 14, at 344-47, Map 6-23, Table 6-54 (Final Environmental Impact Statement).

of forested land and would parallel the most existing transmission line, roadway, or trail corridor, resulting in fewer new impacts.[426]

g. Natural Environment - Wildlife

380. All variations cross Important Bird Areas. The Blue/Orange Route and Beltrami North Central Variation 2 cross the most acres of Important Bird Area (117 acres and 157 acres, respectively). However, the Blue/Orange Route would parallel existing corridor through this area, whereas the Beltrami North Central Variation 2 would not.[427]

h. Rare and Unique Natural Resources - Federal and State Listed Species

381. There are no federally-listed species identified for these routing options. The Beltrami North Central Variation 1 has the most NHIS records within one mile of the anticipated alignment (12 records). The Beltrami North Central Variation 4 is the only option that does not have threatened and endangered NHIS records within one mile of the anticipated alignment.[428]

i. Rare and Unique Natural Resources - State Rare Communities

382. The Beltrami North Central Variation 2 would cross an SNA WPA. The Blue/Orange Route and Beltrami North Central Variation 2 would cross the most MBS Sites of Biodiversity Significance ranked "outstanding" or "high." There are no known High Conservation Value Forests that would be affected by the routing options.[429]

j. Use or Paralleling of Existing Rights-of-Way

383. The Beltrami North Central Variation 1 and Beltrami North Central Variation 2 would parallel the least existing transmission line, roadway, and/or trail corridor (only 48 percent and 49 percent, respectively). In contrast, the Blue/Orange Route parallels existing transmission line, roadway, and/or trail corridor for 100 percent of its length in this segment. All other variations only parallel existing corridor for a portion of their lengths.[430]

k. Electrical System Reliability

384. There are no identified issues related to electrical reliability in this variation area.[431]

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[426] Ex. 119, Vol. 1, Pt. 7 of 14, at 347-48, Table 6-55 (Final Environmental Impact Statement).
[427] Ex. 119, Vol. 1, Pt. 7 of 14, at 348-89, Table 6-56 (Final Environmental Impact Statement).
[428] Ex. 119, Vol. 1, Pt. 7 of 14, at 350 (Final Environmental Impact Statement).
[429] Ex. 119, Vol. 1, Pt. 7 of 14, at 351, Table 6-58 (Final Environmental Impact Statement).
[430] Ex. 119, Vol. 1, Pt. 7 of 14, at 352-53, Table 6-59 (Final Environmental Impact Statement).
[431] Ex. 119, Vol. 1, Pt. 7 of 14, at 359, Table 6-64 (Final Environmental Impact Statement).

l. Costs of Constructing, Operation, and Maintenance

385. The estimated maximum cost for the Beltrami North Central Variation 1 and Beltrami North Central Variation 2 are within 20 percent of the cost of the Blue/Orange Route. The estimated cost of the Beltrami North Central Variations 3, 4, and 5 are more than 20 percent above the cost of the proposed Blue/Orange Route. Overall, the least-cost alternative is the Blue/Orange Route. The highest cost alternative is the Beltrami North Central Variation 4.[432]

m. Summary of Route Alternatives in the Beltrami North Central Variation Area

386. The Beltrami North Central Variations 1, 2, 3, 4, and 5 were all developed in an effort to avoid USFWS Interest Lands and reduce potential impacts to the Beltrami Island State Forest.[433]

387. While the Blue/Orange Route would cross USFWS Interest Lands, it parallels an existing 500 kV line for 100 percent of its total length through this segment, unlike the other options.[434] As a result, compared to the Blue/Orange Route, the Beltrami North Central Variations 1, 2, 3, 4, and 5 would require the construction of new utility corridors, with corresponding new impacts to the natural environment.[435] None of these routing options provides enough benefits to outweigh the benefits of paralleling existing transmission lines that the Blue/Orange Route provides.

388. Of the Beltrami North Central Variations 1, 2, 3, 4, and 5, Variation 5 is the best option as it parallels existing corridor for 92 percent of its length and has fewer impacts on the natural environment.[436] However, when compared to the Blue/Orange Route, these benefits are less significant.

389. The most significant distinctions between the Blue/Orange Route and the Beltrami North Central Variation 4 involve the proximity to residences, the impact on privately-owned lands and agricultural lands, the potential effects on the natural environment, and cost.[437]

390. Both the Blue/Orange Route and the Beltrami North Central Variation 4 parallel existing transmission line corridors and, thus, have fewer new impacts than the other four variations. However, the Beltrami North Central Variation 4 would potentially affect more residences within 1,500 feet of the anticipated alignment than the Blue/Orange Route (10 versus three), and would cross more privately-owned land (151 acres versus 68 acres). Moreover, the Beltrami North Central Variation 4 would impact more farmland than the Blue/Orange Route (39 acres versus six 6 acres). However, the

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[432] Ex. 119, Vol. 1, Pt. 7 of 14, at 352-53, Table 6-60 (Final Environmental Impact Statement).
[433] Ex. 119, Vol. 1, Pt. 7 of 14, at 338-40, 357-58, Table 6-65 (Final Environmental Impact Statement).
[434] Ex. 120 (DOC-EERA Relative Merits Table).
[435] *Id.*
[436] *Id.*
[437] *Id.*

Blue/Orange Route would cross more acres of Important Bird Areas than the Beltrami North Central Variation 4 (117 acres versus 33 acres). The Blue/Orange Route also has more NHIS records within one mile of the anticipated alignment and crosses more acres of MBS Sites of Biodiversity Significance ranked outstanding or high (101 acres versus 15 acres). The factors that tip the scales in favor of the Blue/Orange Route are that it parallels existing utility corridors for 100 percent of its length and is the least-cost alternative by far.[438]

391. It is important to note that the Beltrami North Central Variation 4 would require the use of Hop 3 and possibly Hop 5. Hop 3 is located in the southeastern portion of the Cedar Bend WMA Variation Area and the northwestern corner of the Beltrami North Central Variation Area (FEIS Map 6-75). It serves as a connection between the Blue/Orange Route for either the Beltrami North Central Variation 3 or 4. The length of Hop 3 is 1.2 miles. Land in the area includes only state forest lands (Beltrami Island State Forest). Hop 3 crosses the existing 500 kV line. The entire length of Hop 3 passes through shrub and forested wetlands and crosses MBS Sites of Biodiversity Significance.[439]

392. Hop 5 travels west to the Orange Route, along a portion of the Blue Route. Hop 5 would only be necessary to preserve the Orange Route as an option going forward into the Central Section of the proposed Project. Without the use of Hop 5 (i.e., if the Beltrami North Central Variation 4 was selected) the Orange Route would be eliminated from consideration (throughout the Central Section) until the Blue Route rejoins it in the East Section.

393. The length of Hop 5 is 3.5 miles, with the closet residence being 0.4 miles to the north (FEIS Map 6-76). Land ownership includes both private and state forest (Lake of the Woods and Beltrami Island State Forests). The Border Trails snowmobile trail crosses this Hop. The eastern end of this Hop crosses an unnamed watercourse. Hop 5 crosses the existing 500 kV line. The entire length of the Hop crosses emergent, shrub, or forested wetlands. Hop 5 also crosses MBS Sites of Biodiversity Significance.[440]

394. On balance, the Blue/Orange Route best balances the factors listed in Minnesota Rules 7850.4100. The Blue/Orange Route has the fewer impacts to human settlement (residences, private land, and farmland); maximizes the use of public land; impacts the least amount of forested land; parallels existing corridors for 100 percent of its length; and is the least expensive alternative. In addition, the Blue/Orange Route also best meets the stated goals of the DOC-EERA Work Group: to maximize the use of public lands, to minimize the impacts to human settlement, and to utilize existing utility corridors as much as possible. Accordingly, the Blue/Orange Route is the best route option in the Beltrami North Central Variation Area.

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[438] *Id.*
[439] *Id.*
[440] Ex. 119, Vol. 1, Pt. 2 of 14, at 61, Map 4-7 (Final Environmental Impact Statement).

D. Route Specific Impacts – Central Section

395. There are eight variation areas within the Central Section: the Pine Island Variation Area, the Beltrami South Central Variation Area, the Beltrami South Variation Area, the North Black River Variation Area, the C2 Variation Area, the J2 Variation Area, the Northome Variation Area, and the Cutfoot Variation Area (FEIS Map 4-8).

396. In addition, there are two or more route alternatives in each variation area in the Central Section.

397. The Pine Island Variation Area comprises the entire Central Section and contains two route alternatives: the Blue Route and the Orange Route, as well one alignment modification (the Silver Creek WMA Alignment Modification) (FEIS Map 4-8).

398. The Beltrami South Central Variation Area contains two route alternatives: the Orange Route and the Beltrami South Central Variation (FEIS Map 4-10).

399. The Beltrami South Variation Area contains two route alternatives: the Orange Route and the Beltrami South Variation (FEIS Map 4-10).

400. The North Black River Variation Area contains two route alternatives: the Blue Route and the North Black River Variation (FEIS Map 4-11).

401. The C2 Variation Area contains two route alternatives: the Blue Route and the C2 Segment Option, as well as an Airstrip Alignment Modification (FEIS Map. 4-12).

402. The J2 Variation Area contains two route alternatives and two alignment modifications: the Orange Route, the J2 Segment Option, the Mizpah Alignment Modification, and the Gravel Pit Alignment Modification (FEIS Map. 4-13).

403. The Northome Variation Area contains two route alternatives: the J2 Segment Option and the Northome Variation (FEIS Maps 4-8 and 4-13).

404. The Cutfoot Variation Area contains two route alternatives: the Orange Route and the Cutfoot Variation (FEIS Maps 4-8 and 4-13).

405. The route alternatives contained in the Central Section are described below, organized by variation area.

1. Pine Island Variation Area

406. The Pine Island Variation Area encompasses the entire Central Section (FEIS Map 4-8). The Pine Island Variation Area contains the following variations: the Beltrami South Central Variation Area; the Beltrami South Variation Area; the North Black

River Variation Area; the C2 Variation Area; the J2 Variation Area, the Northome Variation Area, and the Cutfoot Variation Area.[441].

407. There are two alternative routes within the Pine Island Variation Area: the Proposed Blue Route and the Proposed Orange Route (FEIS Map 4-9).[442]. The Blue and Orange Routes diverge as the Project enters the Central Section (FEIS Map 4-8). The Orange Route continues on in a southeasterly direction, whereas the Blue Route turns to the east before continuing on southeasterly.[443]

408. The Orange Route through the Central Section includes five variation areas: the Beltrami South Central Variation Area, the Beltrami South Variation Area, the J2 Variation Area, the Northome Variation Area, and the Cutfoot Variation Area (FEIS Map 4-8). The Blue Route through the Central Section includes two variation areas: the North Black River Variation Area and the C2 Variation Area (FEIS Map 4-8).

409. The primary issues identified by commenters in the Pine Island Variation Area include the presence of large peatland complexes, the sharing of transmission line corridors, and the avoidance of SNAs.

a. Human Settlement - Aesthetics

410. The Blue Route would pass by more residences within 1,500 feet of the anticipated alignment (14 residences), including nine of those within 1,000 feet and one within 500 feet. The Orange Route would pass by only two residences within 1,500 feet of the anticipated alignment, and has no residences within 1,000 feet or 500 feet of the line. The Orange Route passes near the Big Bog Recreation Area,[444] though a photographic simulation indicates that it may not be visible from the recreation area.[445] The impact on the Big Bog Recreation Area is an issue of concern for residents in the community.

b. Human Settlement - Land Use Compatibility

411. The Blue Route and the Orange Route would both cross USFWS Interest Lands, with the Blue Route crossing eight acres and the Orange Route crossing 16 acres. The Blue Route could avoid the federal land by using the Silver Creek Alignment Modification. The Orange Route passes near the Big Bog Recreation Area, but may or may not be visible from that area. The Orange Route is slightly shorter (crossing 2,556 acres) and impacts fewer acres of private property (246 acres). The Blue Route crosses 562 acres of private property and is slightly longer (crossing 2,661 acres).[446]

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[441] Ex. 119, Vol. 1, Pt. 2 of 14, at 61, Map 4-7 (Final Environmental Impact Statement).
[442] Ex. 119, Vol. 1, Pt. 2 of 14, at 61, Map 4-7 (Final Environmental Impact Statement).
[443] Ex. 119, Vol. 1, Pt. 2 of 14, at 61, Map 4-7 (Final Environmental Impact Statement).
[444] Ex. 119, Vol. 1, Pt. 9 of 14, at 392 (Final Environmental Impact Statement).
[445] Ex. 119, Vol. 1, Pt. 9 of 14, at 392 (Final Environmental Impact Statement).
[446] Ex. 120 (DOC-EERA Relative Merits Table).

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

412. The Blue Route and the Orange Route would cross a relatively similar amount of farmland (666 and 693 acres, respectively) and state forest land (2,291 and 1,980 acres, respectively). While the Blue Route would cross significantly more expired or terminated mineral lease lands (1,205 acres versus 370 acres), the Orange Route would pass in close proximity to more aggregate resources (two resources).[447]

d. Archaeological and Historic Architectural Resources

413. The Blue Route would cross a section identified as containing one known archaeological resource. The Orange Route would not. However, the Orange Route has more historic architectural sites within one mile than the Blue Route (seven sites versus two sites, respectively).[448]

e. Natural Environment - Water Resources

414. The Blue Route and the Orange Route would cross similar numbers of watercourses or waterbodies (66 and 71 waterbodies, respectively). The Blue Route would cross one trout stream. All crossings are expected to be spanned. Both alternatives would cross relatively similar areas of FEMA-designated floodplain areas that cannot be spanned due to size. In addition, both alternatives would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion.[449]

f. Natural Environment - Vegetation

415. The Blue Route and the Orange Route would cross a relatively similar amount of forested land cover (2,554 and 2,520 acres, respectively).[450]

g. Natural Environment - Wildlife

416. Both the Blue Route and the Orange Route would cross WMAs and an Important Bird Area. The Orange Route would cross a greater portion of these protected areas. The Orange Route would cross 274 acres of WMA and 1,722 acres of Important Bird Areas; the Blue Route would cross only 49 acres of WMA and 1,405 acres of Important Bird Areas.[451]

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[447] *Id.*
[448] *Id.*; *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 392, 399-400 (Final Environmental Impact Statement).
[449] Ex. 120 (DOC-EERA Relative Merits Table).
[450] *Id.*
[451] *Id.*; *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 406, Table 6-73 (Final Environmental Impact Statement).

h. Rare and Unique Natural Resources - Federal and State Listed Species

417. There are no federally-listed species identified for either the Blue or Orange Routes. Both alternatives would cross critical habitat designated for gray wolf, but the Orange Route has more threatened and endangered NHIS records within one mile (85 NHIS records in the Orange Route, as compared to 60 NHIS records in the Blue Route). The Orange Route also has more state-listed NHIS records within one mile (21 versus 16 records), including six NHIS records for state-listed threatened and endangered species (compared to two records for the Blue Route).[452]

i. Rare and Unique Natural Resources - State Rare Communities

418. The Blue Route and the Orange Route would both have one SNA within 1,500 feet of their alignment; neither alternative has an SNA within its ROW. Unlike the Orange Route, the Blue Route would parallel an existing corridor in this area. The Orange Route would require a new corridor with new impacts. The Orange Route would cross more SNA WPAs, while the Blue Route would cross more Ecologically Important Lowland Conifer Areas. Both routes cross a relatively similar amount of MBS Sites of Biodiversity Significance.[453]

j. Use or Paralleling of Existing Rights-of-Way

419. Both the Blue and Orange Routes would parallel existing transmission line, roadway, and/or trail corridor through this segment. The Blue Route parallels for a longer distance (40 percent of the line segment); the Orange Route only parallels existing corridor for 23 percent of its length in this area.[454]

k. Electrical System Reliability

420. There are no issues with electrical reliability because there would not be three transmission lines paralleling the same corridor.[455]

l. Costs of Constructing, Operation, and Maintenance

421. The estimated cost of the Orange Route ranges from approximately $112.9 million to $118.9 million. The estimated cost of the Blue Route is approximately $118.5 million. Accordingly, the estimated costs of the routes are relatively similar in this area.[456]

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[452] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 406-07 (Final Environmental Impact Statement).
[453] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 407-08 (Final Environmental Impact Statement).
[454] Ex. 120 (DOC-EERA Relative Merits Table).
[455] Ex. 120 (DOC-EERA Relative Merits Table).
[456] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 409-11, Table 6-77 (Final Environmental Impact Statement).

m. Summary of the Route Alternatives in the Pine Island Variation Area

422. The Orange Route is 105 miles in length and parallels existing transmission lines for 23 percent of its total length through the Central Section. The Blue Route is slightly longer at 110 miles in length and parallels existing transmission lines for 40 percent of its total length through the Central Section.[457]

423. An overall review of the potential impacts to the built and natural environments of the two routing options through the Central Section identifies more similarities than differences. The potential impacts on agricultural land, forest, wetlands, floodplains, SNAs, archaeological and historic resources, and the natural environment are relatively similar. In addition, the estimated costs of the segments are relatively similar.

424. The differences between the routes which tip the scales in favor of the Blue Route are the potential impact that the Orange Route would have on protected wildlife in the region. While both routes cross a WMA and Important Bird Area, the Orange Route would cross a significantly greater portion of these areas than the Blue Route.[458] In addition, while both routing options cross USFWS Interest Lands, the Blue Route could avoid the federally-protected lands by using the Silver Creek Alignment Modification, which makes the Blue Route slighter more favorable. Finally, while the Blue Route has more potential impact on private property and residences, it parallels existing corridor for significantly more distance than the Orange Route, thereby resulting in fewer new impacts. The costs of these segments are not significantly different.[459]

425. Given the relatively close balance between the two route alternatives under the factors set forth in Minn. R. 7850.4100, the route that best meets the interests expressed by the public is the one that should prevail. In this case, the public commentary and community interests support the Blue Route over the Orange Route. This preference, along with the slightly more beneficial aspects of the Blue Route to the natural environment and the fact that the Blue Route parallels more existing corridor, renders the Blue Route a better option.

2. Beltrami South Central Variation Area

426. The Beltrami South Central Variation Area is located in the northwestern portion of the Central Section (FEIS Map 4-8). The Beltrami South Central Variation Area is within the Pine Island Variation Area and is bordered by the Beltrami South Variation Area to the southeast (FEIS Map 4-8).

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[457] Ex. 119, Vol. 1, Pt. 9 of 14, at 397, Table 6-69 (Final Environmental Impact Statement).
[458] Ex. 119, Vol. 1, Pt. 9 of 14, at 403-06, Table 6-73 (Final Environmental Impact Statement).
[459] Ex. 120 (DOC-EERA Relative Merits Table).

427. There are two route alternatives within the Beltrami South Central Variation Area: the Orange Route and the Beltrami South Central Variation.[460]

428. The primary issue identified in this variation area is a request by the USFWS to consider avoiding federal Interest Land.

a. Human Settlement - Aesthetics

429. There are no residences present within 1,500 feet of the anticipated alignment for either the Orange Route or Beltrami South Central Variation.[461]

b. Human Settlement - Land Use Compatibility

430. The Orange Route would cross 16 acres of USFWS Interest Lands, while the Beltrami South Central Variation avoids these lands. Neither alternative would cross private land.[462]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

431. Neither the Orange Route nor the Beltrami South Central Variation would cross farmland, although both routes would cross relatively similar amounts of state forest land. The Orange Route parallels existing corridor for its entire length. The Beltrami South Central Variation does not. There are no active or expired or terminated mineral lease lands or aggregate resources present in the ROW of either the routes.[463]

d. Archaeological and Historic Architectural Resources

432. There are no known archaeological or historic architectural resources that would be affected by either the Orange Route or the Beltrami South Central Variation.[464]

e. Natural Environment - Water Resources

433. There are no differences between the Orange Route and the Beltrami South Central Variation when it comes to crossing watercourses, waterbodies, or floodplains. Both the Orange Route and the Beltrami South Central Variation would cross similar areas of wetlands that are too large to span. The Orange Route and the Beltrami South Central Variation would result in relatively similar areas of forest wetland-type conversion. The Beltrami South Central Variation would, have the most shrub wetland, and therefore would require the most shrub wetland-type conversion.[465]

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[460] Ex. 119, Vol. 1, Pt. 9 of 14, at 409 (Final Environmental Impact Statement).
[461] Ex. 120 (DOC-EERA Relative Merits Table).
[462] *Id.*
[463] *Id.*
[464] *Id.*
[465] *Id.*

f. Natural Environment - Vegetation

434. Both the Orange Route and the Beltrami South Central Variation would cross relatively similar amounts of forested land cover. The Orange Route parallels existing corridor for its entire length, resulting in fewer new impacts.[466]

g. Natural Environment - Wildlife

435. Both the Orange Route and the Beltrami South Central Variation would cross a relatively similar amount of Important Bird Area. The Orange Route parallels existing corridor for its entire length.[467]

h. Rare and Unique Natural Resources - Federal and State Listed Species

436. There are no federally-listed species identified for either the Orange Route or the Beltrami South Central Variation. Both routes have the same number of NHIS records within one mile of the anticipated alignments.[468]

i. Rare and Unique Natural Resources - State Rare Communities

437. Both the Orange Route and the Beltrami South Central Variation would cross a relatively similar amount of MBS Sites of Biodiversity Significance. The Orange Route, however, would parallel existing utility corridors for its entire length. No SNAs would be located within 1,500 feet of either route, and neither route would cross an SNA WPA. There are no known Ecologically Important Lowland Conifer Areas that would be affected by either the Orange Route or the Beltrami South Central Variation.[469]

j. Use or Paralleling of Existing Rights-of-Way

438. The Orange Route is 1.2 miles in length and parallels the existing 500 kV line for 100 percent of its length through this Variation Area. The Beltrami South Central Variation is 1.7 miles in length and does not parallel any existing ROW.[470]

k. Electrical System Reliability

439. There are no identified issues related to electrical reliability in this variation area.[471]

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[466] *Id.*
[467] *Id.*
[468] *Id.*
[469] *Id.*
[470] Ex. 119, Vol. 1, Pt. 9 of 14, at 410-11, Table 6-78 (Final Environmental Impact Statement).
[471] Ex. 119, Vol. 1, Pt. 9 of 14, at 410-11, Table 6-78 (Final Environmental Impact Statement).

l. Costs of Constructing, Operation, and Maintenance

440. The estimated cost of the Beltrami South Central Variation is approximately $3.4 million. The estimated cost of the Orange Route is approximately $1.2 million.[472]

m. Summary of the Route Alternatives in the Beltrami South Central Variation Area

441. The Beltrami South Central Variation was developed as an alternative to the Orange Route in an effort to avoid USFWS Interest Lands.[473] While the Beltrami South Central Variation does avoid USFWS Interest Lands, it does not parallel an existing utility corridor like the Orange Route does. Accordingly, it would involve new impacts that the Orange Route would not have. In addition, the Beltrami South Central Variation is nearly triple the cost of the Orange Route.

442. Other than avoiding USFWS Interest Lands, there are no significant benefits to the Beltrami South Central Variation to justify the divergence from paralleling an existing transmission line infrastructure and the significant additional cost of the variation. Consequently, as between the Orange Route and the Beltrami South Central Variation, the Orange Route should be selected.

443. However, because the Blue Route through the Central Section/Pine Island Variation is more favorable than the Orange Route (as set forth above), the Administrative Law Judge need not make a recommendation as between the Orange Route and the Beltrami South Central Variation.

3. Beltrami South Variation Area

444. The Beltrami South Variation Area is located in the northwestern portion of the Central Section (FEIS Map 4-8).

445. There are two route alternatives within the Beltrami South Variation Area: the Orange Route and the Beltrami South Variation.[474]

446. The primary issue identified in this variation area is a request by the USFWS to consider avoiding USFWS Interest Land.[475]

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[472] Ex. 119, Vol. 1, Pt. 9 of 14, at 421-22, Table 6-87 (Final Environmental Impact Statement).
[473] Ex. 119, Vol. 1, Pt. 9 of 14, at 411-12, Table 6-80, Map 6-31 (Final Environmental Impact Statement).
[474] Ex. 119, Vol. 1, Pt. 9 of 14, at 422 (Final Environmental Impact Statement).
[475] Ex. 119, Vol. 1, Pt. 9 of 14, at 425 (Final Environmental Impact Statement).

a. Human Settlement - Aesthetics

447. No residences are present within 1,500-feet of the anticipated alignment of the Orange Route or the Beltrami South Variation.[476]

b. Human Settlement - Land Use Compatibility

448. The Beltrami South Variation would avoid USFWS Interest Lands. It is unknown whether the anticipated alignment of the Orange Route would impact USFWS Interest Lands as land surveys would need to be completed to determine whether the ROW would actually cross into USFWS Interest Lands. The Beltrami South Variation would cross two acres of private property and the Orange Route would only cross publicly-owned property.[477]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

449. Neither the Orange Route nor the Beltrami South Variation would cross farmland. Both routing options cross relatively similar amounts of state forest land. The Orange Route would parallel an existing transmission line corridor for its entire length. The Beltrami South Variation would not. In addition, the Beltrami South Variation crosses significantly more expired or terminated mineral lease lands than the proposed Orange Route (287 acres versus 58 acres).[478]

d. Archaeological and Historic Architectural Resources

450. There are no known archaeological or historic architectural resources that would be affected by either the Orange Route or the Beltrami South Variation.[479]

e. Natural Environment - Water Resources

451. There are no differences between the Orange Route and the Beltrami South Variation with respect to crossing watercourses, waterbodies, or floodplains. Both routes would cross relatively similar areas of wetlands that are too large to span, and would result in relatively similar areas of shrub and forested wetland-type conversion.[480]

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[476] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 423 (Final Environmental Impact Statement).
[477] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 424, Table 6-91 (Final Environmental Impact Statement).
[478] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 425, Table 6-92 (Final Environmental Impact Statement).
[479] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 427 (Final Environmental Impact Statement).
[480] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 428 (Final Environmental Impact Statement).

f. Natural Environment - Vegetation

452. Both the Orange Route and the Beltrami South Variation would cross relatively similar amounts of state forest land. The Orange Route would parallel an existing transmission line corridor for its entire length. The Beltrami South Variation would not.[481]

g. Natural Environment - Wildlife

453. Both the Orange Route and the Beltrami South Variation would cross a relatively similar amount of Important Bird Area. However, the Orange Route would parallel an existing utility corridor for its entire length.[482]

h. Rare and Unique Natural Resources - Federal and State Listed Species

454. There are no federally-listed species identified for either the Orange Route or the Beltrami South Variation. Both the Orange Route and the Beltrami South Variation cross minimal amounts of critical habitat designated for the gray wolf, with the Beltrami South Variation crossing slightly more of that habitat than the Orange Route does. In addition, the Beltrami South Variation has more NHIS records within one mile of the anticipated alignment, including an NHIS record for a threatened species.[483]

i. Rare and Unique Natural Resources - State Rare Communities

455. Both the Orange Route and the Beltrami South Variation would cross a relatively similar amount of MBS Sites of Biodiversity Significance. However, the Orange Route would parallel an existing transmission line corridor for its entire length, resulting in fewer new impacts to these areas. No SNAs would be located within 1,500 feet of either route, and neither route would cross an SNA WPA.[484]

j. Use or Paralleling of Existing Rights-of-Way

456. The Orange Route is 5.6 miles in length and parallels the existing 500 kV line for 100 percent of its length through this segment. The Beltrami South Variation is 7.5 miles in length and does not parallel any existing ROW.[485]

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[481] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 429-30, Table 6-94 (Final Environmental Impact Statement).
[482] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 430-31, Table 6-95 (Final Environmental Impact Statement).
[483] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 430-33 (Final Environmental Impact Statement).
[484] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 430-33, Table 6-97 (Final Environmental Impact Statement).
[485] Ex. 119, Vol. 1, Pt. 9 of 14, at 433, Table 6-97 (Final Environmental Impact Statement).

k. Electrical System Reliability

457. There are no identified issues related to electrical reliability in this variation area.[486]

l. Costs of Constructing, Operation, and Maintenance

458. The estimated cost of the Beltrami South Variation is approximately $9.9 million. The estimated cost of the Orange Route is approximately $5.8 million.[487]

m. Summary of the Route Alternatives in the Beltrami South Variation Area

459. The Beltrami South Variation was developed as an alternative to the Orange Route in an effort to avoid USFWS Interest Lands. While the Beltrami South Variation does avoid USFWS Interest Lands, it does not parallel an existing utility corridor like the Orange Route does. Moreover, the record is unclear as to whether the Orange Route would actually impact USFWS land due to how much of the Orange Route is outside of the USFWS property.

460. Other than full avoidance of the USFWS Interest Lands, the Beltrami South Variation does not offer the type of benefits necessary to justify divergence from an existing utility corridor. In addition, the Beltrami South Central Variation is significantly more expensive than the Orange Route – an expense that is not justified by the minor benefits of avoiding USFWS Interest Land in this short segment.

461. As between the Orange Route and the Beltrami South Central Variation, the Orange Route better meets the factors set forth in Minn. R. 7850.4100. However, because the Blue Route better meets the selection criteria in the Central Section/Pine Island Variation, it is unnecessary for the Administrative Law Judge to make a recommendation as between the Orange Route and the Beltrami South Central Variation.

4. North Black River Variation Area

462. The North Black River Variation Area is located in the north-central portion of the Central Section (FEIS Map 4-8).

463. There are two route alternatives within the North Black River Variation Area: the Blue Route and the North Black River Variation.[488]

464. The primary issues identified by the commenters in this Variation Area were: (1) whether non-ferrous mineral reserves can be avoided; and (2) whether to parallel the

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[486] Ex. 120 (DOC-EERA Relative Merits Table).
[487] *Id.*; *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 434-35, Table 6-99 (Final Environmental Impact Statement).
[488] Ex. 119, Vol. 1, Pt. 9 of 14, at 435 (Final Environmental Impact Statement).

existing 230 kV line corridor or deviate from the line and create a new corridor to avoid private residences.

a. Human Settlement - Aesthetics

465. The North Black River Variation would pass by five residences within 1,500 feet of the anticipated alignment, including four within 1,000 feet and three within 500 feet of the alignment. The Blue Route would pass by only one residence within 1,500 feet of the anticipated alignment, and would have no residences within 1,000 feet or 500 feet of the alignment. The North Black River Variation would parallel existing transmission line corridor for its entire length.[489] The Blue Route diverges from the existing 230 kV line so as to avoid impacts on residences.

b. Human Settlement - Land Use Compatibility

466. The North Black River Variation would cross 65 acres of private land. The Blue Route would cross only 20 acres of private land.[490]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

467. The North Black River Variation would cross 64 acres of farmland and the Blue Route would cross 41 acres of farmland. Both the Blue Route and the North Black River Variation would cross a relatively similar amount of state forest land (188 and 156 acres, respectively). In addition, both routes would cross a relatively similar amount of expired or terminated mineral lease lands.[491]

d. Archaeological and Historic Architectural Resources

468. There are no known archaeological and historic architectural resources that would be affected by either the Blue Route or the North Black River Variation.[492]

e. Natural Environment - Water Resources

469. There would be no differences between the Blue Route and the North Black River Variation with respect to crossing watercourses, waterbodies, and floodplains. In addition, both routes would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion.

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[489] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 435-36, Table 6-100 (Final Environmental Impact Statement).
[490] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 437-38, Table 6-102 (Final Environmental Impact Statement).
[491] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 439, Table 6-103 (Final Environmental Impact Statement).
[492] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 442 (Final Environmental Impact Statement).

f. Natural Environment - Vegetation

470. Both the Blue Route and the North Black River Variation would cross a relatively similar amount of forested land cover. However, the North Black River Variation would parallel an existing utility corridor, while the Blue Route would not.[493]

g. Natural Environment - Wildlife

471. Both the Blue Route and the North Black River Variation would cross a relatively similar amount of Important Bird Area. Only the North Black River Variation would parallel an existing utility corridor.[494]

h. Rare and Unique Natural Resources - Federal and State Listed Species

472. There are no federally-listed species identified in either the Blue Route or the North Black River Variation. Both routes avoid critical habitat designated for the gray wolf. There are no documented NHIS records within one mile of either route.[495]

i. Rare and Unique Natural Resources - State Rare Communities

473. Both the Blue Route and the North Black River Variation would cross a relatively similar amount of an SNA WPA and MBS Sites of Biodiversity Significance. The North Black River Variation would parallel an existing utility corridor. There are no known Ecologically Important Lowland Conifer Areas that would be affected by either of the routing options.[496]

j. Use or Paralleling of Existing Rights-of-Way

474. The North Black River Variation is 9.2 miles in length and parallels an existing 230 kV and 69 kV line and County Road 86 for 100 percent of its length. The Blue Route is 8.4 miles in length and does not parallel any existing ROW.[497]

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[493] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 439-40, Table 6-103 (Final Environmental Impact Statement).
[494] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 446, Table 6-106 (Final Environmental Impact Statement).
[495] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 447 (Final Environmental Impact Statement).
[496] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 447-48 (Final Environmental Impact Statement).
[497] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 447, Table 6-107 (Final Environmental Impact Statement).

k. Electrical System Reliability

475. The parties did not identify issues of electrical reliability with either segment option.[498]

l. Costs of Constructing, Operation, and Maintenance

476. The estimate cost of the North Black River Variation is within 20 percent of the cost of the Blue Route (approximately $10.5 million versus $9.9 million).[499]

m. Summary of the Route Alternatives in the North Black River Variation Area

477. The North Black River Variation was developed to avoid non-ferrous mineral reserves and to maximize ROW paralleling with the existing 230 kV line corridor and roadways. However, the North Black River Variation would cross more private ownership lands than the Blue Route (65 acres and 20 acres, respectively) and would impact more residences within close proximity to the line.[500] The Blue Route expressly avoids the homes.

478. Overall, the Blue Route strikes the best balance between the completing factors. Often, when weighing the goal of limiting the proliferation of transmission line corridors (i.e., using or paralleling of existing ROW) against the impact on human settlements, it is the site-specific features that tip the scales in favor of one route over another. In this instance, divergence from the paralleling of the existing ROWs is justified given the limited space between the existing lines and local residences.[501] Accordingly, the Blue Route best satisfies the factors set forth in Minn. R. 7850.4100.

5. C2 Variation Area

479. The C2 Variation Area is located in the northeastern portion of the Central Section (FEIS Map 4-8).

480. There are two routing options within the C2 Variation Area: the Blue Route and the C2 Segment Option.[502]

481. The primary issue identified by commenters in this variation area is whether to parallel the existing 230 kV line corridor or to develop variations that do not parallel existing transmission line corridors.

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[498] Ex. 120 (DOC-EERA Relative Merits Table).
[499] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 448-49, Table 6-109 (Final Environmental Impact Statement).
[500] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 435-39 (Final Environmental Impact Statement).
[501] Ex. 119, Appendix S, Map Book Central Sec., Pt. 1 of 6, Maps 39-41 (Final Environmental Impact Statement).
[502] Ex. 119, Vol. 1, Pt. 9 of 14, at 448-49 (Final Environmental Impact Statement).

a. Human Settlement – Aesthetics

482. The C2 Segment Option would pass by 29 residences within 1,500 feet of the anticipated alignment, including 14 residences within 1,000 feet and four within 500 feet of the alignment. In contrast, the Blue Route would not pass by any residences within 1,500 feet of its alignment. However, the C2 Segment Option would parallel existing transmission line corridor for the majority of its length, and the Blue Route would not.[503]

b. Human Settlement - Land Use Compatibility

483. The land cover for both the C2 Segment Option and the Blue Route is forested and/or swamp land.[504] The C2 Segment Option would pass near an airstrip, but could avoid potential impacts by using the Airstrip Alignment Modification identified in the FEIS.[505] The C2 Segment Option would cross 462 acres of private property in comparison to the Blue Route, which would cross only 66 acres of private property.[506]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

484. Both routes cross farmland, but the C2 Segment Option would have the largest impact on agriculture, crossing 326 acres of farmland as compared to 172 acres crossed by the Blue Route. In contrast, the Blue Route crosses significantly more state-owned forest land (797 acres) than does the C2 Segment Option (274 acres). In addition, the C2 Segment Option would cross 67 acres of expired or terminated mineral lease lands, whereas the Blue Route would cross only 16 acres of expired or terminated mineral lease lands.[507]

d. Archaeological and Historic Architectural Resources

485. There are no known archaeological and historic architectural resources that would be affected by either the Blue Route or the C2 Segment Option.[508]

e. Natural Environment - Water Resources

486. The Blue Route would cross double the number of watercourses or waterbodies than the C2 Segment Option (17 versus 8), however all crossings are

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[503] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 449, Table 6-110 (Final Environmental Impact Statement).
[504] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 451, Table 6-111 (Final Environmental Impact Statement).
[505] Ex. 119, Vol. 1, Pt. 2 of 14, at 63, Map 4-12 (Final Environmental Impact Statement).
[506] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 451-52, Table 6-112 (Final Environmental Impact Statement).
[507] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 453-54, Table 6-113 (Final Environmental Impact Statement).
[508] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 456-57, Table 6-114 (Final Environmental Impact Statement).

expected to be spanned for both routes. Both the Blue Route and the C2 Segment Option would cross FEMA-designated floodplain areas, with the C2 Segment Option crossing the most floodplain (28 acres). Both the Blue Route and the C2 Segment Option would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion.[509]

f. Natural Environment - Vegetation

487. The Blue Route would cross the least amount of forested land cover (789 acres), while the C2 Segment Option would cross 1,080 acres of forested property. The C2 Segment Option would parallel existing transmission line corridors for most of its length. The Blue Route would not.[510]

g. Natural Environment - Wildlife

488. Both the Blue Route and the C2 Segment Option would cross a relatively similar amount of Important Bird Area, with the Blue Route impacting slightly more acreage. The C2 Segment Option would parallel existing transmission line corridors for most of its length, while the Blue Route does not parallel any existing corridor.[511]

h. Rare and Unique Natural Resources - Federal and State Listed Species

489. There are no federally-listed species identified in the Blue Route or the C2 Segment Option. Both Blue Route and the C2 Segment Option would cross the same amount of critical habitat designated for the gray wolf. In addition, both the Blue Route and the C2 Segment Option have the same number of NHIS records within one mile of the anticipated alignment. However, the C2 Segment Option has an NHIS record for a state-threatened species and the Blue Route does not.[512]

i. Rare and Unique Natural Resources - State Rare Communities

490. The C2 Segment Option would have an SNA within 1,500 feet, but not within its ROW. The C2 Segment Option also passes through a SNA WPA. Both the Blue Route and the C2 Segment Option would cross a relatively similar amount of MBS Sites of Biodiversity Significance and Ecologically Important Lowland Conifer Areas. However,

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[509] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 457-59, Table 6-115 (Final Environmental Impact Statement).
[510] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 460-61, Table 6-116 (Final Environmental Impact Statement).
[511] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 461-62 (Final Environmental Impact Statement).
[512] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 462-63 (Final Environmental Impact Statement).

the C2 Segment Option would parallel existing transmission line corridors for most of its length, while the Blue Route would not.[513]

j. Use or Paralleling of Existing Rights-of-Way

491. The C2 Segment Option is 46 miles in length and parallels an existing 230 kV line for 81 percent of its length. The Blue Route in this variation area is 32.8 miles in length and does not parallel any existing ROW.[514]

k. Electrical System Reliability

492. There are no identified issues related to electrical reliability in this variation area.[515]

l. Costs of Constructing, Operation, and Maintenance

493. The estimated cost of the C2 Segment Option is approximately $54.5 million. The estimated cost of the Blue Route is approximately $35.8 million.[516]

m. Summary of the Route Alternatives in the C2 Variation Area

494. The C2 Segment Option was developed to parallel an existing 230 kV line corridor and avoid both the Pine Island State Forest and the Koochiching State Forest.[517] While the C2 Segment Option avoids state forest land, it does so at the expense of impacts on private property. The C2 Segment Option would pass by 14 residences within 1,500 feet of the anticipated alignment; whereas there would be no residences within 1,500 feet of the Blue Route. In addition, the C2 Segment Option impacts 167 acres of agricultural land and the Blue Route impacts none. Finally, and not insignificantly, the C2 Segment Option is estimated to cost nearly $19 million more than the Blue Route.[518]

495. On balance, the Blue Route better satisfies the factors to be considered as mandated by Minn. R. 7850.4100. As in the North Black River Variation Area, when weighing the desire to limit the proliferation of transmission line corridors against the concerns associated with human impacts, the site-specific features can tip the scales one way or the other. The Commission should consider the values identified by the DOC-EERA Work Group which recommended that the Commission select a route that maximizes the use of state-owned property and minimizes the impact on human settlement. Here, the Blue Route is located entirely within state forest land and would not impact any private landowners or homes. Accordingly, divergence from the existing 230

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[513] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 463-64, Table 6-119 (Final Environmental Impact Statement).
[514] Ex. 119 at 449, Table 6-110 (Final Environmental Impact Statement).
[515] Ex. 120 (DOC-EERA Relative Merits Table).
[516] Ex. 119, Vol. 1, Pt. 9 of 14, at 465, Table 6-121 (Final Environmental Impact Statement).
[517] Ex. 119, Vol. 1, Pt. 9 of 14, at 453-54, Table 6-113, Figure 6-77 (Final Environmental Impact Statement).
[518] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 449-53, 465, Tables 6-110, 6-113, 6-121 (Final Environmental Impact Statement).

kV corridor is justified given the much larger impacts to human settlement and higher cost that the C2 Segment Option entails.

6. J2 Variation Area

496. The J2 Variation Area is located in the southern portion of the Central Section (FEIS Map 4-8).

497. There are two variations within the J2 Variation Area: the Orange Route and the J2 Segment Option.[519] The Orange Route is 42.2 miles in length and the J2 Segment Option is 45.2 miles in length. Neither alternative would parallel any existing ROW.[520]

498. The primary issue identified by commenters in the J2 Variation Area is the presence of large peatland complexes.

a. Human Settlement - Aesthetics

499. The J2 Segment Option would pass by six residences within 1,500 feet of the anticipated alignment, including five within 1,000 feet and one within 500 feet. The Orange Route would have no residences within 1,500 feet of its alignment.[521]

b. Human Settlement - Land Use Compatibility

500. The J2 Segment Option would cross 28 acres of USFWS Interest Lands and would require a provisional special use permit, which could impact the timelines required for construction as well as the in-service date. While both alternatives are primarily located on public lands, the J2 Segment Option would potentially impact nearly three times as many acres of privately-held land than the Orange Route (229 acres versus 79 acres of private land).[522]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

501. The J2 Segment Option would impact 700 acres of agricultural land, in comparison to the Orange Route which would impact 494 acres of agricultural land. Both the Orange Route and the J2 Segment Option would cross a relatively similar amount of state forest land (851 acres and 715 acres, respectively). In addition, both alternatives would cross a relatively similar amount of expired or terminated mineral lease lands, however the Orange Route would pass by more aggregate resources.[523]

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[519] Ex. 119, Vol. 1, Pt. 9 of 14, at 465 (Final Environmental Impact Statement).
[520] Ex. 119, Vol. 1, Pt. 9 of 14, at 466-67, Table 6-122 (Final Environmental Impact Statement).
[521] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 466-67 (Final Environmental Impact Statement).
[522] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 468-69 (Final Environmental Impact Statement).
[523] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 469-73 (Final Environmental Impact Statement).

d. Archaeological and Historic Architectural Resources

502. The J2 Segment Option has more historic architectural sites within one mile than the Orange Route (seven sites versus two sites, respectively), some of these sites may not actually be impacted. There are no known archaeological sites that would be affected by either of the alternatives.[524]

e. Natural Environment - Water Resources

503. Both the Orange Route and the J2 Segment Option would cross relatively similar numbers of watercourses or waterbodies (30 and 39, respectively), all of which are expected to be spanned. The Orange Route would cross FEMA-designated floodplains; however the areas are small and would likely be spanned. Both alternatives would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion.[525]

f. Natural Environment - Vegetation

504. Both the Orange Route and the J2 Segment Option would cross a relatively similar amount of forested land cover. For either option, the direct, adverse impacts are expected to be minimal.[526]

g. Natural Environment - Wildlife

505. The Orange Route would cross 262 acres of Important Bird Area, compared to the 72 acres of Important Bird Area crossed by the J2 Segment Option.[527] .

h. Rare and Unique Natural Resources - Federal and State Listed Species

506. There are no federally-listed species identified for either the Orange Route or the J2 Segment Option. The Orange Route crosses more critical habitat designated for the gray wolf than the J2 Segment Option (42 miles and 13 miles, respectively), and the Orange Route has more state-listed NHIS records within one mile..[528]

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[524] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 474-75 (Final Environmental Impact Statement).
[525] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 475-77 (Final Environmental Impact Statement).
[526] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 477-78, Table 6-128 (Final Environmental Impact Statement).
[527] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 478-79, Table 1-129 (Final Environmental Impact Statement).
[528] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 479-80, Table 1-130 (Final Environmental Impact Statement).

i. Rare and Unique Natural Resources - State Rare Communities

507. The Orange Route would cross more MBS Sites of Biodiversity Significance than the J2 Segment Option (489 acres and 185 acres, respectively). There are no known Ecologically Important Lowland Conifer Areas that would be affected by either the Orange Route or the J2 Segment Option.[529]

j. Use or Paralleling of Existing Rights-of-Way

508. Neither the Orange Route nor the J2 Segment Option would parallel existing transmission line, roadways, or trail corridors.[530]

k. Electrical System Reliability

509. There are no identified issues related to electrical reliability in this variation area.[531]

l. Costs of Constructing, Operation, and Maintenance

510. The estimated cost of the J2 Segment Option is approximately $52.1 million. The estimated cost of the Orange Route is approximately $48.7 million.[532]

m. Summary of the Route Alternatives in the J2 Variation Area

511. The J2 Segment Option would pass by six residences within 1,500 feet of the anticipated alignment; the Orange Route would not pass by any residences within 1,500 feet of the anticipated alignment. In addition, the J2 Segment Option would cross 150 more acres of private ownership lands than the Orange Route. While both alternatives are primarily located on public land, the J2 Segment Option would cross 28 acres of USFWS Interest Lands and the Orange Route would cross none.[533] Crossing USFWS Interest Lands could be avoided by using the Northome Variation within the Northome Variation Area (discussed below).

512. Because the Blue Route best meets the routing factors articulated in Minn. R. 7850.4100 for the Central Section as a whole, it is unnecessary to determine whether the Orange Route or J2 Segment Option presents the best alternative in the J2 Variation Area.

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[529] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 480-81 (Final Environmental Impact Statement).
[530] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 481 (Final Environmental Impact Statement).
[531] Ex. 120 (DOC-EERA Relative Merits Table).
[532] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 482, Table 6-133 (Final Environmental Impact Statement).
[533] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 465-69 (Final Environmental Impact Statement).

7. Northome Variation Area

513. The Northome Variation Area is located in the south-central portion of the Central Section (FEIS Map 4-8). The Northome Variation Area is within the Pine Island Variation Area and the J2 Variation Area.

514. There are two route alternatives within the Northome Variation Area: the J2 Segment Option and the Northome Variation.[534] The J2 Segment Option is 3.7 miles in length and the Northome Variation is 4.0 miles in length. Neither alternative parallels existing ROW.[535]

515. The primary issue identified in the Northome Variation Area is the request by the USFWS to consider avoiding USFWS Interest Lands.

a. Human Settlement - Aesthetics

516. No residences are present within 1,500 feet of the anticipated alignment for either the J2 Segment Option or the Northome Variation.[536]

b. Human Settlement - Land Use Compatibility

517. The J2 Segment Option would cross 28 acres of USFWS Interest Lands, which would require a provisional special use permit. The Northome Variation impacts more public lands (81 acres) than the J2 Segment Option (67 acres); and the J2 Segment Option impacts more acres of private lands (25 acres) than the Northome Variation (18 acres).[537]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

518. The J2 Segment Option would impact 64 acres of agricultural land and the Northome Variation would impact none. Neither alternative impacts state forest lands. In addition, no active or expired or terminated mineral lease lands or aggregate resources are present in the ROW of either option.[538]

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[534] Ex. 119, Vol. 1, Pt. 9 of 14, at 482 (Final Environmental Impact Statement).
[535] Ex. 119, Vol. 1, Pt. 9 of 14, at 483, Table 6-134 (Final Environmental Impact Statement).
[536] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 482-83 (Final Environmental Impact Statement).
[537] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 483-84, Table 6-136 (Final Environmental Impact Statement).
[538] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 485-86, Table 6-137 (Final Environmental Impact Statement).

d. Archaeological and Historic Architectural Resources

519. The Northome Variation could potentially impact one archaeological site. There are no known historic architectural sites that would be affected by either the J2 Segment Option or the Northome Variation.[539]

e. Natural Environment - Water Resources

520. Both the J2 Segment Option and the Northome Variation would cross a few PWI and non-PWI waters. It is anticipated that the crossings could be spanned. Neither alternative would impact FEMA-designated floodplains. The J2 Segment Option and the Northome Variation would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of forest wetland-type conversion.[540]

f. Natural Environment - Vegetation

521. Both the J2 Segment Option and the Northome Variation would cross a relatively similar amount of forested land cover.[541]

g. Natural Environment - Wildlife

522. The Northome Variation would cross a MNDNR-designated "shallow lake." No WMAs or Important Bird Areas would be impacted by either route alternative.[542]

h. Rare and Unique Natural Resources - Federal and State Listed Species

523. There are no federally-listed species identified for these two routing options. There are no documented NHIS records within one mile of the anticipated alignment for either routing option.[543]

i. Rare and Unique Natural Resources - State Rare Communities

524. No records of rare resources or communities have been documented in the ROW of either the J2 Segment Option or the Northome Variation.[544]

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[539] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 487-88, Table 6-138 (Final Environmental Impact Statement).
[540] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 488-89 (Final Environmental Impact Statement).
[541] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 489-90 (Final Environmental Impact Statement).
[542] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 490-91, Table 6-141 (Final Environmental Impact Statement).
[543] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 492 (Final Environmental Impact Statement).
[544] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 492 (Final Environmental Impact Statement).

j. Use or Paralleling of Existing Rights-of-Way

525. Neither the J2 Segment Option nor the Northome Variation would parallel existing transmission line, roadways, or trail corridors.[545]

k. Electrical System Reliability

526. There are no identified issues related to electrical reliability in this variation area.[546]

l. Costs of Constructing, Operation, and Maintenance

527. The estimated cost of the Northome Variation (approximately $6.4 million) is more than 20 percent above the estimated cost of the J2 Segment Option (approximately $4.1 million).[547]

m. Summary of the Route Alternatives in the Northome Variation Area

528. The material differences between the J2 Segment Option and the Northome Variation boil down to impacts on human settlement, the use of USFWS Interest Land, and cost. The J2 Segment Option impacts more private land than the Northome Variation. In addition, the J2 Segment Option would cross 28 acres of USFWS Interest Lands, whereas the Northome Variation would not cross any USFWS Interest Lands. However, the cost of the Northome Variation is more than $2 million more than the cost of the J2 Segment Option.

529. Because the Blue Route best meets the routing criteria for the Central Section/Pine Island Variation Area as a whole, it is unnecessary to make a recommendation between the J2 Segment Option and the Northome Variation.

8. Cutfoot Variation Area

530. The Cutfoot Variation Area is located in the southeastern portion of the Central Section (FEIS Map 4-8).

531. There are two variations within the Cutfood Variation Area: the Orange Route and the Cutfoot Variation.[548] The Orange Route is 4.2 miles in length, and the Cutfoot Variation is 4.8 miles in length. Neither alternative parallels any existing ROW.[549]

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[545] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 492 (Final Environmental Impact Statement).
[546] Ex. 120 (DOC-EERA Relative Merits Table).
[547] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 493, Table 6-142 (Final Environmental Impact Statement).
[548] Ex. 119, Vol. 1, Pt. 9 of 14, at 493 (Final Environmental Impact Statement).
[549] Ex. 119, Vol. 1, Pt. 9 of 14, at 493-94, Table 6-143 (Final Environmental Impact Statement).

532. The primary issue identified by commenters in the Cutfoot Variation Area is the request to avoid private land containing old cedar stands.

a. Human Settlement - Aesthetics

533. No residences are present within 1,500 feet of the anticipated alignment for either the Orange Route or the Cutfoot Variation.[550]

b. Human Settlement - Land Use Compatibility

534. Both the Cutfoot Variation and the Orange Route are located entirely within public land and would have no impact on private land.[551]

*c. La*nd-*Based Economies - Agriculture, Forestry, and Mineral Resources*

535. Neither the Orange Route nor the Cutfoot Variation would cross agricultural land. Both routes are entirely within state forest land. The Orange Route contains more acres of expired or terminated mineral lease lands than the Cutfoot Variation (29 acres versus 4 acres, respectively). Both the Orange Route and the Cutfoot Variation have aggregate resources within the ROW.[552]

d. Archaeological and Historic Architectural Resources

536. There are no known archaeological or historic architectural resources that would be affected by either the Orange Route or the Cutfoot Variation.[553]

e. Natural Environment - Water Resources

537. The Orange Route would cross two watercourses or waterbodies, both of which are expected to be spanned. The Cutfoot Variation would cross none. Neither route would impact FEMA-designated floodplains. Both routes would cross relatively similar areas of wetlands that are too large to span, and would result in relatively similar areas of shrub and forested wetland-type conversion. These impacts are anticipated to be minimal due to the amount of surrounding forested and shrub wetlands in the region.[554]

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[550] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 493-94 (Final Environmental Impact Statement).
[551] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 493-94 (Final Environmental Impact Statement).
[552] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 494-98 (Final Environmental Impact Statement).
[553] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 499 (Final Environmental Impact Statement).
[554] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 500-01 (Final Environmental Impact Statement).

f. Natural Environment - Vegetation

538. Both the Orange Route and the Cutfoot Variation would cross a relatively similar amount of forested land cover.[555]

g. Natural Environment - Wildlife

539. Neither the Orange Route nor the Cutfoot Variation would cross designated wildlife resources.[556]

h. Rare and Unique Natural Resources - Federal and State Listed Species

540. There are no federally-listed species identified for either the Orange Route or the Cutfoot Variation. Both alternatives would cross minimal amounts of critical habitat designated for the gray wolf. There are no NHIS records within one mile of either route.[557]

i. Rare and Unique Natural Resources - State Rare Communities

541. Both the Cutfoot Variation and the Orange Route would potentially impact similar amounts of MBS Sites of Biodiversity Significance. No SNAs would be located within 1,500 feet of either route, and neither route would would cross an SNA WPAs.[558]

j. Use or Paralleling of Existing Rights-of-Way

542. Neither the Orange Route nor the Cutfoot Variation would parallel existing transmission line, roadways, or trail corridors.[559]

k. Electrical System Reliability

543. There are no issues with electrical reliability related to either the Orange Route or the Cutfoot Alternative in this variation area.[560]

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[555] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 502 (Final Environmental Impact Statement).
[556] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 502-03 (Final Environmental Impact Statement).
[557] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 503-04 (Final Environmental Impact Statement).
[558] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 504 (Final Environmental Impact Statement).
[559] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 504-05 (Final Environmental Impact Statement).
[560] Ex. 120 (DOC-EERA Relative Merits Table).

l. Costs of Constructing, Operation, and Maintenance

544. The estimated cost of the two alternatives are relatively similar: approximately $5.6 million for the Orange Route and $6.2 million for the Cutfoot Variation.[561]

m. Summary of the Route Alternatives in the Cutfoot Variation Area

545. As set forth above, the Orange Route and the Cutfoot Variation have similar impacts under the factors to be considered in Minn. R. 7850.4100. The Orange Route is only slightly more favorable due to its lower cost. However, because the Blue Route best meets the route selection criteria for the Central Section/Pine Island Variation Area as a whole, it is unnecessary to decide between the Orange Route and the Cutfoot Variation.

E. Route Specific Impacts – East Section

546. There are five variation areas within the East Section: the Effie Variation Area, the East Bear Lake Variation Area, the Balsam Variation Area, the Dead Man's Pond Variation Area, and the Blackberry Variation Area (FEIS Map 4-14). In addition, there are five alignment modifications in the East Section: the Bass Lake Alignment Modification, the Wilson Lake Alignment Modification, the Grass Lake Alignment Modification, the Dead Man's Pond Alignment Modification, and the Trout Lake Alignment Modification.[562]

547. The Effie Variation Area contains three route alternatives: the Blue Route, the Orange Route, and the Effie Variation. In addition, the Effie Variation Area contains two alignment modifications: the Bass Lake Alignment Modification and the Wilson Lake Alignment Modification (FEIS Map 4-15).

548. The East Bear Lake Variation Area contains two route alternatives: the Orange Route and the East Bear Lake Variation (FEIS Map 4-16).

549. The Balsam Variation Area contains three route alternatives: the Blue Route, the Orange Route and the Balsam Variation (FEIS Map 4-17). It also contains one alignment modification: the Grass Lake Alignment Modification.

550. The Dead Man's Pond Variation Area contains two route alternatives: the Blue Route and the Dead Man's Pond Variation (FEIS Map 4-17). It also contains one alignment modification: the Dead Man's Pond Alignment Modification (FEIS Map 4-17).

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[561] Ex. 120 (DOC-EERA Relative Merits Table); *see also* Ex. 119, Vol. 1, Pt. 9 of 14, at 505, Table 6-151 (Final Environmental Impact Statement).
[562] Ex. 119, Vol. 1, Pt. 11 of 14, at 543 (Final Environmental Impact Statement).

551. The Blackberry Alternative contains two variations and one alignment modification: the Blue Route, the Orange Route, and the Trout Lake Alignment Modification (FEIS Map 4-17).

1. Effie Variation Area

552. The Effie Variation Area is located in the northern portion of the East Section (FEIS Map 4-14 and Map 4-15). There are three variations within the Effie Variation Area: the Blue Route; the Orange Route; and the Effie Variation (FEIS Map 4-15).

553. There are also two alignment modifications in the Effie Variation Area: the Bass Lake Alignment Modification (to the Orange Route) and the Wilson Lake Alignment Modification (to the Blue Route) (FEIS Map 4-15).

554. The Blue Route is 41.1 miles in length, the Orange Route is 44.6 miles in length, and the Effie Variation is 49.8 miles in length. Neither the Blue nor the Orange Route parallels any existing utility ROWs. The Effie Variation parallels existing utility corridors for 80 percent of its distance.[563]

555. The anticipated alignment of the Effie Variation would be along the west side of Xcel Energy's existing 500 kV line. An existing 230 kV line parallels the east side of the Xcel Energy existing 500 kV line. The Effie Variation would result in a third HVTL in the same corridor.[564]

556. The Blue Route and Effie Variation have a common start point where the existing 500 kV and 230 kV line corridors converge near Lofgrin Truck Trail in the northwestern portion of the Effie Variation Area. The Orange Route and the Effie Variation share an approximately 3.5 mile portion of their route/alignment in this area, just before the Effie Variation rejoins the Blue Route and where the Orange crosses the Blue Route in the southern portion of the Effie Variation Area.[565]

557. The primary issues identified by commenters related to the Effie Variation Area are the use of existing powerline corridors in the area, new environmental impacts to pristine wilderness areas of the state, forest fragmentation, conservation of the natural environment, impacts on sensitive areas of wildlife and vegetation, and potential for utility reliability concerns related to "triple paralleling" of HVTLs in the same corridor. (See Public Comment section above.)

558. With the exception of power companies, public comment from residents and neighboring communities overwhelmingly supports the Effie Variation. (See Public Comments Section above.) Minnesota Power and three other utility companies note potential maintenance issues and remote reliability risks associated with catastrophic events where three HVTLs would be located in one corridor. (See Comments of Xcel

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[563] Ex. 119, Vol. 1, Pt. 11 of 14, at 544, Table 6-160 (Final Environmental Impact Statement).
[564] COMMENTS BY XCEL ENERGY (September 1, 2015) (eDocket No. 20159-113672-01)
[565] Ex. 119, Vol. 1, Pt. 3 of 14, at 80-81, Maps 4-14, 4-15 (Final Environmental Impact Statement).

Energy, Minnkota Power Cooperative, Inc., and Great River Energy in Public Comments Section above.)[566]

a. Human Settlement - Aesthetics

559. Of the three route options in the Effie Variation Area, the Effie Variation would have the most impact on residences: there are 14 residences within 1,500 feet of the anticipated alignment. Of the residences within the Effie Variation alignment, 16 residences would be within 1,000 feet of the line, 12 would be within 1,000 feet, and two would be within 500 feet. In contrast, the Blue Route has four residences within 1,500 feet of its anticipated alignment, one of those would be within 1,000 feet, but no residences would be within 500 feet of the alignment. The Orange Route would pass by five residences within 1,500 feet of the anticipated alignment; of those, two would be within 1,000 feet and one would be within 500 feet of the alignment.[567]

b. Human Settlement - Land Use Compatibility

560. There are no land use compatibility issues identified for the Blue Route, Orange Route, or Effie Variation. All three route alternatives cross a relatively similar amount of private land and all three alternatives are located almost entirely on public lands.[568]

c. Land Based Economies - Agriculture, Forestry, and Mineral Resources

561. None of the three route alternatives in the Effie Variation Area would impact agricultural land. All three route alternatives would be mostly located within state forest land and would cross a relatively similar amount of active and expired/terminated mineral lease lands. However, the Effie Variation parallels an existing transmission line corridor for 80 percent of its length, reducing the new impacts to the area and avoiding new forest fragmentation that would occur as a result of the Orange and Blue Routes. Neither the Blue Route nor the Orange Route parallels existing utility corridors.[569]

d. Archaeological and Historic Architectural Resources

562. Both the Blue and Orange Routes would potentially impact one historic architectural site within 5,280 feet. The Effie Variation would potentially impact three sites. However, the permitted route width will be less than 5,280 feet so some sites may not be impacted. The Blue and Orange Routes would not impact any archaeological sites. The Effie Variation would potentially pass two sites.[570]

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[566] COMMENT BY XCEL ENERGY (Sept. 1, 2015) (eDocket No. 20159-113672-01); COMMENT BY MINNKOTA POWER (Sept. 4, 2015) (eDocket No. 20159-113774-01); PUBLIC COMMENT BY GREAT RIVER ENERGY (Oct. 1, 2015) (eDocket No. 201510-114494-01).
[567] Ex. 120 (DOC-EERA Relative Merits Table).
[568] *Id.*
[569] *Id.*
[570] *Id.*

e. Natural Environment - Water Resources

563. All three alternatives will require crossing a number of waterbodies. However, it is anticipated that these crossings will be able to be spanned and no structures would be required in the waterway. The Effie Variation would not impact any FEMA-designated floodplains. The Blue and Orange Routes would both cross a Zone A floodplain; but floodplains could be spanned so that no structures would be placed in the floodplains. All three alternatives would cross a relatively similar number of acres of wetlands that are too large to span.[571] However, as the MNDNR noted:

> Comparing the acres of wetlands impacted by each route is not always an adequate comparison because the type of wetland that will be impacted is a very important factor. In regard to the Effie Variation, wetlands are already impacted by an existing transmission line so they are already somewhat degraded in quality. Whereas, the wetlands in the proposed [Orange and Blue] routes are currently intact, un-fragmented wetlands with no transmission line impacts. Impacts of a new transmission line include fragmentation of habitat, decreased habitat value for wildlife, conversion of habitat…, and risk of invasive species….The impact of a new transmission line through intact wetlands is far greater than the impact of adding a transmission line to a wetland that is already impacted by an existing transmission line.[572]

564. Consequently, as between the three alternatives in the Effie Variation Area, the Effie Variation has the least new impact on wetlands in the area.

f. Natural Environment - Vegetation

565. The Blue Route, Orange Route, and Effie Variation all would cross a relatively similar amount of forested land cover. However, the Effie Variation parallels an existing transmission line corridor for 80 percent of its length, rendering the extent of new impacts less severe and avoiding new forest fragmentation. The Blue and Orange Routes do not parallel existing utility corridors or ROWs, so that all impacts would be new.[573]

566. It is important to note that the Effie Variation Area, as a whole, contains an important area of unfragmented old growth forest land. The Blue and Orange Routes would result in new fragmentation of pristine forested area.[574] According to the MNDNR, the impact of a new ROW on intact forests is far greater than the impact of increasing the ROW in forests that already are impacted by fragmentation effects. Indeed, unfragmented interior forest is one of the habitats listed most "at risk" in Minnesota.[575]

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[571] *Id.*
[572] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).
[573] Ex. 120 (DOC-EERA Relative Merits Table).
[574] MNDNR COMMENTS TO ROUTE PERMIT APPLICATION (August 15, 2014) (eDocket No. 20158-113095-02).
[575] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).

567. The MNDNR notes that:

> Fragmentation may result in habitat scarcity, conversion, degradation, edge effects and invasive species. Strictly comparing [the] number of acres [of forest] impacted…does not get at the important distinction between impacts to acres that are already degraded vs. impacts to acres that are intact and of higher quality. In the proposed [Blue and Orange Routes], large blocks of forest would be permanently cleared causing fragmentation and associated impacts of edge effects to natural resources. Adding a new transmission line to an existing ROW [as in the Effie Variation] will increase the width and potentially the amount of impacted area, but these areas are already degraded due to the existing transmission line.[576]

g. Natural Environment - Wildlife

568. Both the Blue and Orange Routes would cross 69 acres of Important Bird Area. The Effie Variation impacts no Important Bird Areas.[577] In addition, the Effie Variation avoids large block habitats, including those association with MBS Sites of Biodiversity Significance, forested wetlands, and critical wildlife habitat (see below).[578]

h. Rare and Unique Natural Resources - Federal and State Listed Species

569. The Blue Route, Orange Route, and Effie Variation all cross critical habitat designated for the gray wolf. However, the Blue and Orange Routes have the most NHIS records within one mile. The Effie Variation would minimize those impacts by paralleling an existing utility corridor; whereas the Blue and Orange Routes would create new impacts to an important area of critical wildlife habitat.[579]

570. The Effie Variation Area contains the most critical habitat identified for the Canada Lynx. However, comparing the acres of critical habitat impacted by each route alternative is not an adequate comparison because the quality of the critical habitat that be will be impacted must be considered.[580]

571. The critical Canada Lynx habitat impacted by the Effie Variation is already degraded in quality due to the current fragmentation impacts of the existing transmission lines in that area. Whereas, the critical lynx habitat in the Blue and Orange Routes is of higher quality because it is currently intact and not impacted by any transmission line corridors. The impact of creating a new ROW through critical lynx habitat is greater than the impact of increasing the size of the ROW through critical habitat that has already be impacted by transmission lines (i.e., the Effie Variation). In this way, the Blue and Orange Routes would have significantly more impact on the critical habitat of the Canada Lynx

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[576] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).Id.
[577] Ex. 120 (DOC-EERA Relative Merits Table).
[578] MNDNR Comments to DEIS (September 1, 2015) (eDocket No. 20159-113683-01).
[579] Ex. 120 (DOC-EERA Relative Merits Table).
[580] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).

than the Effie Variation, making the Effie Variation more favorable for the protection of wildlife in the variation area.[581]

i. Rare and Unique Natural Resources - State Rare Communities

572. The Blue Route, Orange Route, and Effie Variation all would pass through a relatively similar amount of MBS Sites of Biodiversity Significance (422 acres, 490 acres, and 427 acres, respectively). However, the Effie Variation parallels an existing transmission line corridor for 80 percent of its length, which would significantly minimize new impacts to the area, as explained above.[582]

573. In addition, the Orange and Blue Routes would pass through two important preliminary MBS Sites of Biodiversity Significance: the Coon Creek-Scenic Park (listed as "Outstanding") and the Bear-Wolf Peatland (listed as "High"). The biodiversity of these sites would be impacted by the fragmentation impacts of a transmission line. The Effie Variation (along with the East Bear Lake Variation), however, would avoid all of these areas. As a result, the Effie Variation would have the least impacts to high quality peatlands and associated resources in comparison to the Orange and Blue Routes.[583]

j. Use or Paralleling of Existing Rights-of-Way

574. The Effie Variation parallels an existing transmission line, roadway, and/or trail corridor for 80 percent of its length. This corridor includes two other HVTLs: a 500 kV line and a 230 kV line. The Blue and Orange Routes do not parallel any existing corridors and all impacts created by the Blue and Orange Routes would be new.[584]

k. Electrical System Reliability

575. The Effie Variation would parallel two other HVTLs: a 500 kV line and a 230 kV line, resulting in a "triple paralleling" of HVTLS through this area. According to Minnesota Power, this would present challenges in four broad categories: (1) construction, operation, and maintenance; (2) consequences of simultaneous unplanned outages; (3) potential increase in EMF and noise; and (4) increased cost.[585]

576. With respect to construction, operation and maintenance, Minnesota Power asserts that a third HVTL in the area may make it more difficult for power companies – particularly the company operating the "middle line" -- to operate helicopters or large equipment, such as cranes, in the areas of the lines.[586]

577. In the case of the Effie Variation, the middle line would be Xcel Energy's 500 kV line. In its comments, Xcel explained that having three lines in one corridor may

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[581] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).
[582] Ex. 120 (DOC-EERA Relative Merits Table).
[583] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).
[584] Ex. 120 (DOC-EERA Relative Merits Table).
[585] Tr. Vol. 7 at 144-166 (Winter).
[586] *Id.*

make it more difficult for Xcel to employ helicopters for infrequent inspections and it may require more precaution when servicing its line. However, Xcel did not express opposition to the Effie Variation.[587]

578. In addition, Minnesota Power noted that the construction, operation, and maintenance concerns can be mitigated by increasing the distance between the GNTL and the existing transmission line.[588]

579. With respect to unexpected outages, Minnesota Power asserts that where a HVTL shares a common corridor with other HVTLs, a simultaneous unexpected outage due to a catastrophic event (such as lightning, icing, high winds, tornadoes, wildfires, or terrorism) could have impact on electrical system reliability for the area as a whole because more lines are impacted by the same event.[589] The rarity of these events, and the ability of Minnesota Power to engineer its facilities to withstand weather conditions, counters these concerns. For example, since Xcel's 500 kV line was energized in 1980, there have only been two tornadic events that have impacted that entire 500 kV line, a line which runs all the way to the Canadian border.[590] Moreover, there is no evidence that such tornadic events occurred in the Effie Variation Area or even resulted in simultaneous outages of the other 230 kV line in the Effie Variation Area.[591]

580. With respect to EMFs and noise, Minnesota Power noted that there is a potential for incrementally higher EMF and audible noise due to the addition of a third line in the same corridor.[592] Minnesota Power, however, did not provide any data on how much more EMFs and audible noise might result from an additional line, rendering this claim merely speculative.

581. While there are challenges related to triple paralleling HVTLs, Minnesota Power acknowledges that these issues are not insurmountable and do not render the Effie Variation impractical or impossible.[593]

I. Costs of Constructing, Operation, and Maintenance

582. The estimated cost of the Blue Route is approximately $46.6 million; the estimated cost of the Orange Route is $49.4 million, and the estimated cost of the Effie Variation is $57.3 million, making the Effie Variation the most costly option. The Effie Variation is still within 20 percent of the cost of either the Blue or Orange Routes.[594]

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[587] *See* COMMENTS BY XCEL ENERGY (September 1, 2015) (eDocket No. 20159-113672-01).
[588] Tr. Vol. 7 at 166-68 (Winter).
[589] *Id.* at 144-166 (Winter).
[590] *Id.* at 181 (Tracy).
[591] *Id.* at 182-84 (Tracy).
[592] *Id.* at 144-166 (Winter).
[593] *Id.* at 121 (Winter).
[594] Ex. 120 (DOC-EERA Relative Merits Table).

m. Summary of the Route Alternatives in the Effie Variation Area

583. The Effie Variation was proffered by the MNDNR and residents in the Effie area concerned with the impact of new lines through the intact forested areas surrounding Effie, Minnesota. As a result, The Effie Variation is favored by a large number of public commentators living in the area, as well as the MNDNR. (See Public Comments section above). These voices and preferences cannot be ignored.

584. While it is true that the Effie Variation would pass by more residences, would result in "triple paralleling" of HVTLs, and would be more expensive than either the Blue or Orange Routes, the benefits of the variation outweigh the additional risks and costs.

585. Unlike the Blue and Orange Routes, the Effie Variation has the critical benefits of paralleling an existing HTVL corridor and preventing new impacts to an area of unique and pristine wilderness and intact old growth forest valued by the state and its residents. Thus, the residences and wilderness that would be impacted by the Effie Variation are already impacted by the existing 230 kV and 500 kV lines in the corridor, thereby reducing the new impacts of the Effie Variation to the built and natural environment.

586. In contrast, the Blue and Orange Routes both cause new impacts to sensitive areas of biodiversity and critical habitats, and result in new fragmentation of forestry, wetlands, and critical habitats.[595] Therefore, the impacts of the Blue and Orange Routes are much more significant than in the Effie Variation.

587. With respect to the potential drawbacks related to "triple paralleling" of HVTLs, Minnesota Power acknowledges that the challenges in constructing, maintaining, and inspecting the lines can be remedied through increased distance between lines and other forms of mitigation.[596] Consequently, the concerns raised by Minnesota Power do not make the Effie Variation unfeasible. In addition, the Company's arguments about the risks of catastrophic incidents and simultaneous outages are not supported by data and are mere remote possibilities.

588. Unlike the Effie Variation, the Blue and Orange Routes impact Important Bird Areas, make new corridors with new impacts to the natural environment, increase forest fragmentation in an area of intact old growth forest, further degrade a critical habitat for the Canada Lynx, and negatively impact more wildlife than the Effie Variation.[597]

589. Moreover, Minnesota law favors the use of existing utility corridors wherever possible.[598] Here, the benefits of paralleling the existing HVTL infrastructure, rather than creating a new utility corridor through an important area of the state, outweigh the risks

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[595] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).
[596] Tr. Vol. 7 at 121; 166-167 (Winter).
[597] MNDNR COMMENTS TO DEIS (September 1, 2015) (eDocket No. 20159-113683-01).
[598] *See* Minn. Stat. § 216E.03, subp. 7(e).

and costs associated with the Effie Variation. Accordingly, the Administrative Law Judge recommends that the Commission select the Effie Variation in the Effie Variation Area.

2. East Bear Lake Variation Area

590. The East Bear Lake Variation Area is located in the east-central portion of the East Section (FEIS Map 4-14 and Map 4-16).

591. There are two routing options within the East Bear Lake Variation Area: the Orange Route and the East Bear Lake Variation (FEIS Map 4-16).[599] The East Bear Lake Variation is an extension of the Effie Variation discussed above, which is an alternative to both the Blue and Orange Routes in the East Section.

592. The Orange Route and the East Bear Lake Variation have a common starting point located just north of Bear Lake Forest Road East in the northwestern portion of the East Bear Lake Variation Area. The Orange Route and East Bear Lake Variation do not share their alignments in this variation area. The Orange Route and East Bear Lake Variation have a common endpoint located southeast of Wolf Lake in the southern portion of the East Bear Lake Variation Area.[600]

593. The Orange Route is 8.9 miles in length and the East Bear Lake Variation is 10.5 miles in length through the Effie Variation Area. The East Bear Lake Variation parallels two existing HVTLs (500 kV and 230 kV lines) for 42 percent of its length. The Orange Route does not parallel any HVTL ROW.[601] The anticipated alignment of the East Bear Lake Variation would be along the west side of Xcel Energy's existing 500 kV line which is paralleled by an existing 230 kV line to the east side of the 500 kV line. (These are the same HVTLs discussed in the Effie Variation Area above.)

594. The primary issues identified by commenters in the East Bear Lake Variation Area are: (1) maximization of existing utility corridors; (2) protection of sensitive areas and habitat associated with the Wasson Lake and Bear-Wolf Lake Bog areas; and (3) reliability risks associated with "triple paralleling" HVTLs.

a. Human Settlement - Aesthetics

595. No residences are present within 1,500 feet of the anticipated alignment of either the Orange Route or the East Bear Lake Variation.[602]

b. Human Settlement - Land Use Compatibility

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[599] Ex. 119, Vol. 1, Pt. 3 of 14, at 82 (Final Environmental Impact Statement).
[600] Ex. 119, Vol. 1, Pt. 3 of 14, at 82 (Final Environmental Impact Statement).
[601] Ex. 119, Vol. 1, Pt. 11 of 14, at 563, Table 6-172 (Final Environmental Impact Statement).
[602] Ex. 120 (DOC-EERA Relative Merits Table).

596. There are no land use compatibility issues identified for these two routing options. Neither the Orange Route nor the East Bear Lake Variation would cross private land, as both routes would be entirely constructed on public property.[603]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

597. The East Bear Lake Variation would cross nearly two times more agricultural land than the Orange Route (160 acres versus 85 acres). Both the Orange Route and the East Bear Lake Variation would cross a relatively similar amount of state forest land. The East Bear Lake Variation would cross more expired or terminated mineral lease lands. However, the East Bear Lake Variation would parallel an existing utility corridor for the majority of its length.[604]

d. Archaeological and Historic Architectural Resources

598. There are no known archaeological and historic architectural resources that would be affected by the Orange Route or the East Bear Lake Variation.[605]

e. Natural Environment - Water Resources

599. Both the Orange Route and the East Bear Lake Variation would cross relatively similar numbers of watercourses or waterbodies (four and five, respectively), however, all crossings are expected to be spanned. Neither the Orange Route nor the East Bear Lake Variation would cross FEMA-designated floodplains. Both the Orange Route and the East Bear Lake Variation would cross relatively similar areas of wetlands that are too large to span and, thus, would result in relatively similar areas of shrub and forested wetland type conversion.[606]

f. Natural Environment - Vegetation

600. Both the Orange Route and the East Bear Lake Variation would cross a relatively similar amount of forested land cover. However, the East Bear Lake Variation would parallel existing corridors for nearly half of its length, thereby reducing the amount of new impacts and forest fragmentation that a new ROW would cause.[607]

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[603] *Id.*
[604] *Id.*
[605] *Id.*
[606] *Id.*
[607] *Id.*

g. Natural Environment - Wildlife

601. Neither the Orange Route nor the East Bear Lake Variation would cross designated wildlife resources.[608]

h. Rare and Unique Natural Resources - Federal and State Listed Species

602. There are no federally-listed species identified for either the Orange Route or the East Bear Lake Variation. Both the Orange Route and the East Bear Lake Variation have a relatively similar number of NHIS records within one mile of their anticipated alignments. Neither the Orange Route nor the East Bear Lake Variation has threatened or endangered NHIS records within one mile of their anticipated alignments.[609]

i. Rare and Unique Natural Resources - State Rare Communities

603. Both the Orange Route and the East Bear Lake Variation would cross a relatively similar amount of MBS Sites of Biodiversity Significance. No SNAs would be located within 1,500 feet of any either the Orange Route or the East Bear Lake Variation, nor would either route cross an SNA WPA.[610]

j. Use or Paralleling of Existing Rights-of-Way

604. The East Bear Lake Variation would parallel existing transmission line, roadway, and/or trail corridor for 42 percent of its length, while the Orange Route would not parallel any corridors in this segment.[611] The existing transmission line corridor is the same 500 kV and 230 kV corridor discussed with respect to the Effie Variation above.

k. Electrical System Reliability

605. The East Bear Lake Variation would parallel an existing 500 kV and 230 kV line corridor for 42 percent of its length.[612] (As with the Effie Variation, Minnesota Power has concerns about "triple paralleling" the line with the existing 500 kV and 230 kV lines along the East Bear Lake Variation (i.e., challenges related to construction, operation and maintenance, incremental increases in impacts relating to EMF and noise, and increased cost).[613]

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[608] *Id.*
[609] *Id.*
[610] *Id.*
[611] *Id.*
[612] *Id.*
[613] Tr. Vol. 1 at 144-66.

l. Costs of Constructing, Operation, and Maintenance

606. The estimated cost of the East Bear Lake Variation is approximately $13.3 million and the estimated cost of the Orange Route is approximately $9.7 million dollars.[614]

m. Summary of the Route Alternatives in the East Bear Lake Variation Area

607. As with the Effie Variation Area, selecting a routing option through the East Bear Lake Variation Area requires a balancing of the benefits of paralleling the existing HVTL infrastructure against the risks posed with "triple paralleling" utility lines.

608. A comparison of the factors set forth in Minn. R. 7850.4100 renders the Orange Route and the East Bear Lake Variation relatively comparable in the East Bear Lake Variation Area. The one factor that tips the scales in favor of the East Bear Lake Variation is the use of an existing utility corridor and the avoidance of new impacts on natural and wildlife areas. Thus, and for the same reasons articulated in the Effie Variation above, the East Bear Lake Variation best satisfies the factors set forth in Minn. R. 7850.4100.

609. The East Bear Lake Variation is a portion of the Effie Variation. As set forth above, the Administrative Law Judge has determined that the Effie Variation best satisfies the factors set forth in Minn. R. 7850.4100. Accordingly, there is no need to separately recommend the East Bear Lake Variation.

3. Balsam Variation Area

610. The Balsam Variation Area is located in the central portion of the East Section (FEIS Map 4-14). The Balsam Variation Area is overlapped by the Effie Variation Area to the north.

611. There are three route alternatives within the Balsam Variation Area: the Blue Route, the Orange Route, and the Balsam Variation (FEIS Map 4-17). There is one alignment modification in the Balsam Variation Area: the Grass Lake Alignment Modification (to the Blue Route).

612. The Blue Route, Orange Route and Balsam Variation have a common starting point along a former transmission line (230 kV) corridor approximately one mile north of County Road 539 in the northeastern portion of the Balsam Variation Area. The Orange Route continues with the Balsam Variation for a short distance west and then the lines diverge. The Blue Route runs straight south from the common starting point. All three alternatives have a common endpoint located near Diamond Lake Road in the southern portion of the Balsam Variation Area.[615]

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[614] Ex. 119, Vol. 1, Pt. 11 of 14, at 577, Table 6-182 (Final Environmental Impact Statement).
[615] Ex. 119, Vol. 1, Pt. 3 of 14, at 82-83 (Final Environmental Impact Statement).

613. The Balsam Variation is five miles longer than the Blue Route, and is approximately four miles longer than the Orange Route. The Orange Route is approximately one mile longer than the Blue Route. The Blue and Orange Routes would parallel two existing 115 kV line corridors for approximately 15 percent of their lengths. The Balsam Variation would be located in the former transmission line corridor for 66 percent of its length.[616]

614. The primary issue identified by commenters in this variation area is concern over potential impacts on the town of Balsam. Residents of Balsam who submitted public comments overwhelmingly supported the Blue or Orange Routes over the Balsam Variation.

a. Human Settlement - Aesthetics

615. The Orange Route would pass by 21 residences within 1,500 feet of the anticipated alignment, with 10 of the residences located within 1,000 feet and two within 500 feet of the alignment. The Balsam Variation would pass by 12 residences within 1,500 feet of the anticipated alignment, with six residences within 1,000 feet and two residences within 500 feet of the anticipated alignment. The Blue Route would pass by seven residences within 1,500 feet of the anticipated alignment, with only three residences within 1,000 feet and no residences within 500 feet of the alignment.[617]

616. In addition, public comment notes that the Balsam Variation would run past various buildings and civic sites important to the community, such as the community center, fire hall, bible chapel, and park and recreation area. As a result, the public and neighboring communities support the Blue Route over the Orange Route and Balsam Variation.

b. Human Settlement - Land Use Compatibility

617. There are no land use compatibility issues identified for the Blue Route, Orange Route, or Balsam Variation. The Balsam Variation crosses the most private land (433 acres) as compared to the Blue Route (314 acres) and Orange Route (332 acres). The Blue Route impacts the fewest number of private properties.[618]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

618. The Blue Route, Orange Route, and Balsam Variation all cross a relatively similar amount of farmland. None of the routes would cross state forest land. The Balsam Variation would cross active and expired or terminated mineral lease lands (89 acres), while the Blue Route and the Orange Route would not cross any mineral lease lands.[619]

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[616] Ex. 119, Vol. 1, Pt. 11 of 14, at 568, Table 6-183 (Final Environmental Impact Statement).
[617] Ex. 120 (DOC-EERA Relative Merits Table).
[618] *Id.*
[619] *Id.*

d. Archaeological and Historic Architectural Resources

619. The Balsam Variation would cross a section identified as containing known archaeological sites, while the Blue Route and Orange Route would not. In addition, the Balsam Variation has more historic architectural sites within one mile of the anticipated alignment than the Blue and Orange Route (28, 13, and 24, respectively).[620]

e. Natural Environment - Water Resources

620. The Blue Route, Orange Route, and Balsam Variation all would cross relatively similar numbers of watercourses or waterbodies; however, all crossings are expected to be spanned. The Orange Route and the Balsam Variation would both cross FEMA-designated floodplains too large to be spanned. The Orange Route would cross the most floodplain (26 versus 22 acres). All three route alternatives would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of shrub and forested wetland-type conversion. The Balsam Variation would cross the most wetland (96 acres), compared to the Blue Route (54 acres) and Orange Route (69 acres) [621]

f. Natural Environment - Vegetation

621. The Blue Route, Orange Route, and Balsam Variation all would cross a relatively similar amount of forested land cover (between 299 and 401 acres).[622]

g. Natural Environment/Wildlife

622. None of the three alternative segments would cross designated wildlife resources.[623]

h. Rare and Unique Natural Resources - Federal and State Listed Species

623. There are no federally-listed species identified for any of the three alternatives. All three routes have the same number of NHIS records within one mile, none of which are threatened or endangered species.[624]

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[620] *Id.*
[621] *Id.*
[622] *Id.*
[623] *Id.*
[624] *Id.*

i. Rare and Unique Natural Resources - State Rare Communities

624. The Blue Route, Orange Route, and Balsam Variation would all cross a similar amount of MBS Sites of Biodiversity Significance. No SNAs would be located within 1,500 feet of any of the three alternatives, and no SNA WPA would be crossed by the routes.[625]

j. Use or Paralleling of Existing Rights-of-Way

625. The Blue Route, Orange Route, and Balsam Variation all would parallel existing transmission line, roadway, and/or trail corridor for a portion of their length through this segment. The Blue Route would parallel a corridor for 21 percent of its length; the Orange Route would parallel an existing corridor for 17 percent of its length; and the Balsam Variation would parallel an existing corridor for 36 percent of its length. In addition, the Balsam Variation would be located in a former transmission line corridor for 66 percent of its length.[626] However, areas of this former corridor have been replanted by residents who oppose the Balsam Variation, thereby creating some new impacts

k. Electrical System Reliability

626. Both the Blue and Orange Routes would parallel two existing 115 kV line corridors for 15 percent of their lengths, thereby resulting in "triple paralleling" for a short distance.[627] However, no party or participant has cited electrical reliability concerns with triple paralleling in this corridor.[628]

l. Costs of Constructing, Operation, and Maintenance

627. The estimated cost for the Balsam Variation is approximately $19.5 million; the estimated cost for the Orange Route is approximately $16 million; and the estimated cost of the Blue Route is $15.1 million.[629]

m. Summary of the Route Alternatives in the Balsam Variation Area

628. The Balsam Variation is the longest of the route alternatives and crosses the most private land. It is also the only route in this variation area that crosses active and expired or terminated mineral lease lands and crosses an area containing one known archeological site. The Balsam Variation impacts the highest number of architectural historic sites and is the most expensive alternative in this variation area.

629. The Blue Route is the shortest route alternative, has the least impact on residences within 1,500 of its anticipated alignment, crosses the least number of private

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[625] *Id.*
[626] *Id.*
[627] *Id.*
[628] *Id.*
[629] *Id.*

acreage, and is the least expensive option. In comparison, the Orange Route passes by the most number of residences and has the most impact on floodplains.

630. Public comments from citizens in the Balsam Township community overwhelmingly support the Blue Route in the Balsam Variation Area and oppose the Balsam Variation, due to its potential impact on public areas important to the Balsam Township community.

631. Accordingly, a balancing of the public interest and the factors set forth in Minn. R. 7850.4100 favors the Blue Route through the Balsam Variation Area.

4. Dead Man's Pond Variation Area

632. The Dead Man's Pond Variation Area is located in the south-central portion of the East Section (FEIS Map 4-14 and Map 4-17). The Dead Man's Pond Variation Area is located within the Balsam Variation Area.

633. There are two route alternatives within the Dead Man's Pond Variation Area: the Blue Route and the Dead Man's Pond Variation (FEIS Map 4-14).[630] The Blue Route and Dead Man's Pond Variation have a common starting point just north of where the Blue Route crosses County State Aid Highway (CSAH) 8 in the northeastern portion of the Dead Man's Pond Variation Area. The routes then diverge as they travel south. The Blue Route and Dead Man's Pond Variation have a common endpoint located approximately 0.5 miles south of CSAH 57 in the southwestern portion of the Dead Man's Pond Variation Area.[631]

634. There is one alignment modification in the Dead Man's Pond Variation Area: the Dead Man's Pond Alignment Modification (to the Blue Route) (FEIS Map 4-17).

635. The primary issue identified by commenters in the Dead Man's Pond Variation Area is the use of corporate and state fee lands instead of private land.

a. Human Settlement - Aesthetics

636. The Dead Man's Pond Variation would pass by four residences within 1,500 feet of its anticipated alignment; and the Blue Route would pass by two residences within 1,500 feet of its anticipated alignment.[632] Both routes would have one residence within 1,000 feet of their alignments and none within 500 feet.[633]

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[630] *Id.*
[631] Ex. 119, Appendix S, Map Book East Sec., Pt. 1 of 2, Map 108 (Final Environmental Impact Statement).
[632] Ex. 120 (DOC-EERA Relative Merits Table).
[633] *Id.*

b. Human Settlement - Land Use Compatibility

637. There are no land use compatibility issues identified for either the Blue Route or the Dead Man's Pond Variation. Both alternatives would cross a relatively similar amount of private land, with the Blue Route crossing the most (35 acres).[634]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

638. The Dead Man's Pond Variation would cross nearly double the agricultural acreage than the Blue Route (39 acres versus 20 acres). Neither alternative would cross state forest land. No active or expired or terminated mineral lease lands or aggregate resources are present in the ROW of either route.[635]

d. Archaeological and Historic Architectural Resources

639. There are no known archaeological sites that would be affected by either the Blue Route or the Dead Man's Pond Variation. Both routes have one historic architectural site within one mile of their anticipated alignment.[636]

e. Natural Environment - Water Resources

640. Neither the Blue Route nor the Dead Man's Pond Variation crosses watercourses, waterbodies, or floodplains. The Blue Route would cross wetlands that are too large to span, while the Dead Man's Pond Variation would be able to span the wetlands. Both alternatives would result in relatively similar areas of forested wetland-type conversion. The Blue Route would have the most shrub wetland and would require the most shrub wetland-type conversion.[637]

f. Natural Environment - Vegetation

641. Both the Blue Route and the Dead Man's Pond Variation would cross a relatively similar amount of forested land cover.[638]

g. Natural Environment - Wildlife

642. Neither the Blue Route nor the Dead Man's Pond Variation would cross designated wildlife resources.[639]

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[634] *Id.*
[635] *Id.*
[636] *Id.*
[637] *Id.*
[638] *Id.*
[639] *Id.*

h. Rare and Unique Natural Resources - Federal and State Listed Species

643. There are no federally-listed species identified for the Blue Route or the Dead Man's Pond Variation. There is one state threatened NHIS record within one mile of the Dead Man's Pond Variation. This species is a fish, and because it is anticipated that all waterbodies and watercourses would be spanned, impacts to this aquatic species are not expected.[640]

i. Rare and Unique Natural Resources - State Rare Communities

644. No known rare and unique natural resources were identified for either the Blue Route or the Dead Man's Pond Variation. Neither route has an SNA within 1,500 feet or an SNA WPA within the ROW. No known MBS Sites of Biodiversity Significance were identified for either of the alternatives. There are no known High Conservation Value Forests or Ecologically Important Lowland Conifer Areas that would be affected by the two route alternatives.[641]

j. Use or Paralleling of Existing Rights-of-Way

645. The Blue Route parallels an existing transmission line, roadway, and/or trail corridor for 17 percent of its length through this Variation Area. The Dead Man's Pond Variation does not parallel any existing corridors.[642]

k. Electrical System Reliability

646. There are no identified issues related to electrical reliability in this variation area.[643]

l. Costs of Constructing, Operation, and Maintenance

647. The estimated cost of the Dead Man's Pond Variation is approximately $4.4 million. The estimated cost of the Blue Route in this Variation Area is approximately $2.9 million, rendering the Dead Man's Pond Variation more than 20 percent more expensive than the Blue Route.[644]

m. Summary of the Route Alternatives in the Dead Man's Pond Variation Area

648. The Dead Man's Pond Variation passes by double the number of residences within 1,500 feet of its alignment than the Blue Route, and is more than 20 percent more expensive than the Blue Route without other significant benefits to justify

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[640] *Id.*
[641] *Id.*
[642] *Id.*
[643] *Id.*
[644] *Id.*

the added expense. The Blue Route utilizes an existing utility corridor for 17 percent of its length and is less costly.[645] Consequently, the Blue Route best meets the factors set forth in Minn. R. 7850.4100.

5. Blackberry Variation Area

649. The Blackberry Variation Area is located in the southern portion of the East Section (FEIS Map 4-14).

650. There are two variations within the Blackberry Variation Area: the Blue Route and the Orange Route (FEIS Map 4-17).[646] There is one alignment modification in this variation area: the Trout Lake Alignment Modification to the Blue Route (FEIS Map 4-17).

651. The Blue and Orange Routes have a common starting point located west of Twin Lakes where the lines enter in the northwestern portion of the Blackberry Variation Area. The alternatives end at a common location at the proposed Blackberry Substation in the southern portion of the variation area.[647]

652. The primary issues identified by commenters in the Blackberry Variation Area are: (1) the presence of the Mesabi Iron Range, with associated mining rights; and (2) the expansion of the existing Blackberry Substation.

a. Human Settlement - Aesthetics

653. The Orange Route would pass by 22 residences within 1,500 feet of the anticipated alignment. Of those, five residences would be within 1,000 feet and no residences would be within 500 feet of the anticipated alignment. The Blue Route would pass by 11 residences within 1,500 feet of the anticipated alignment; six within 1,000 feet and two within 500 feet of the anticipated alignment.[648]

b. Human Settlement - Land Use Compatibility

654. There are no land use compatibility issues identified for either the Blue or Orange Routes. Both routes would cross a relatively similar amount of private land.[649]

c. Land-Based Economies - Agriculture, Forestry, and Mineral Resources

655. Both routes would cross a relatively similar amount of farmland, although the Orange Route would cross slightly more agricultural land (eight acres). Neither route would cross state forest land. The proximity to expired or terminated mineral lease lands

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[645] *Id.*
[646] Ex. 119, Vol. 1, Pt. 3 of 14, at 83 (Final Environmental Impact Statement).
[647] Ex. 119, Vol. 1, Pt. 3 of 14, at 83 (Final Environmental Impact Statement).
[648] Ex. 120 (DOC-EERA Relative Merits Table).
[649] *Id.*

are relatively similar between the Blue Route and the Orange Route in this variation area.[650]

d. Archaeological and Historic Architectural Resources

656. There are no known archaeological resources that would be affected by either route. The Blue Route has more historic architectural sites within one mile than the Orange Route (six versus one, respectively).[651]

e. Natural Environment - Water Resources

657. The Orange Route would cross the most watercourses or waterbodies, all of which are expected to be spanned. Neither route would cross a floodplain. Both the Blue Route and the Orange Route would cross relatively similar areas of wetlands that are too large to span and would result in relatively similar areas of forested wetland-type conversion. The Blue Route would have slightly more shrub wetland than the Orange Route (by five acres).[652]

f. Natural Environment - Vegetation

658. Both the Blue Route and the Orange Route would cross a similar amount of forested land cover. However, the Orange Route parallels more existing transmission line corridor than the Blue Route.[653]

g. Natural Environment - Wildlife

659. Neither route would cross areas of designated wildlife resources.[654]

h. Rare and Unique Natural Resources - Federal and State Listed Species

660. There are no federally-listed species identified for either route, and both routes have a relatively similar number of NHIS records, including threatened or endangered NHIS records, within one mile.[655]

i. Rare and Unique Natural Resources - State Rare Communities

661. Both the Blue Route and the Orange Route would cross a relatively similar amount of MBS Sites of Biodiversity Significance. No SNAs would be located within 1,500 feet of either route, and neither route would cross an SNA WPA. There are no known

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[650] *Id.*
[651] *Id.*
[652] *Id.*
[653] *Id.*
[654] *Id.*
[655] *Id.*

High Conservation Value Forests or Ecologically Important Lowland Conifer Areas that would be affected by either the Blue or Orange Route.[656]

j. Use or Paralleling of Existing Rights-of-Way

662. The Blue Route would parallel existing transmission line, roadway, and/or trail corridor for approximately 22 percent of its length through this segment. The Orange Route would parallel more existing corridor (approximately 37 percent of its length) in this segment.[657]

k. Electrical System Reliability

663. Both alternatives would parallel two existing HVTLs for a short proportion of their length.[658] The Blue Route would parallel a 230 kV line and a 115 kV line for approximately one mile as it enters the Blackberry Substation. The Orange Route would parallel two 115 kV lines for approximately two miles as it enters the Blackberry Substation.[659] No participant in this proceeding has asserted an issue of system reliability related to the Blackberry Variation Area.

l. Costs of Constructing, Operation, and Maintenance

664. The estimated cost of the Orange Route approximately $10.1 million. The estimated cost of the Blue Route is approximately $8.4 million, rendering the Blue Route less expensive.[660]

m. Summary of the Blackberry Variation Area

665. The Orange Route in the Blackberry Variation Area passes by double the number of residences within 1,500 feet of its anticipated alignment, impacts more private property and agricultural land, and is more expensive than the Blue Route with no material corresponding benefits to justify the increased cost.[661] Accordingly, an application of the factors set forth in Minn. R. 7850.4100 favors the Blue Route in the Blackberry Variation Area.

F. Route Specific Impacts – Alignment Modifications

666. Minor adjustments to the anticipated alignments within a given route or route alternative (i.e., alignment modifications) were proposed during the scoping period. The purpose for each alignment modification request is to address a specific issue or

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[656] *Id.*
[657] *Id.*
[658] Ex. 120 (DOC-EERA Relative Merits Table).
[659] Ex. 119, Vol. 1, Pt. 12 of 14, at 641, Map 6-65 (Final Environmental Impact Statement).
[660] Ex. 120 (DOC-EERA Relative Merits Table).
[661] *Id.*

feature raised by the commenters (e.g., sensitive lands, houses, following existing corridors, etc.).[662]

667. Specific alignment modifications may be incorporated in the Commission Route Permit as a special condition should the Commission find they are warranted.[663]

1. West Section

668. There are no alignment modifications identified in the West Section.[664]

2. Central Section

669. There are four alignment modifications proposed for the Central Section: the Silver Creek WMA Alignment Modification; the Airstrip Alignment Modification; the Mizpah Alignment Modification; and the Gravel Pit Alignment Modification (FEIS Map 4-8).[665]

670. The Silver Creek WMA Alignment Modification is located in the north-central portion of the Pine Island Variation Area. The alignment modification is the same length as the comparable segment of the Blue Route. The Blue Route follows the south side of the existing 230 kV line, which parallels the southern edge of the USFWS Interest Lands and the Silver Creek WMA. Land ownership includes private, state forest, and federal lands.[666]

671. The Silver Creek WMA Alignment Modification shifts the centerline of the alignment approximately 150 feet south onto state forest land and avoids impacts to federal land and the Silver Creek WMA. The alignment modification does not share an existing corridor like the Blue Route through this variation area and will require creation of new corridor for its entire length. Because of this, the alignment modification would result in more fragmentation of intact state forest.[667]

672. The Airstrip Alignment Modification is located in the east portion of the C2 Variation Area (FEIS Map 4-12). This alignment modification is the same length as the comparable segment of the C2 Segment Option. The C2 Segment Option follows the west side of the existing 230 kV line for over half of its length. Land ownership includes private, corporate, county-administered state, and state trust lands.[668]

673. The Airstrip Alignment Modification shifts the centerline approximately 725 feet west to avoid impacts to the private airstrip located east of the existing 230 kV line. The height of the proposed transmission line will be taller than the existing 230 kV line and located northwest of the north end of the landing strip, so use of the landing strip may

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[662] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[663] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[664] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[665] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[666] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[667] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[668] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).

be affected due to its northwest/southeast orientation. This alignment modification would be located approximately 1,000 west of the existing 230 kV line and would, thus, provide additional distance for use of the landing strip. Land ownership remains the same mix of private and state lands as for the C2 Segment Option.[669]

674. The Mizpah Alignment Modification is located in the northwest portion of the J2 Variation Area (FEIS Map 4-13). This alignment modification is the same length as the comparable segment of the Orange Route. Land ownership includes both private, county-administered state, and state forest lands.[670]

675. The Mizpah Alignment Modification shifts the centerline north from a mix of private and state lands onto only state lands. Both the comparable segment of the Orange Route and this alignment modification will require creation of new corridor for their entire length. Because of this, both options would result in fragmentation of intact forest.[671]

676. The Gravel Pit Alignment Modification is located in the southeast portion of the J2 Variation Area (FEIS Map 4-13). This alignment modification is the same length as the comparable segment of the Orange Route. The Orange Route includes an existing private gravel pit and the existing Effie dump (MPCA State Assessment Site SA7836) within 100 feet of the west edge of the ROW. Land ownership along the Orange Route includes private, corporate, county-administered state, and state fee lands.[672]

677. The Gravel Pit Alignment Modification shifts the centerline of the alignment approximately 750 feet east to avoid impacts to the private gravel pit. No privately-owned land would be located within the ROW. The Effie dump would be located more than 100 feet west and outside of the ROW. Land ownership along the Gravel Pit Alignment Modification includes corporate, county-administered state, and state fee lands.[673]

3. East Section

678. There are five alignment modifications proposed for the East Section: the Bass Lake Alignment Modification, the Wilson Lake Alignment Modification, the Grass Lake Alignment Modification, the Dead Man's Pond Alignment Modification, and the Trout Lake Alignment Modification (FEIS Map 4-14).[674]

679. The Bass Lake Alignment Modification is located in the central portion of the Effie Variation Area (FEIS Map 4-15). This alignment modification is slightly longer (0.1 mile) than the comparable segment of the Blue/Orange Route. The Larson Lake State Forest Campground (George Washington State Forest) is located south of the comparable segment of the Blue/Orange Route on the west side of Larson Lake. The

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[669] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[670] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[671] Ex. 119, Vol. 1, Pt. 13 of 14, at 643 (Final Environmental Impact Statement).
[672] Ex. 119, Vol. 1, Pt. 13 of 14, at 643-44 (Final Environmental Impact Statement).
[673] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).
[674] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).

Bass Lake County Park and Campground is located to the north of the comparable segment of the Blue/Orange Route and surrounds Bass Lake. The comparable segment of the Blue/Orange Route crosses lands designated as "Outstanding Rank" for the Preliminary MBS Sites of Biodiversity Significance. Land ownership along the comparable segment of the Blue/Orange Route includes corporate and state forest lands.[675]

680. The Bass Lake Alignment Modification shifts the centerline approximately 750 feet southwest and away from the Bass Lake Itasca County Park (which includes a campground), and shifts the alignment closer to the Larson Lake State Forest Campground. This alignment modification crosses lands designated as "Outstanding Rank" for the Preliminary MBS Sites of Biodiversity Significance. Land ownership along the Bass Lake Alignment Modification includes slightly more state land and less private corporate land compared to the comparable segment of the Blue/Orange Route.[676]

681. The Wilson Lake Alignment Modification is located in the central portion of the Effie Variation Area (FEIS Map 4-15). This alignment modification is the same length as the comparable segment of the Blue Route. The comparable segment of the Blue Route crosses lands designated as "Moderate Rank" for the Preliminary MBS Sites of Biodiversity Significance. Land ownership along the comparable segment of the Blue Route includes corporate and state forest.[677]

682. The Wilson Lake Alignment Modification shifts the centerline of the alignment approximately 500 feet east from corporate and state forest lands onto an alignment with a greater percentage of state forest land. This alignment modification crosses lands designated as "Moderate Rank" for the Preliminary MBS Sites of Biodiversity Significance.[678]

683. The Grass Lake Alignment Modification is located in the northeast portion of the Balsam Variation Area (FEIS Map 4-17). The alignment modification is the same length as comparable segment of the Blue Route. The comparable segment of the Blue Route crosses Grass Lake, a PWI waterbody and also a wild rice waterbody. There is one residence located within 1,000 feet west of the Blue Route, south of Grass Lake. Land ownership along the comparable segment of the Blue Route includes private, corporate, and county-administered state lands. Part of the comparable segment of the Blue Route follows a boundary between private and corporate lands.[679]

684. The Grass Lake Alignment Modification shifts the centerline of the alignment approximately 900 feet east to avoid crossing Grass Lake. This alignment modification also shifts the transmission line east, away from one residence on the south end of Grass Lake, but shifts the alignment closer to six residences on the west side of

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[675] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).
[676] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).
[677] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).
[678] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).
[679] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).

Bray Lake. Land ownership along the Grass Lake Alignment Modification includes corporate and state forest lands, and avoids private land.[680]

685. The Dead Man's Pond Alignment Modification is located in the central portion of the Dead Man's Pond Variation Area (FEIS Map 4-17). This alignment modification is the same length as the comparable segment of the Blue Route. There is one residence located east of and within 1,000 feet of the comparable segment of the Blue Route. The comparable segment of the Blue Route crosses and then follows the west side of CSAH 8 for about one-third of its length. Land ownership along the comparable segment of the Blue Route includes private, corporate, and county-administered state forest lands. Part of the comparable segment of the Blue Route follows a boundary between private and county-administered state forest lands.[681]

686. The Dead Man's Pond Alignment Modification shifts the centerline approximately 1,000 feet west and away from the one residence located near CSAH 8. However, this modification shifts the alignment closer to two residences located along CSAH 57 and on to more private land. This alignment modification crosses the CSAH 8 and CSHA 57, but does not parallel the highway corridors. The alignment modification crosses Dead Man's Pond, a PWI waterbody. This alignment modification also crosses lands designated as "Moderate Rank" for the Preliminary MBS Sites of Biodiversity Significance. Land ownership along the Dead Man's Pond Alignment Modification includes more private, corporate, and county-administered state forest lands; but shifts the alignment west from the boundary between private and county-administered state forest lands onto private land.[682]

687. The Trout Lake Alignment Modification is located in the central portion of the Blackberry Variation Area (FEIS Map 4-17). This alignment modification is the same length as the comparable segment of the Blue Route. There are three residences within 1,000 feet of the comparable segment of the Blue Route. For about half of its length on the north end, the comparable segment of the Blue Route crosses corporate land and then follows the boundary between corporate and private land.[683]

688. The Trout Lake Alignment Modification shifts the centerline away from the two residences located west of the comparable segment of the Proposed Blue Route, so only one residence would be located within 1,000 feet of the alignment. All other land ownership along the Trout Lake Alignment Modification is corporate.[684]

VI. HVTL ROUTE PERMIT CONDITIONS

689. As part of the Commission's authority in granting route permits for high voltage transmission lines, the Commission shall also establish, through its permits, required measures (General and Special Conditions) for the construction, operation, and

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[680] Ex. 119, Vol. 1, Pt. 13 of 14, at 644 (Final Environmental Impact Statement).
[681] Ex. 119, Vol. 1, Pt. 13 of 14, at 645 (Final Environmental Impact Statement).
[682] Ex. 119, Vol. 1, Pt. 13 of 14, at 645 (Final Environmental Impact Statement).
[683] Ex. 119, Vol. 1, Pt. 13 of 14, at 645 (Final Environmental Impact Statement).
[684] Ex. 119, Vol. 1, Pt. 13 of 14, at 645 (Final Environmental Impact Statement).

maintenance of the transmission line and ROW. These conditions are intended to minimize the potential human and environmental impacts the proposed Project.[685]

690. General Conditions pertain to post-permit project deliverables, code compliance, permitting, and "Best Management Practices" that are applicable to all transmission line construction projects. Special Conditions apply to project-specific features or issues that may require additional protection, special handling, or unique procedures.[686]

691. In the DEIS, the DOC-EERA included the Commission's HVTL Route Permit Generic Template (DEIS Appendix B) as an example of the types of conditions that are generally contained in route permits issued.

692. The Generic Route Permit Template (Template) includes standards for electric performance, including performance for electric fields. Specifically, section 4.7.2 of the Generic Route Permit states: "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."[687]

693. In Section 4.8.1 of the Template, the Commission requires permittees to comply with applicable codes including "requirements of the NESC including clearances to ground, clearance to crossing utilities, clearance to buildings, right of way widths, erecting power poles, and string of transmission line conductors."[688]

694. The Commission has historically restricted, on a project-by-project basis, the maximum level for electric fields anywhere under a new transmission line in Minnesota to eight kV per meter (8 kV/m), measured at one meter above ground (the "8 kV/m Limit"). This functional standard has been included as a permit condition for all new transmission lines in Minnesota dating back to at least before 2005 when the Environmental Quality Board was responsible for reviewing transmission line route permits. The 8 kV/m Limit was designed to prevent serious hazard from shocks when touching large conductive objects under AC transmission lines of 500 kV or greater.[689]

695. In this case, due to the rural location of the proposed line, Minnesota Power is requesting that the Commission's 8 kV/m Limit be applied only for road crossings and on agricultural lands. In all other areas, Minnesota Power requests that the National Electrical Safety Code (NESC) be allowed to dictate the appropriate design clearances.[690]

696. The NESC is a voluntary standard adopted by most electric utilities in the United States. The NESC sets forth basic provisions for safeguarding of persons from hazards arising from installation, operation, or maintenance of electrical facilities. The

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[685] Ex. 119, Appendix B (Final Environmental Impact Statement).
[686] *See* Ex. 119, Appendix B (Final Environmental Impact Statement).
[687] Ex. 119, Appendix B-11(Final Environmental Impact Statement).
[688] Ex. 119, Appendix B-12 (Final Environmental Impact Statement).
[689] Ex. 62 at 9-10 (Winter Supp.).
[690] *Id.* at 15 (Winter Supp.).

NESC mandates that high voltage power lines in the United States be designed to limit the impact of electrostatic effects on nearby equipment. This requirement is set forth in NESC Rule 232.C.1.c, which states in pertinent part:

> For voltages exceeding 98 kV AC to ground, either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means as required to limit the steady –state current due to electrostatic effects to 5 mA (milliamperers) if the largest anticipated truck, vehicle, or equipment under the wire were short-circuited to ground.[691]

697. Put simply, the NESC Rule 232.C.1.c requires that if the largest vehicle expected in an area is parked underneath a transmission line and a person standing on the ground makes contact with that vehicle's surface, the amount of electrical current that can flow through the person must not exceed five milliamperers (5 mA). This is what is commonly referred to as the "NESC 5 mA Rule."

698. According to Minnesota Power, the 5 mA Rule is based on data from the Naval Medical Research Institute, which indicates that induced electrical currents under 9 mA are likely within the release threshold of an adult male worker and are, therefore, not considered to be hazardous to human health.[692]

699. For this Project, which traverses a broad and diverse area throughout its approximately 220 mile length, the Company seeks to use NESC 5 mA Rule instead of the Commission's 8kV/m Limitation when determining how much clearance is necessary for the electrical conductors in various areas along the line. Minnesota Power proposes that the clearances be selected based upon the NESC 5mA Rule as opposed to the 8 kV/M Limitation. To that end, the Company seeks to conduct calculations on three different types of areas, selecting an "appropriately-sized" vehicle for each category. Those categories include: predominantly agricultural areas, road crossings, and all other areas.[693]

700. Under the Company's proposal, in predominantly agricultural areas, the Company's NESC 5 mA Rule calculations would be based on manufacturer's specifications for a very large "super" combine, which represents the largest vehicle that may reasonably be expected to drive under the line in those areas.[694]

701. At road crossings, the Company's NESC 5 mA Rule calculations would be based on the largest truck and trailer combinations allowed on public roads per the relevant Minnesota Statutes (see Minn. Stat. §§ 169.011, 169.80-169.88).[695]

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[691] *National Electrical Safety Code* C2-2012 at 92-93, Institute of Electrical and Electronic Engineers, Inc. (New York, NY 2011).
[692] Ex. 62 at 10 (Winter Supp.).
[693] *Id.* at 10 (Winter Supp.).
[694] *Id.*at 10-11 (Winter Supp.).
[695] *Id.* at 11 (Winter Supp.).

702. In all other areas of the Project, the Company's NESC 5 mA Rule calculations would be based upon a typical 40-foot school bus. The Company believes that a school bus will provide "appropriately conservative" design clearances that safeguard the health and safety of the public.[696]

703. Minnesota Power asserts that applying the 8 kV/m Limit to this Project will, in some circumstances, result in higher Project costs with no substantive health benefits derived from those costs. The Company asserts that in predominantly agricultural areas and at road crossings, the 8 kV/m Limit is consistent with the NESC 5 mA Rule. However, in the more remote and less accessible areas traversed by most of the Project, the 8 kV/m Limit is more restrictive than the NESC 5 mA Rule. According to Minnesota Power, the NESC 5 mA Rule will give its transmission line designers flexibility to incorporate appropriate assumptions into the design clearances that do not penalize areas where smaller vehicles might be expected.[697]

704. The DOC-EERA did not expressly oppose the Company's request to use the NESC 5 mA Rule for remote areas of the line. However, the Administrative Law Judge is without sufficient information in the record to provide analysis of the Company's request and can, therefore, make no informed recommendation related to this request.

CONCLUSIONS OF LAW

A. Procedural Requirements

1. The Public Utilities Commission and Administrative Law Judge have jurisdiction to consider Applicant's Application for a Route Permit.

2. The Commission determined that the Application was substantially complete and accepted the Application on July 2, 2014.[698] The Applicant agreed to extend the twelve-month timeframe for a decision on the Route Permit due to the complexities of the environmental review and the involvement of federal agencies in the approval of an international border crossing and development of a joint EIS.[699]

3. Minnesota law and rules set forth specific notice requirements that must be met when a party applies for a route permit for the construction of a high-voltage transmission line. These requirements are set forth in Minn. Stat. § 216E.03 and Minn. R. 7850.2100, .2300, .2500, and .2600.

4. The Applicant complied with the notice requirements of Minn. Stat. § 216E.03, subds. 3a, by providing notice to each local unit of government within which

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[696] *Id.* at 11 (Winter Supp.).
[697] *Id.* at 14-15 (Winter Supp.).
[698] ORDER FINDING APPLICATION COMPLETE AND REFERRING MATTER TO THE OFFICE OF ADMINISTRATIVE HEARINGS (July 2, 2014) (eDocket No. 20147-101165-01).
[699] Prehearing Tr. at 12 (July 21, 2014).

a route may be proposed at least 90 days before filing an application with the Commission.

5. The Applicant substantially complied with the notice requirements of Minn. Stat. § 216E.03, subd. 4 and Minn. R. 7850.2100, subp. 2, 3, 4, and 5. The Applicant timely served notice of the Project on the Commission's general list and published notice of the Application in legal newspapers of general circulation in each county in which a route was proposed. The Applicant also served timely notice on landowners whose property is located adjacent to routes proposed in the Application.

6. The Applicant failed to send a copy of the Application by certified mail to all regional development commissions, counties, incorporated municipalities, and towns in which the route is proposed in conformity with Minn. Stat. § 216E.03, subd. 4. However, the Applicant did send general notice of the Project to many of these entities within 15 days of filing its Application. Given that the Application was voluminous and that the general notice letter advised each governmental entity where to access a copy of the Application, the Administrative Law Judge finds that the Applicant's failure to comply with the requirements of Minn. Stat. § 216E.03, subd. 4 and Minn. R. 78500.2100 was harmless error.

7. Minnesota Statutes section 216E.03, subd. 4, provides that "[t]he failure to give mailed notice to a property owner, or defects in the notice, does not invalidate the proceedings, provided a bona fide attempt to comply with [the law] has been made."

8. Similarly, Minn. R. 7850.2100, subp. 6, provides that "[t]he failure of the applicant to give the requisite notice does not invalidate any ongoing permit proceedings provided the applicant has made a bona fide attempt to comply…."

9. The Applicant has established that it made a bona fide attempt to comply with Minn. Stat. § 216E.03 and Minn. R. 7850.2100. Accordingly, any defects in the notice provided to governmental entities do not invalidate the proceedings.

10. The Commission and the DOC-EERA gave all notices required by Minn. Stat. § 216E.03, subd. 6; and Minn. R. 7850.2300, subp. 2, 7850.2500, subps. 2, 7, 8, 9, and 7850.2600, subp. 1.

11. Public hearings were conducted in communities located along the proposed transmission line route. The Applicant, DOC-EERA, and Commission gave proper notice of the public hearings, and the public was given the opportunity to appear at the hearings, question witnesses, and submit public comments.

12. All procedural requirements under rule and law for the issuance of a route permit were met.

B. Adequacy of the Environmental Impact Statement

13. As part of its considerations in this Route Permit proceeding, the Commission must also determine the adequacy of the FEIS, which was prepared jointly by the DOE and DOC-EERA.[700]

14. Minnesota Rules part 7850.2500, subpart 10, provides that an FEIS is adequate if it:

- addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application;
- provides responses to the timely substantive comments received during the draft environmental impact statement review process; and
- was prepared in compliance with the procedures in parts 7850.1000 to 7850.5600.[701]

15. DOC-EERA and DOE issued the FEIS on October 30, 2015. The FEIS is a multi-volume document comprising over 3,200 pages. The FEIS presents a thorough discussion of the issues and alternatives raised in the scoping process, considering the availability of information and the time limitations for considering the permit application.

16. The FEIS responded to a majority of the timely substantive comments DOC-EERA and DOE received on the DEIS, and was prepared in compliance with the procedures set forth in Minn. R. 7850.1000 to 7850.5600.

17. The Administrative Law Judge finds that the FEIS is adequate for use by the Commission in this proceeding.

C. Route Selection

18. The evidence in the record demonstrates that, overall, the Blue Route best satisfies the route permit criteria set forth in Minn. Stat. § 216E.03, subds. 7(a) and (b), and Minn. R. 7850.4100 for all areas except in the Effie Variation Area (East Section). In that region, the Administrative Law Judge finds that the Effie Variation and the East Bear Lake Variation better meet the route permit criteria set forth in Minnesota rule and law. Moreover, the Effie and East Bear Lake Variations are supported by the MNDNR, and is overwhelmingly favored by the public and communities in the Effie Variation Area.

19. Specifically, the Effie Variation and the East Bear Lake Variation utilize existing utility corridors and thereby reduce new impacts to pristine areas of wilderness in the state and prevent further forest fragmentation. In addition, these variations leave intact large blocks of habitats, including those associated with MBS Sites of Biodiversity

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[700] Minn. R. 7850.2500, subp. 10 (2015).
[701] *Id.*

Significance, Old Growth Forest, peatlands, forested wetlands, and critical wildlife habitat, particularly for the Canada Lynx.

20. The Administrative Law Judge respectfully recommends that the Commission select the proposed Blue Route for all portions of the route except for the Effie Variation Area. In the Effie Variation Area (East Section), the Administrative Law Judge recommends that the Commission select the Effie Variation, which includes the East Bear Lake Variation.

21. The Administrative Law Judge further recommends that the Commission adopt the Trout Lake Alignment Modification so as to minimize the impact of the Blue Route on residences in that alignment area. Other alignment modifications shall be considered during the Commission's final review and in the Plan and Profile process.

D. Route Permit Conditions

22. The Administrative Law Judge recommends that the Commission include the standard General Conditions set forth in its Route Permit Generic Template, including those related to Electric Fields (Section 4.7.2) and Applicable Codes (Section 4.8.1).

23. The Commission may determine, in its expertise, whether Minnesota Power's request to utilize the NESC 5 mA Rule is acceptable for remote areas of the line where human habitation and use is minimal.

24. In addition, the Administrative Law Judge recommends that the Commission include the following Special Permit Conditions or modifications to the general template permit conditions, as recommended by the DOC-EERA:

- Construction Environmental Control Plan. The Applicant/Permittee shall develop a Construction Environmental Control Plan (CECP) that shall include all environmental control plans and special conditions imposed by permits or licenses issued by state or federal agencies related to agency-managed resources. Plans within the CECP shall include, but not be limited to, the Agricultural Impact Mitigation Plan, the Avian Mitigation Plan, the Vegetation Management Plan, and a Stormwater Pollution Prevention Plan. The CECP shall be filed with the Commission 30 days prior to submitting the plan and profile for any segment of the Project.

- Agriculture Mitigation Plan. The Applicant/Permittee shall comply with the Agricultural Impact Mitigation Plan (AIMP) prepared for this Project and approved by the Minnesota Department of Agriculture. The Applicant/Permittee shall distribute the AIMP with the route permit to all affected landowners in accordance with Section 4.5 of the template.

- Vegetation Management Plan. The Applicant/Permittee shall develop a Vegetation Management Plan (VMP). The VMP shall be developed in consultation with the MNDNR. The Applicant/Permittee shall submit the

VMP with the CECP and monitor compliance with the VMP in accordance with the procedures set forth in the VMP. The purpose of the VMP shall be to identify measures to minimize the disturbance and removal of vegetation for the Project, prevent the introduction of noxious weeds and invasive species, and re-vegetate disturbed non-cropland areas with appropriate native species in cooperation with landowners and state, federal, and local resource agencies, in such a way that does not negatively impact the safe and reliable operation of the Project.

- Avian Mitigation Plan. The Applicant/Permittee shall develop an Avian Mitigation Plan (AMP). The AMP shall be developed in consultation with the MNDNR. The Applicant/Permittee shall submit and implement the plan in accordance with the CECP for the Project. The Purpose of the AMP shall be to identify site-specific risks to avian species from the Project and to identify and implement strategies to avoid and mitigate potential impacts to these species, including but not limited to, the use of bird flight diverters. The AMP shall include and document Applicant's/Permitee's consultation with the MNDNR and the USFWS in the development of the AMP.

- Consultation with the USFWS. Because of the current and potential federal decisions required for the Project, formal consultation with the USFWS under Section 7 of the Endangered Species Act is required. In light of the significant consultation discussions and negotiations between the Applicant and USFWS, the template permit language, where appropriate, within the General Permit Conditions should be modified to defer to the Biological Opinion and require the Applicant/Permittee to advise and document for the Commission its consultation with the USFWS on avoidance, mitigation, and conservation measures developed and agreed upon with the USFWS for the protection of federally-listed species and their critical habitats, and for migratory birds as appropriate.

- Programmatic Agreement. Because of the federal decisions required for the Project, review of the Project and consultation with tribes and agencies under Section 106 of the National Historic Preservation Act is required. In light of the significant consultation with potentially affected parties and responsible agencies, the template permit language for Archaeological and Historic Resources Permit Condition 4.8.2 should be modified to defer to the Programmatic Agreement and require Minnesota Power to advise the Commission when the measures to avoid, minimize or mitigate adverse effects to cultural resource and environmental justice impacts identified in the Record of Decision have been fulfilled.

25. The Administrative Law Judge also respectfully recommends that the Commission review the General Conditions in its Route Permit Template to address the ROW construction and maintenance issues raised by commenter Charlotte Neigh.[702]

26. Finally, the Administrative Law Judge Applicant recommends that the Commission require the Applicant to continue to work with state and federal agencies, including the MNDNR and USFWS, to obtain approval for all necessary permits for this Project.

RECOMMENDATION

Based on the foregoing Findings and Conclusions, **IT IS HEREBY RECOMMENDED** that the Minnesota Public Utilities Commission grant a Route Permit to Minnesota Power for the Great Northern Transmission Line consistent with the Findings and Conclusions set forth above.

Dated: January 14, 2016

s/Ann C. O'Reilly
ANN C. O'REILLY
Administrative Law Judge

NOTICE

This Report is not an order and no authority is granted herein. The Minnesota Public Utilities Commission will issue the final order of authority in this proceeding, which may adopt or differ from the recommendations in this Report.

[702] PUBLIC COMMENT (September 2, 2015) (eDocket No. 20159-113725-01) and PUBLIC COMMENT (November 2, 2015) (eDocket No. 201511-115431-01).