STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF GREAT RIVER ENERGY FOR A ROUTE PERMIT FOR A 115 kV TRANSMISSION PROJECT NEAR PALISADE, MINNESOTA IN AITKIN COUNTY	PUC Docket No. ET2/TL-15-423 OAH Docket No. 5-2500-32920 GREAT RIVER ENERGY'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

TABLE OF CONTENTS

Page

TABLE OF CONTENTS
(continued)

Page

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A public hearing was held before Administrative Law Judge ("ALJ") James Mortenson on May 5, 2016 at the Waukenabo Town Hall near Palisade, Minnesota.

Dan Lesher, Senior Field Representative; Carole Schmidt, Supervisor, Transmission Permitting and Compliance; Chuck Lukkarila, Project Manager; Kyle Gustofson, Engineer; and Jenny Guardia, Communications Coordinator appeared on behalf of Great River Energy, 12300 Elm Creek Boulevard, Maple Grove, MN 55369 ("Applicant"). Lisa Agrimonti, Fredrikson and Byron, P.A., also appeared on behalf of Applicant.

Suzanne Steinhauer, Environmental Review Manager, 445 Minnesota Street, Suite 1500, St. Paul, MN 55101 appeared on behalf of the Department of Commerce, Energy Environmental Review and Analysis ("EERA").

Mike Kaluzniak, Minnesota Public Utilities Commission ("Commission") Staff, 121 Seventh Place East, Suite 350, St. Paul, MN 55101 appeared on behalf of the Commission.

STATEMENT OF ISSUE

Has the Applicant satisfied the factors set forth in Minnesota Statutes Section 216E.03 and Minnesota Rules Chapter 7850 for a Route Permit for a 115 kilovolt ("kV") transmission project near Palisade, Minnesota in Aitkin County (the "Project")?

SUMMARY

The Commission concludes that the Applicant has satisfied the criteria set forth in Minnesota law for a Route Permit and the Commission GRANTS the Applicant a Route Permit.

Based on information in the Application, the Environmental Assessment ("EA"), the testimony at the public hearing, written comments, and exhibits received in this proceeding, the Commission makes the following:

FINDINGS OF FACT

I. APPLICANT

1. Great River Energy is a not-for-profit generation and transmission cooperative based in Maple Grove, Minnesota. Great River Energy provides electrical energy and related services to 28 member cooperatives, including Mille Lacs Energy Cooperative, the distribution cooperative serving the area to be served by the proposed Project. Great River Energy's distribution cooperatives, in turn, supply electricity and related services to more than 650,000 residential, commercial, and industrial customers in Minnesota and Wisconsin.[1]

II. PROCEDURAL HISTORY

2. On May 4, 2015, Applicant filed with the Commission a Notice of Intent to Submit a Route Permit Application under the Alternative Permitting Process for the Project.[2]

3. On August 25, 2015, Applicant submitted an Application for a Route Permit ("Application") for the Project.[3] The Application included a Proposed Route with two variations, the East Option and the West Option, to provide for alternative crossings of the Mississippi River.[4]

4. On August 27, 2015, the Commission issued a Notice of Comment Period on Application Completeness.[5]

5. On September 3, 2015, Applicant provided notice of the Application to the General List, persons who own land on or adjacent to the proposed route, local officials, and agencies.[6]

6. On September 14, 2015, EERA filed its comments and recommendations regarding the completeness of the Application and recommended the Application be found complete.[7]

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[1] Ex. 3 at 1-1 (Application).

[2] Ex. 1 (Notice of Intent to Submit Route Permit Application).

[3] Ex. 3 (Application).

[4] Ex. 3 at 4-1 (Application).

[5] Notice of Comment Period on Application Completeness (Aug. 27, 2015), eDockets Document No. 20158-113561-01.

[6] Ex. 4 (Notice of Route Permit Application).

[7] Ex. 100 (EERA Comments and Recommendations to Commission on Route Permit Application Completeness).

7. On September 18, 2015, the Commission issued a Notice of Meeting on Application Completeness for October 1, 2015.[8]

8. On October 1, 2015, the Commission met and found the Application complete.[9]

9. On October 2, 2015, Applicant filed affidavits of mailing and affidavits of publication for the Notice of Application, as required under Minnesota Statutes Sections 216E.03, Subdivision 4 and 216E.04, Subdivision 4; and Minnesota Rule 7850.2100, Subpart 4.[10]

10. On October 7, 2015, the Commission and EERA issued a Notice of Public Information and EA Scoping Meeting.[11] This notice was also published in the *Aitkin Independent Age* on October 14, 2015, as required under Minnesota Statutes Sections 216E.03, Subdivision 4 and 216E.04, Subdivision 4; and Minnesota Rule 7850.2100, Subpart 2.[12]

11. On October 19, 2015, the Commission issued its Order Accepting the Application as Complete.[13]

12. On October 27, 2015, the Commission and EERA held a Public Information and EA Scoping Meeting at the Waukenabo Town Hall in Palisade, Minnesota, at 6:00 p.m.[14] At the hearing, landowners expressed concern over the Project crossing their properties, a township supervisor inquired about the Project's impact on property tax base, and the possibility of following anticipated pipeline right-of-way ("ROW") for a portion of the Project's route was discussed.

13. On November 10, 2015, the Minnesota Department of Transportation ("MnDOT") filed a comment. [15]

14. Also on November 10, 2015, the Minnesota Department of Natural Resources ("DNR") filed scoping comments.[16]

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[8] Notice of Commission Meeting (Sept. 18, 2015), eDockets Document No. 20159-114106-03.

[9] Order Finding Application Complete, Granting Variance, and Referring Application to the Office of Administrative Hearings (Oct. 19, 2015), eDockets Document No. 201510-114930-01.

[10] Ex. 5 (Confirmation of Notice of Route Application).

[11] Notice of Public Information and EA Scoping Meeting (Oct. 7, 2015), eDockets Document No. 201510-114655-01.

[12] Ex. 7 (Newspaper Affidavits for Information and Scoping Meeting).

[13] Order Finding Application Complete, Granting Variance, and Referring Application to the Office of Administrative Hearings (Oct. 19, 2015), eDockets Document No. 201510-114930-01.

[14] Notice of Public Information and EA Scoping Meeting (Oct. 7, 2015), eDockets Document No. 201510-114655-01.

[15] MnDOT Comments (Nov. 10, 2015), eDockets Document No. 201511-115606-01.

[16] Ex. 101 at 2-3 (Written Comments on Scope of EA).

15. On November 10, 2015, Applicant filed comments submitting an additional route option for inclusion in the EA. Applicant stated that the additional route option, known as the Chute Gardens Route Option, offered a third alternative for crossing the Mississippi River, and that Applicant had discussed the route option with the landowner and would work with EERA to identify an alignment that is agreeable to the landowner.[17]

16. On November 10, 2015, the scoping comment period ended.[18]

17. On November 19, 2015, EERA issued comments and recommendations on the EA Scoping Process and Alternative Routes to the Commission.[19] EERA recommended that two alternatives (Chute Gardens Alternative Route Segment and Pipeline Alternative Route Segment) be included in the EA.

18. On November 25, 2015, Applicant filed the newspaper affidavit of publication for the October 27, 2015 Information and EA Scoping Meeting.[20]

19. On December 4, 2015, the Commission issued a Notice of Commission Meeting (December 17, 2015) noting that it would consider what action it should take in regard to route alternatives to be evaluated in the EA.[21]

20. On December 17, 2015, the Commission met to consider what action to take regarding route alternatives to be evaluated in the EA.[22]

21. On December 22, 2015, the Department of Commerce issued its EA Scoping Decision.[23]

22. On December 23, 2015, the Department of Commerce issued notice of its EA Scoping Decision.[24]

23. On January 14, 2016, the Commission issued a generic route permit template.[25]

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[17] Ex. 6 (Scoping Comment – Additional Route Option).

[18] Notice of Public Information and EA Scoping Meeting (Oct. 7, 2015), eDockets Document No. 201510-114655-01.

[19] Ex. 103 at 5 (Comments and Recommendations to Commission on Scoping Process and Route Alternatives).

[20] Ex. 7 (Newspaper Affidavits for Information and Scoping Meeting).

[21] Notice of Commission Meeting (Dec. 4, 2015), eDockets Document No. 201512-116183-02.

[22] Notice of Commission Meeting (Dec. 4, 2015), eDockets Document No. 201512-116183-02.

[23] Ex. 104 (EA Scoping Decision).

[24] Ex. 105 (Notice of EA Scoping Decision).

[25] Generic Route Permit Template (Jan. 14, 2016), eDockets Document No. 20161-117275-01.

24. On January 14, 2016, EERA filed its Letter to Landowners along Alternative Routes.[26] On February 19, 2016, EERA filed its New Landowner Letter.[27]

25. On February 23, 2016, EERA filed a Notification to Landowners of Additional Routes under Consideration.[28]

26. On April 19, 2016, the Commission issued a Draft Route Permit for the Project.[29]

27. On April 21, 2016, EERA issued the EA for the Project, its Notice of Availability of the EA, and filed the certificate of service for mailing of the EA to public agencies.[30]

28. On April 22, 2016, the Commission issued the Notice of Public Hearing to be held May 5, 2016, at the Waukenabo Town Hall in Palisade, Minnesota, at 6:00 p.m.[31] The Notice further provided that the Commission would accept public comments on the Project through May 16, 2016, at 4:30 p.m.

29. On May 2, 2016, EERA filed the certificate of service for mailing of the EA to public agencies.[32] On the same day, EERA filed its Notice of Availability of EA in the *EQB Monitor*.[33]

30. On May 5, 2016, the ALJ held a Public Hearing at the Waukenabo Town Hall near Palisade, Minnesota at 6:00 p.m.[34]

31. On May 6, 2016, Applicant filed the affidavit of publication of the Notice of Public Hearing, confirming that notice for the May 5, 2016 public hearing was published in the *Aitkin Independent Age* on April 27, 2016.[35]

32. On May 16, 2016, the public hearing comment period ended.[36] During the public hearing comment period, comments were received from two state agencies (DNR and

[26] EERA Letter to Landowners Along Alternative Routes (Jan. 14, 2016), eDockets Document No. 20161-117268-01.

[27] New Landowner Letter (Feb. 19, 2016), eDockets Document No. 20162-118481-02.

[28] Ex. 106 (Letters Notifying Landowners of Additional Routes Under Consideration).

[29] Draft Route Permit (Apr. 19, 2016), eDockets Document No. 20164-120256-01.

[30] Exs. 107 (EA), 108 (Notice of Availability of EA), and Certificate of Service for Mailing of EA to Public Agencies (May 2, 2016), eDockets Document No. 20165-120915-01.

[31] Notice of Public Hearing (Apr. 22, 2016), eDockets Document No. 20164-120509-01.

[32] Ex. 109 (Distribution of EA to Agencies and Library).

[33] Ex. 110 (Notice in *EQB Monitor* of Availability of EA).

[34] Notice of Public Hearing (Apr. 22, 2016), eDockets Document No. 20164-120509-01.

[35] Affidavit of Publication for Notice of Public Meeting (May 6, 2016), eDockets Document No. 20165-121140-01.

[36] Notice of Public Hearing (Apr. 22, 2016), eDockets Document No. 20164-120509-01; Certificate of Service and Service Lists (Apr. 22, 2016), eDockets Document No. 20164-120509-02.

Minnesota Pollution Control Agency ("MPCA"), as well as several members of the public. These comments are summarized in Section XIII below.

III. DESCRIPTION OF THE PROJECT

33. The Project includes construction of a new breaker station and approximately 13 miles of new overhead 115 kV transmission line in Aitkin County, Minnesota (the "Project") to serve the proposed Enbridge Pipeline, Limited Partnership ("Enbridge") Palisade Pump Station.[37]

34. Applicant proposes to use single-pole wood structures with horizontal post insulators for most of the transmission line. H-frame, laminated wood poles, or steel poles may be required in some locations (to cross over a river, to cross under an existing line, for angles poles, or in areas where soil conditions are poor and guying is not practical). Typical pole heights will range from 60 to 90 feet above ground and spans between poles will range from 275 to 450 feet.[38]

35. Applicant is requesting approval of a 400-foot route width for the transmission line (200 feet either side of the transmission line) and wider route widths in some areas where alignment options are limited due to the proximity of homes and other features.[39]

36. Applicant proposes a ROW of 100 feet in width for the Project.[40]

IV. NEED OVERVIEW

37. The Project will provide electrical service to the proposed new Enbridge Palisade distribution substation, which will in turn serve Enbridge's proposed Palisade Pump Station, which is part of Enbridge's Line 3 Replacement Project.[41] The Project will not be constructed unless and until the Line 3 Replacement Project receives applicable approvals from the Commission.[42] The Line 3 Replacement Project is currently pending before the Commission in docket numbers CN-14-916 and PPL-15-137.

[37] Ex. 107, at 2 (EA).

[38] Ex. 107, at 4 (EA).

[39] Ex. 107, at 4 (EA).

[40] Ex. 107, at 4 (EA).

[41] Ex. 107, at 2 (EA).

[42] Ex. 107 at 26 (EA).

V. ROUTES EVALUATED

A. Route/Route Options Proposed by Applicant

38. Applicant evaluated the Project area and determined that identifying route options were constrained by the location of the proposed Enbridge pump station, the ability to connect to existing infrastructure, the geographical area of the proposed Project, and engineering constraints associated with getting proper clearances around existing infrastructure.[43]

39. The Application included two route options, the East Option and the West Option. The East Option would begin at the proposed Rice River Breaker Station just west of U.S. Highway 169 and south of 390th Street. From there the East Option would follow U.S. Highway 169 north for approximately 13 miles, crossing the Mississippi River adjacent to U.S. Highway 169 and terminating at the proposed pump station location on the east side of the highway and south of 510th Lane. The West Option provides an alternative to the East Option's U.S. Highway 169 Mississippi River crossing. The West Option would follow the highway from the proposed Rice River Breaker Station for approximately four miles to 430th Street where the West Option would turn west. The West Option would continue for approximately one-half mile to the termination of 430th Street. From there the West Option would follow a property line northwest across the Mississippi River to County Road 21. The West Option would follow County Road 21 for approximately 1.2 miles back to U.S. Highway 169 and then follow the highway north to the pump station.[44]

40. Using either route option, Applicant's proposed route is approximately 13 miles long and is located in Aitkin County near the town of Palisade in Spencer, Morrison, and Waukenabo townships (the "Proposed Route").[45]

41. Applicant identified and analyzed several interconnection alternatives that were rejected for various reasons.[46] The existing Minnesota Power "13 Line" is the only viable regional interconnection point to provide the source of energy for the Project, and U.S. Highway 169 provides the only existing utility or road ROW between the "13 Line" and the proposed Palisade Pump Station.[47]

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[43] *E.g.*, Ex. 3 at 5-1 to 5-4 (Application).

[44] Ex. 3, at 4-1 (Application).

[45] Ex. 3, at 1-1, 7-1 (Application). Except where otherwise specified herein, the "Proposed Route" refers to the route, including the East and West Options, included in the Application.

[46] Ex. 3, at 5-4 (Application).

[47] Ex. 3, at 5-4 (Application).

B. Route Segments Proposed Through Public Participation.

42. The Scoping Decision identified two additional alternative route segments to be evaluated in the EA:

1. Chute Gardens Alternative Route Segment

43. The "Chute Gardens Alternative Route Segment" was proposed by Applicant. The "Chute Gardens Alternative Route Segment" would turn west from US Highway 169 in the vicinity of 445th Lane and head west for approximately one-quarter of a mile before crossing the Mississippi River. On the west side of the Mississippi, this alternative would follow the Great River Road northeast for approximately 0.75 miles before re-connecting with US Highway 169.[48]

44. The "Pipeline Alternative Route Segment" was proposed at the October 27, 2015 public meeting and would turn east from the Proposed Route and follow Aitkin County Highway 3 for approximately one-quarter mile before following Enbridge's proposed Line 3 route north for approximately three miles to the proposed Palisade Pump Station location. [49]

45. The Proposed Route (including the East Option and West Option), the Chute Gardens Alternative Route Segment, and the Pipeline Alternative Route Segment were evaluated in the EA.[50] For ease of comparison, the EA categorized the Proposed Route and Route Alternatives into nine route segments and six route alternatives.[51] The EA's description of these alternatives is included below for ease of reference. In addition, the EA's map depicting the Route Alternatives is attached hereto as Exhibit A. For purposes of clarity, the EA refers to the Proposed Route + East Option as "Route A" and the Proposed Route + West Option as "Route B."

- **Route A**: Follows US Highway 169 between proposed Rice River Breaker Station, turning east along 510th Lane to the proposed Palisade Pump Station. This route is approximately 13 miles in length and combines route segments A, B, C, D, and E. Alternative alignments on either side of US Highway 169 (along route segment C) are evaluated.
- **Route B**: Follows US Highway 169 north from the proposed Rice River Breaker Station turning west on 430th Street, crossing the Mississippi River and then proceeding northeast along Great River Road/CSAH 21 to US Highway 169, turning east along 510th Lane to the proposed Palisade Pump

[48] Ex. 104, at 8 (EA Scoping Decision).

[49] Ex. 104, at 8 (EA Scoping Decision).

[50] Ex. 107, at 27-31 and Appendix E (EA).

[51] Ex. 107, at 29-30 (EA).

Station. This route is approximately 13.8 miles in length and combines route segments A, F, G, D, and E.

- **Route C**: Follows US Highway 169 north from the proposed Rice River Breaker Station, turning west along the south side of 435th Lane, then cross-country across the river to Great River Road/CSAH 21 back to US Highway 169, turning east along 510th Lane to the proposed Palisade Pump Station. This route is approximately 13.4 miles in length and combines route segments A, B, H, G, D, and E.
- **Route A/Pipeline Alternative**: Follows US Highway 169 north from the proposed Rice River Breaker Station, turning east along CSAH 3 and then north cross-country along Enbridge's proposed route to Palisade Pump Station. This route is approximately 13.1 miles in length and combines route segments A, B, C, D, and I.
- **Route B/Pipeline Alternative**: Follows US Highway 169 north from the proposed Rice River Breaker Station turning west on 430th Street, crossing the Mississippi River and then proceeding northeast along Great River Road/CSAH 21 to US Highway 169, turning east along CSAH 3 and then north cross-country along Enbridge's proposed route to Palisade Pump Station. This route is approximately 13.9 miles in length and combines route segments A, F, G, D, and I.
- **Route C/Pipeline Alternative**: Follows US Highway 169 north from the proposed Rice River Breaker Station, turning west along the south side of 435th Lane, then cross-country across the river to Great River Road/CSAH 21 back to US Highway 169, turning east along CSAH 3 and then north cross-country along Enbridge's proposed route to Palisade Pump Station. This route is approximately 13.5 miles in length and combines route segments A, B, H, G, D, and I.

VI. TRANSMISSION LINE STRUCTURE TYPES AND SPANS

46. Applicant proposes to use overhead construction with wood structures. Applicant proposes to primarily use single pole structures. Wood poles would be directly embedded and may require guying at certain locations including but not limited to, angle locations.[52]

47. H-Frame structures may be used in areas where longer spans are required to avoid or minimize impacts to wetlands or waterways.[53]

[52] Ex. 3, at 4-4 (Application); Ex. 107, at 19-20 (EA).

[53] Ex. 3, at 4-4 (Application); Ex. 107, at 19-20 (EA).

VII. TRANSMISSION LINE CONDUCTORS

48. The single circuit structures will have three single conductor phase wires and one shield wire. It is anticipated that the phase wires will be 477 ACSR, with seven steel core strands and 26 outer aluminum strands. The shield wire will be 0.528 optical ground wire.[54]

VIII. TRANSMISSION LINE ROUTE WIDTHS

49. Applicant is requesting approval of a 400-foot route width for the transmission line and wider route widths in the following areas:[55]

- **Palisade Pump Station:** A route width of approximately 825 feet in the area around Enbridge's proposed Palisade Pump Station. Detailed information on the specific location and design of the proposed pump station is not available at this point, and a greater route width in this area would provide design flexibility to accommodate the final location and design of the proposed pump station.
- **U.S. Highway 169 Mississippi River Crossing**: A variable route width in this area to address design challenges related to existing residential structures and uncertainty related to MnDOT permitting requirements. Applicant identified a route width that tapers from 850 feet beginning at 435th Lane to 650 feet at the junction of US Highway 169 and Great River Road/CR 21.
- **Alternative River Crossing (West Option)**: A route width of approximately 700 feet to provide for the flexibility to have an alignment on either side of the buildings located on the property.
- **Rice River Breaker Station**: A route width of approximately 1,200 feet to provide flexibility to modify the transmission alignment to match the final breaker station location and layout.

IX. TRANSMISSION LINE RIGHT-OF-WAY

50. Applicant requested to use its standard ROW for 115 kV transmission lines of 100 feet (50 feet on either side of the transmission line centerline) for the majority of the Project's route. Select locations may require a slightly wider ROW to accommodate transmission line guy wires and anchors. In certain areas where clearance is very limited by existing infrastructure (e.g. existing buildings), transmission ROW may be reduced to 35 feet on one or both sides of the centerline. Applicant has not yet identified any areas along the evaluated routes where narrower ROW would be required.[56]

[54] Ex. 3, at 4-7 (Application).

[55] Ex. 3, at 1-3, 4-1 to 4-3 (Application).

[56] Ex. 3, at 4-4 (Application).

X. PROJECT SCHEDULE

51. At the time the Application was filed, Applicant anticipated beginning route clearing in late 2016 or early 2017 and commencing construction of the Project in second quarter 2017, provided that Applicant had obtained a Route Permit by early 2016 and Enbridge had also secured applicable permits.[57] However, the timing of construction of the Project is dependent upon the timing of a Commission decision on the Line 3 Replacement Project. Commencement of construction of the Project would not commence before a Commission order issuing a route permit for the Line 3 Project including a Palisade Pump Station. If the Palisade Pump Station is permitted as part of the Line 3 Project, Applicant plans to schedule construction of the Project to be concurrent with Enbridge's construction of the proposed Palisade Pump Station.[58]

XI. PROJECT COSTS

52. Total Project costs are estimated to be approximately $13 million, depending on final route selection and mitigation.[59]

XII. PERMITTEE

53. The permittee for the Project is Great River Energy.[60]

XIII. PUBLIC AND LOCAL GOVERNMENT PARTICIPATION

A. Public Comments

54. Approximately 30 members of the public attended the public information and scoping meeting in Palisade and five people asked questions and provided comments about the Project. Public comments addressed the proposed location of the transmission line, ROW width and location, tax treatment of the Project, economic impacts to landowners from the Project, and health impacts from the Project. Participants at the meeting suggested investigating an alternative alignment that would move the Mississippi River crossing to the east side of US 169. One commenter suggested that an alternative routing option along the proposed Enbridge pipeline route be evaluated in the northern portion of the route.[61]

55. Approximately 20 members of the public attended the public hearing in Palisade and 10 people spoke on the record. Public comments included: a preference to stay on US Highway 169 for the Mississippi River crossing (2); a preference for the Chute Gardens

[57] *See* Ex. 3, at 4-9 (Application).

[58] *See* Ex. 107, at 26 (EA).

[59] Ex. 3, at 1-3 (Application).

[60] Ex. 3, at 1-1 (Application).

[61] Ex. 104, at 4 (EA Scoping Decision).

alternative to cross the Mississippi River (2); a preference to stay on US Highway 169 on the north end of the Project rather than follow the Pipeline Alternative Segment (2); a preference to follow the Pipeline Alternative Segment rather than US Highway 169 (1); a suggestion that the pump station be moved further south (1); a preference to not have the line along the Great River Road (1); and a question on whether land under the line can be farmed (1).[62]

56. Several members of the public submitted written comments during the public hearing comment period. In general, commenters expressed a preference for following existing ROWs. In addition, one commenter expressed concerns about the impacts of the West Option on future plans for his property.[63]

B. Local Government and State Agency Participation

57. During the EA scoping comment period, EERA received written comments from two state agencies (MnDOT and DNR).

58. MnDOT stated that its approach is to work to accommodate high voltage transmission lines within or as near as feasible to trunk highway ROW and referred to its utility accommodation policy. MnDOT noted that both the East and West Route Options for the Project would follow US Highway 169 for a majority of their length and that an Application for Utility Accommodation on Trunk Highway Right of Way for the Project will need to be reviewed on a pole-by-pole basis. In addition, MnDOT indicated it had discussed with the Applicant issues relating to interchanges and separated grade crossings, conductor movement envelope, and vegetation management. [64]

59. The DNR indicated that a cumulative impacts analysis of the Project and related projects (Enbridge Sandpiper and Line 3 Replacement projects) should be included in the EA. The DNR also said the EA should include the topic of avian mitigation measures, and asked that bird diverters be placed on the line at certain locations. DNR suggested that the EA include a discussion of using seasonal (winter) construction and maintenance activities as a mitigation measure for impacts to wetland, forest and rare species, as well as a discussion related to proposed maintenance methods (including a discussion of the wire zone/border zone method) and vegetation management at public water crossings.[65]

60. During the public hearing and subsequent comment period, written comments were received from two state agencies: MPCA and DNR.[66] MPCA filed a letter stating that it

[62] *E.g.*, Transcript of May 5, 2016 Public Hearing at 26 (May 17, 2016), eDockets Document No. 20165-121435-01.

[63] Public Comment (May 17, 2016), eDockets Document No. 20165-121430-01.

[64] MnDOT Comments (Nov. 10, 2015), eDockets Document No. 201511-115606-01.

[65] DNR Comments (Nov. 10, 2015), eDockets Document No. 201511-115613-01.

[66] *See* DNR Comments (May 16, 2016), eDockets Document Nos. 20165-121393-01 through -03; MPCA Letter (May 16, 2016), eDockets Document No. 20165-12364-01.

had no comments on the Project at that time. DNR recommended the use of bird diverters and border zone/wire zone vegetation management practices, as well as permit conditions requiring the Applicant to coordinate with DNR regarding avian mitigation and vegetation management. DNR further recommended a permit condition requiring the use of wildlife-friendly erosion control in or near wetlands, water crossings, Sites of Biodiversity Significance, and areas with rare species susceptible to entanglement. Overall, DNR indicated that Route A most effectively reduced natural resource impacts.

61. In addition, Applicant received comments from the following agencies, as detailed below:

- On August 17, 2015, the MnDOT Office of Aeronautics notified Applicant it had no issues with the proposed Palisade 115 kV transmission line.

- On May 28, 2015, the Minnesota Historical Society State Historic Preservation Office ("SHPO") recommended that a Phase 1 archeological survey be completed, but that it would reconsider the need for a survey if the Project area were previously surveyed or disturbed. After Applicant provided additional Project information, on July 15, 2015, SHPO concluded that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by the Project.

- On August 13, 2015, the United States Fish and Wildlife Service ("USFWS") noted that there is one known northern long-eared bat ("NLEB") roost tree within 0.25 mile of the Project area, but indicated that if tree removal associated with the Project is small and no clearing is done between April and September, then a no effect determination may be possible. The action could also result in a "may affect, but not likely to adversely affect" determination.[67]

- On August 7, 2015, the DNR noted that the following rare features may be adversely affected by the proposed Project: two Sites of Biodiversity Significance adjacent to the Project (in particular a Sedge Meadow, uncommon but not rare in Minnesota); rare birds in the vicinity of the Project (timing of construction and use of bird diverters should be considered); the NLEB; the creek heelsplitter and black sandshell (state-listed mussels of special concern) in the Mississippi River in the vicinity of the proposed overhead crossing (recommended effective erosion and sediment control practices be used).[68]

- On August 24, 2015, the United States Army Corps of Engineers ("USACE") provided general information on its regulatory program/Project permitting but

[67] Ex. 3, at Appendix E (Application).

[68] Ex. 3 at Appendix E (Application).

indicated it will not review or comment on the Project until there is a specific request before it. [69]

FACTORS FOR A ROUTE PERMIT

62. The Power Plant Siting Act ("PPSA"), Minnesota Statutes Chapter 216E, 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."[70]

63. Under the PPSA, the Commission must be guided by the following responsibilities, procedures, and 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, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
>
> (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;
>
> (4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;[71]
>
> (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;

[69] Ex. 3 at Appendix E (Application).

[70] Minn. Stat. § 216E.03, Subd. 7.

[71] Factor 4 is not applicable because Applicant is not proposing to site a large electric generating plant.

(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 proposed pursuant to subdivision 1 and 2;

(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 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.[72]

64. In addition, Minnesota Statutes Section 216E.03, Subdivision 7(e), 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 ROW and, to the extent those are not used for the route, the [C]ommission must state the reasons."

65. In addition to the PPSA, the Commission is governed by Minnesota Rule 7850.4100, which mandates consideration of the following factors when determining whether to issue a route permit for a high voltage transmission line:

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;

[72] Minn. Stat. § 216E.03, Subd. 7.

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;

I. use of existing large electric power generating plant sites;[73]

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;

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

N. irreversible and irretrievable commitments of resources.[74]

66. There is sufficient evidence on the record for the Commission to assess the Proposed Route and Route Alternatives using the criteria and factors set forth above.

APPLICATION OF STATUTORY AND RULE FACTORS

I. APPLICATION OF ROUTING FACTORS TO THE PROPOSED ROUTE AND ROUTE ALTERNATIVES

A. Effects on Human Settlement

67. Minnesota law requires consideration of the Project's effect on human settlement, including displacement of residences and businesses; noise created during

[73] This factor is not applicable because it applies only to power plant siting.

[74] Minn. R. 7850.4100.

construction and by operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.[75]

68. Land use along the Project is a mixture of rural residential development, forested land, agriculture, rivers, streams, lakes, and open space. All route alternatives follow US Highway 169 for a majority of their length and cross the Mississippi River, either at an established crossing or by establishing a new crossing.[76]

1. Displacement

69. There is one home and one additional structure within the anticipated ROW. Applicant will modify the alignment or modify the design to facilitate a narrower easement in that area.[77]

70. No residential or commercial displacement will occur as a result of the Project.[78]

2. Noise

71. MPCA has established standards for the regulation of noise levels.[79]

72. The most restrictive MPCA noise limits are 60-65 A-weighted decibels ("dBA") during the daytime and 50-55 dBA during the nighttime.[80]

73. Noise concerns for the Project may be associated with construction and operation of the transmission line.[81]

74. Transmission lines produce noise under certain conditions. The level of noise depends on conductor conditions, voltage level, and weather conditions. Generally, activity-related noise levels during the operation and maintenance of transmission lines are minimal and do not exceed the MPCA Noise Limits outside the ROW.[82]

[75] *See* Minn. Stat. § 216E.03, Subd. 7(b); Minn. R. 7850.4100(A).

[76] Ex. 107, at 37 (EA).

[77] Ex. 107, at 38-40 (EA).

[78] Ex. 20, at 40 (EA).

[79] Ex. 107, at 44-45 (EA).

[80] Ex. 107, at 457 (EA).

[81] Ex. 107, at 45-46(EA).

[82] Ex. 107, at 46 (EA).

75. Opening and closing the breakers at the Rice River Breaker Station will generate noise. The opening and closing occurs very infrequently during line maintenance or in the event of an accident that would trip the breakers to ensure the safety of the line.[83]

76. The audible noise levels for the Proposed Route are not predicted to exceed the MPCA Noise Limits.[84]

77. Similar noise levels (below the MPCA Noise Limits) are anticipated for all alternatives evaluated in the EA.[85]

3. Aesthetics

78. All routes evaluated follow existing roadway for the majority of their length, thereby placing new infrastructure where there is already existing linear infrastructure and minimizing visual disruption from the Project.[86] Aesthetic impacts are anticipated to be minimal because they will be incremental.[87]

79. Route Alternatives B and C would each introduce a new river crossing in a previously undisturbed area.[88]

80. As shown in Table 6 from the EA below, depending on the route, there are between 15 and 20 homes within 200 feet of the anticipated alignment.[89]

[83] Ex. 107, at 46 (EA).

[84] Ex. 107, at 46 (EA).

[85] Ex. 107, at 88 (EA).

[86] Ex. 107, at 37-38 (EA).

[87] Ex. 107, at 38 (EA).

[88] Ex. 107, at 66 (EA).

[89] Ex. 107, at 38 (EA). In cases where the structure counts differ between alignments on the east and west side of US Highway 169, counts on the east side of US Highway 169 are presented in parentheses.

Table 6: Structures in Proximity to Alignment

Structure Type	Distance (feet)	Structure County by Route Alternative[86]					
		Route A	Route B	Route C	Route A/ Pipeline	Route B/ Pipeline	Route C/ Pipeline
Homes	0 - 50	1	1	1	1	1	1
	50 - 100	3 (2)	2	2	2 (1)	1	1
	100 - 200	15 (16)	17	16	12 (13)	14	13
	>200, within Route[87]	12	8	9	10	6	7
Other Structures	0 - 50	1	1	1	1	1	1
	50 - 100	0	3	1	0	3	1
	100 - 200	14	14	17	9	8	12
	>200, within Route	17	14	16	11	8	10

81. Applicant has indicated it will work with landowners to best locate structures and minimize damage to vegetation and natural landscapes.[90]

82. Aesthetic impacts due to the proposed transmission line are anticipated to be minimal because it parallels existing road ROW for the majority of all routes evaluated.[91]

4. Cultural Values

83. The region surrounding the Proposed Project derives from a diverse ethnic heritage. A majority of the reported ethnic backgrounds are of German, Norwegian, Swedish, and Irish origin.[92]

84. No impacts are anticipated to cultural values as a result of construction of any of the routes evaluated in the EA.[93]

5. Recreation

85. There are a number of existing recreational resources within the Project vicinity, including state forests, trails, rivers, and lakes. Popular activities include camping, fishing, hunting, bird watching, canoeing, kayaking, boating, swimming, biking, hiking, cross country skiing, and riding ATVs and snowmobiles.[94]

[90] Ex. 107, at 38-39 (EA).

[91] Ex. 107, at 38-39 (EA).

[92] Ex. 107, at 39 (EA).

[93] Ex. 107, at 39 (EA).

[94] Ex. 107, at 65 (EA).

86. The Project would follow US Highway 169 through the Aitkin Wildlife Management Area ("WMA") and along a portion of the Waukenabo State Forest. The Project would also cross the Aitkin Sno-Drifters and Palisade snowmobile trails either along US Highway 169 or the Pipeline Route Alternative. The Project is not within one mile of any state parks, state trails, Aquatic Management Areas, Scientific and Natural Areas, federal or county parks, or federal forests or refuges. No impacts to local recreational activities due to the Proposed Route or Route Alternatives are anticipated.[95]

87. Applicant will coordinate with the DNR, USFWS, and other resource agencies to minimize impacts from utility line construction on the surrounding natural resources. Where the route crosses through the WMA, it will parallel U.S. Highway 169 and will follow a distribution line (that will be carried on the new line or buried), minimizing impacts to undisturbed areas of the WMA. Locating the transmission line parallel to the highway will also minimize future impacts associated with maintaining the transmission line because the highway offers close access for maintenance vehicles and inspections.[96]

88. Impacts to tourism and recreational opportunities from the Project are anticipated to be minimal to moderate depending on the route selected.[97]

6. Public Services and Infrastructure

89. Temporary impacts to public services resulting from the Project are anticipated to be minimal. Long-term impacts to public services are not anticipated.[98]

90. No impacts to water utilities are anticipated as a result of the Project.[99]

91. The electrical transmission system in the Project area will change as a result of the Project, but no adverse impacts to electrical service are anticipated.[100]

92. No impacts to natural gas service are anticipated as a result of the Project.[101]

93. No impacts to emergency services are anticipated due to the Project.[102]

[95] Ex. 107, at 65-66 (EA).

[96] Ex. 3, at 7-11 (Application).

[97] Ex. 107, at 66 (EA).

[98] Ex. 107, at 56-60 (EA).

[99] Ex. 107, at 60 (EA).

[100] Ex. 107, at 60 (EA).

[101] Ex. 107, at 60 (EA).

[102] Ex. 107, at 57 (EA).

94. Impacts to roads and highways due to the Project construction are anticipated to be minimal and temporary. Applicant has indicated that it will work with roadway authorities to minimize obstructions and inconvenience to the public and that construction equipment will be moved in a manner to minimize safety risks and avoid traffic congestion. Where the Project crosses roadways, Applicant will use temporary guard structures to ensure that the Project does not interfere with traffic. No impacts to roads and highways are anticipated after Project construction.[103]

95. No impacts to airports are anticipated as a result of the Project.[104]

96. Effects on public services and infrastructure from either the Proposed Route or Route Alternatives are expected to be minimal.[105]

B. Effects on Public Health and Safety

97. Minnesota high voltage transmission line routing factors require consideration of the Project's potential effect on health and safety.[106]

1. Construction and Operation of Facilities

98. The Project will be designed in compliance with local, state, National Electric Safety Code ("NESC"), and Applicant's standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, and ROW widths.[107]

99. Applicant's construction crews and/or contract crews will comply with local, state, NESC, and Applicant's standards regarding installation of facilities and standard construction practices. Applicant's and industry safety procedures will be followed during and after installation of the transmission line. This will include clear signage during all construction activities.[108]

100. The Project would be equipped with protected devices to safeguard the public if an accident occurs and a structure or conductor falls to the ground. The new Enbridge Palisade Substation will be equipped with breakers and relays located where the transmission line will connect to the substation. This protective equipment is designed to de-energize the transmission line should such an event occur.[109]

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[103] Ex. 107, at 58-69 (EA).

[104] Ex. 107, at 56-57 (EA).

[105] Ex. 107, at 56-60, 89-90 (EA).

[106] Minn. Stat. § 216E.03, Subd. 7(b)(1); Minn. R. 7850.4100(B).

[107] Ex. 3, at 7-2 (Application).

[108] Ex. 3, at 7-2 (Application).

[109] Ex. 3, at 7-2 (Application).

2. *Electric and Magnetic Fields*

101. There are no federal standards for transmission line electric fields.[110]

102. The Commission has imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground at the edge of the ROW.[111]

103. The calculated electric fields for the Project are less than the maximum limit of 8 kV/m prescribed by the Commission.[112]

104. There are no federal or state regulations for the permitted strength of magnetic fields from transmission lines.[113]

105. Research has not been able to establish a cause and effect relationship between exposure to magnetic fields and adverse health effects.[114]

106. The potential impacts of EMF on human health were at issue in the Route Permit proceeding for the Brookings County to Hampton 345 kV transmission line. In that proceeding, ALJ Luis found that: "The absence of any demonstrated impact by EMF-ELF exposure supports the conclusion that there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for such exposure. The record shows that the current exposure standard for EMF-ELF is adequately protective of human health and safety."[115]

107. Similarly, in the Route Permit proceeding for the St. Cloud-Fargo 345 kV transmission line, ALJ Heydinger found: "Over the past 30 years, many epidemiological studies have been conducted to determine if there is a correlation between childhood leukemia and proximity to electrical structures. Some studies have shown that there is an association and some have not. Although the epidemiological studies have been refined and increased in size,

[110] Ex. 107, at 51 (EA).

[111] Ex. 107, at 52 (EA).

[112] Ex. 107, at 52 (EA).

[113] Ex. 107, at 52 (EA).

[114] Ex. 107, at 53 (EA).

[115] *See In re Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota,* Docket No. ET-2/TL-08-1474, ALJ's Findings of Fact and Conclusions of Law at 44 ¶ 216 (Apr. 22, 2010), eDockets Document No. 20104-49478-01, *adopted as amended*, Commission Order at 8 (Sept. 14, 2010), eDockets Document No. 20109-54429-01.

the studies do not show a stronger related effect. In addition, a great deal of experimental, laboratory research has been conducted to determine causality, and none has been found."[116]

108. There is no indication that any significant impact on human health and safety will arise from the Project.[117]

C. Effects on Land-Based Economies and Direct and Indirect Economic Impacts

109. Minnesota's high voltage transmission line routing factors require consideration of the Project's impacts to land-based economies, specifically agriculture, forestry, tourism, and mining.[118]

110. Impacts to land-based economies due to the Project are anticipated to be minimal to moderate, depending upon the route selected. Impacts to agriculture are anticipated to be minimal. Impacts for forested lands/forestry may be moderate. No impacts to mining or gravel pits are anticipated along any of the routes evaluated in the EA.[119]

1. Agriculture

111. Agriculture is a land-based economic resource along the Proposed Route. Agricultural lands in the Project area are predominantly pasture and hay, with some areas of cultivated crops. Crops grown in the area include hay crops and silage, corn, soybeans, and wheat. Farms in the area raise a variety of livestock including beef and dairy cattle and poultry.[120]

112. Impacts to agricultural operations as a result of the Project are anticipated to be minimal. Agricultural areas along the Project are predominantly along the southern portion of the route alternatives evaluated. As shown in Table 16 below from the EA, the route alternatives evaluated cross between 3.1 and 4.4 miles of agricultural land. However, as agricultural land within a transmission line ROW is generally available for agricultural production, the permanent impact to agricultural operations is much less. The amount of land that will be permanently removed from agricultural production as a result of the Project is estimated at 190 to 265 square feet.[121]

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[116] *In re Application for a Route Permit for the Fargo to St. Cloud 345 kV Transmission Line Project*, Docket No. ET-2, E002/TL-09-1056, ALJ's Findings of Fact, Conclusions of Law at 23 ¶ 125 (Apr. 25, 2011), eDockets Document No. 20114-61700-01, *adopted as amended*, Commission Order at 2 (June 24, 2011), eDockets Document No. 20116-64023-01.

[117] Ex. 20, at 55, 96, 108 (EA).

[118] Minn. Stat. § 216E.03, Subd. 7(b)(5); Minn. R. 7850.4100(C).

[119] Ex. 107, at 60 (EA).

[120] Ex. 107, at 61 (EA).

[121] Ex. 107, at 61 (EA).

Table 16: Agricultural Impacts by Route Alternative

	Route	Route A	Route B	Route C	Route A/ Pipeline	Route B/ Pipeline	Route C/ Pipeline
Ag Length	feet	18,440	23,220	21,730	16,590	21,370	19,880
	miles	3.5	4.4	4.1	3.1	4.0	3.8
Impact[161]	Square feet	210.7	265.4	248.3	189.6	244.2	227.2

113. No impacts to irrigation systems are anticipated as a result of the Project.[122]

114. Temporary impacts, such as soil compaction, crop damage, and disruption to drainage systems may occur during construction of the Project. Construction vehicles are relatively large and can cause rutting and compaction at structure locations and along the transmission line ROW.[123]

115. Impacts to agricultural operations can be avoided and mitigated by prudent routing—i.e., by selecting a route that avoids agricultural fields to the extent possible and minimizes intrusion into agricultural fields by following existing infrastructure ROW, field lines, and property lines. Where poles are placed in fields, impacts can be mitigated by not placing structures diagonally across field, but rather parallel to existing infrastructure ROW or field lines.[124]

116. Agricultural impacts can also be mitigated by construction and remediation measures. Applicant has committed to the following measures to mitigate agricultural impacts from the Project:

- Scheduling construction during lulls in agricultural activity to the extent possible.
- Limiting movement of crews and equipment to the transmission line ROW to the greatest extent possible and obtaining permission from the landowner for construction activities outside of the ROW.
- Repairing and restoring areas disturbed by construction to pre-construction contours so that all surfaces drain naturally.
- Repairing ruts and soil compaction; filling, grading, scarifying, harrowing, disking.
- Placing structures to accommodate existing or proposed irrigation systems.
- Promptly repairing or replacing fences, gates and other improvements that may be removed or damaged during construction.

[122] Ex. 107, at 62 (EA).

[123] Ex. 107, at 62 (EA).

[124] Ex. 107, at 62 (EA).

- Providing compensation to landowners for any crop and property damage.[125]

117. No long-term impacts are anticipated to the agricultural economy from construction of the Project.[126]

2. Forestry

118. Deciduous forest is the predominant land cover in the forested areas. Forested areas in the Project area are logged for both commercial sales and personal use (such as firewood).[127]

119. Direct impacts to forested areas and forestry operations, including timber harvest, are expected to be minimal. As shown in Table 17 below from the EA, the Project crosses between 39 to 62 acres of forested land, depending on the route selected. Depending upon the route, clearing the ROW will remove between approximately 5.4 and 13.7 acres of forested cover types, with routes along the Pipeline Alternative removing a larger acreage of trees. As shown in Table 17, the pipeline alternative route ROWs impact more forested acres that the ROWs for Routes A, B, and C. Given the amount of forested cover in Aitkin County generally, this impact to the County is minimal.[128]

Table 17: Forested Areas by Route Alternative

Route Alternative	Forested Acres		Percentage	
	ROW	Route	ROW	Route
Route A* [169]	6.0 (6.6)	61.6	3	8
Route B	5.4	48.9	3	7
Route C	8.6	53.8	5	7
Route A - Pipeline	11.1 (11.7)	58.2	6	10
Route B - Pipeline	10.5	39.1	6	8
Route C - Pipeline	13.7	44.3	8	8

[125] Ex. 107, at 62-63 (EA).

[126] *See* Ex. 107, at 62-63, 90 (EA).

[127] Ex. 107, at 63-64 (EA).

[128] *See* Ex. 107, at 63-64, 90 (EA).

3. Tourism

120. As set forth in Section I.A.5 above, impacts to tourism and recreational opportunities from the Project are anticipated to be minimal to moderate depending on the route selected.[129]

4. Mining

121. There are no known gravel pits or other mining activity within the Proposed Route or Route Alternatives.[130]

D. Effects on Archaeological and Historic Resources

122. Minnesota Rule 7850.4100(D) requires consideration of the effects on historic and archaeological resources.

123. Applicant's review of SHPO records indicated there is one previously recorded archaeological site and 12 previously recorded standing historic structures within the study area (within one mile of the Proposed Route). The Phase IA literature search concluded that it is unlikely that the Project would have an adverse impact on any known or suspected cultural resources and that architectural review of potential impacts from the Project to existing historic structures is not recommended. After reviewing the results of the Phase IA literature search, SHPO concluded that there are no properties listed in the national or state register of historic places and no known or suspected archaeological properties that would be affected by the Project. [131]

124. Impacts to archaeological or historic sites are not anticipated and no field surveys were recommended.[132]

125. If archaeological sites or resources are identified during Project construction, work will be stopped and SHPO staff will be consulted on how to proceed.[133]

E. Effects on Natural Environment

126. Minnesota's high voltage transmission line routing factors require consideration of the Project's effect on the natural environment, including effects on air and water quality resources and flora and fauna.[134]

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[129] Ex. 107, at 66 (EA).

[130] *See* Ex. 107, at 64 (EA).

[131] Ex. 107, at 67 (EA).

[132] Ex. 107, at 67 (EA).

[133] Ex. 107, at 67 (EA).

[134] Minn. Stat. §§ 216E.03, Subd. 7(b)(1)-(2); Minn. R. 7850.4100(E).

1. Air Quality

127. Ozone and nitrous oxide emissions from the Project are anticipated to be less than state and federal standards. Impacts due to construction dust are anticipated to be minor and temporary.[135] Applicant will use dust control measures to minimize dust during Project construction.[136]

128. No significant impacts to air quality are anticipated from the Project.[137]

2. Water Quality and Resources

129. The Project avoids or spans surface waters. Applicant will use best management practices to prevent construction sediments from impacting surface waters. Thus, impacts to surface waters are anticipated to be minimal.[138]

130. No impacts to the 100-year floodplain and related development in the Project area are anticipated.[139]

131. Groundwater impacts are anticipated to be minimal. Potential impacts to groundwater could occur indirectly through surface water or directly from structure foundations. Direct impacts could occur as a result of the construction and placement of transmission line structures. Impacts to groundwater can be mitigated by measures to prevent impacts to surface waters.[140]

132. Permanent impacts to wetlands would occur where structures are located within wetland boundaries, and are estimated to be approximately 20 square feet per structure. Forested wetlands within the transmission line ROW would likely undergo a permanent change of vegetation type as a result of the Project.[141]

133. Depending on the route selected, as shown in Table 18 from the EA below, there are between approximately 17 and 36 acres of wetlands within the anticipated ROW for the Project. Wetlands along the routes evaluated are predominantly comprised of scrub-shrub and forested wetlands.[142]

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[135] Ex. 107, at 68-69 (EA).

[136] Ex. 107, at 68-69 (EA).

[137] Ex. 107, at 69 (EA).

[138] Ex. 107, at 70 (EA).

[139] Ex. 107, at 74-75 (EA).

[140] Ex. 107, at 71-72 (EA).

[141] Ex. 107, at 72 (EA).

[142] Ex. 107, at 72-73 (EA).

Table 18: NWI Wetlands within Anticipated Rights-of-Way

Cover Type		Route A	Route B	Route C	Route A/ Pipeline	Route B/ Pipeline	Route C/ Pipeline
Forested/ Scrub-Shrub	Acres	2.75	2.75	2.75	7.02	7.02	7.02
	%	16	13	16	22	19	22
Forested	Acres	0.10	0.26	0.26	4.12	4.28	4.28
	%	1	1	2	13	12	13
Scrub-Shrub Emergent	Acres	6.17	7.97	6.17	9.76	11.55	9.76
	%	37	39	36	30	32	30
Scrub-Shrub	Acres	7.21	7.28	7.28	10.96	11.03	11.03
	%	43	36	43	34	31	34
Unconsolidated Bottom	Acres	0.61	0.48	0.55	0.61	0.47	0.55
	%	4	2	3	2	1	2
Emergent	Acres	N/A	1.68	N/A	N/A	1.68	N/A
	%	N/A	8	N/A	N/A	5	N/A
Total Acres		16.86	20.41	17.01	32.48	36.03	32.63

134. The Project will require a Section 10 Permit from USACE for the crossing of the Mississippi River and a regional general permit from the USACE under Section 404 of the Clean Water Act. The USACE will likely require wetland mitigation for the conversion of forested wetlands to scrub-shrub or emergent wetlands. Applicant will restore all wetlands in accordance with agency requirements and within the requirements of Minnesota's Wetland Conservation Act.[143]

3. Flora

135. Significant impacts to flora are not anticipated as part of the Project.[144]

136. Applicant will minimize the introduction and spread of invasive species by: revegetating disturbed areas using weed-free seed mixes; using weed-free straw and hay for erosion control; removing invasive species via herbicide and manual means consistent with easement conditions and landowner restrictions.[145]

137. The primary impact of the Project on vegetation will be the removal of trees within the ROW. Depending upon the route selected, approximately 5.4 to 13.7 acres of trees

[143] Ex. 107 at 74 (EA).

[144] Ex. 107 at 76 (EA).

[145] Ex. 107 at 76-77 (EA).

would be removed. This would result in a permanent change in vegetation in these areas, replacing the trees with lower-growing species.[146]

4. Fauna

138. The Project area includes a variety of habitats including forested areas, grasslands, agricultural fields, wetlands, rivers, lakes, and streams. There is one DNR-managed WMA within the Proposed Route (the Aitkin WMA) that provides habitat for coyotes, fox, deer, bear, sandhill cranes, sharp-tail and ruffed grouse, and a variety of waterfowl, raptors and songbirds. There are no Aquatic Management Areas, Scientific and Natural Areas, or USFWS Waterfowl Production Areas within one mile of the proposed Project.[147]

139. Applicant will work with DNR and USFWS to identify areas of the Project where bird flight diverters are needed.[148]

140. Impacts to fauna are anticipated to be similar across the Proposed Route and Route Alternatives.[149] Impacts to fauna as a result of the Project are anticipated to be minimal.[150]

F. Effects on Rare and Unique Natural Resources

141. Minnesota's high voltage transmission line routing factors require consideration of the Project's effect on rare and unique natural resources.[151]

142. The Minnesota biological survey identifies two sites of biodiversity significance, both located on the west side of US Highway 169, in the Project vicinity (but not on the Project's route):

- An area of moderate biodiversity significance in Section 11 of Waukenabo Township.
- An area of high biodiversity significance, including a sedge meadow, in Section 35 of Waukenabo Township. The DNR classifies the sedge meadow as an "uncommon but not rare native plant community in Minnesota."[152]

[146] Ex. 107, at 76-77 (EA).

[147] Ex. 107, at 77-78 (EA).

[148] Ex. 107, at 79 (EA).

[149] Ex. 107, at 93 (EA).

[150] Ex. 107, at 78-79, 93 (EA).

[151] Minn. Stat. § 216E.03, Subd. 7(b)(1); Minn. R. 7850.4100(F).

[152] Ex. 107, at 79.

143. In addition to the sites of biodiversity significance, there are breeding records of rare birds (Upland Sandpiper, Yellow Rail) and two mussel species (Creek Heelsplitter and Black Sandshell) in the vicinity of the Project.[153]

144. The NLEB was listed by the USFWS as a threatened species on April 2, 2015. One NLEB roosting location has been identified within one-quarter mile of the Project and it is likely that NLEB will use additional trees in the area for roosting.[154] Impacts to the NLEB can be mitigated by conducting tree removal between October and April and avoiding tree clearing between April 1 and September 30. Applicant will coordinate with USFWS to avoid and mitigate impacts to the NLEB.[155]

145. Impacts to rare and unique species due to the Project are anticipated to be minimal, due to the location of the Project along existing road ROWs for the majority of the routes evaluated.[156]

G. Application of Various Design Considerations

146. Minnesota's high voltage transmission line routing factors require consideration of the Project's applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.[157]

147. The Project is proposed to primarily serve the proposed Enbridge Palisade Pump Station. The transmission line is sized to meet the expected load at the pump station. No further future expansions are contemplated for the Project.[158]

H. Use or Paralleling of Existing Right-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries

148. Minnesota's high voltage transmission line routing factors require consideration of the Project's use or paralleling of existing ROW, survey lines, natural division lines, and agricultural field boundaries.[159]

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[153] Ex. 107, at 79-80.

[154] Ex. 107, at 80 (EA).

[155] Ex. 107, at 82 (EA); *see also* Ex. 3 at Appendix E, USFWS Letter (Application).

[156] Ex. 107, at 80 (EA).

[157] Minn. Stat. § 216E.03, Subd. 7(a)-(b); Minn. R. 7850.1900, Subp. 2(L).

[158] *See* Ex. 107, at 97 (EA).

[159] Minn. Stat. § 216E.03, Subd. 7(b)(9); Minn. R. 7850.4100(H).

149. Using existing corridors reduces and minimizes impacts on planned future residential areas, commercial properties, and environmental and sensitive resources.[160]

150. As shown in Table 15 from the EA in the following section, all routes evaluated parallel roadways for the majority of their length (between 76 and 100 percent).[161]

I. Use of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way

151. Minnesota's high voltage transmission line routing factors require consideration of the Project's use of existing transportation, pipeline and electrical transmission system rights-of-way.[162]

152. As shown in Table 15 from the EA below, all routes evaluated parallel roadways for the majority of their length (between 76 and 100 percent). Route C and its pipeline alternative traverse the most greenfield, at approximately 22 and 24 percent of their lengths, respectively.[163]

Table 15: Route Comparison - ROW followed

ROW followed	Parallel Length (Miles)					
	Route A	Route B	Route C	Route A/ Pipeline	Route B/ Pipeline	Route C/ Pipeline
US Highway 169	12.6	11.5	12	9.6	8.5	9.0
Other Roads	0.3	2.0	1.2	0.5	2.2	1.4
Pipeline	0	0	0	3.1	3.1	3.1
Cross-Country	0	0.3	0.3	0	0.3	0.3
Total Length	12.9	13.8	13.5	13.2	14.1	13.8

J. Electrical System Reliability

153. Minnesota's high voltage transmission line routing factors require consideration of the Project's impact on electrical system reliability.[164]

154. The Project will be constructed to meet reliability requirements.[165]

[160] *See* Ex. 107, at 20-21, 23 (EA).

[161] Ex. 107, at 101 (EA).

[162] Minn. Stat. § 216E.03, Subd. 7(b)(8); Minn. R. 7850.4100(J).

[163] Ex. 107, at 58, 101 (EA).

[164] Minn. Stat. § 216E.03, Subd. 7(b)(10); Minn. R. 7850.4100(K).

[165] Ex. 107, at 21 (EA).

K. Costs of Constructing, Operating, and Maintaining the Facility

155. Minnesota's high voltage transmission line routing factors require consideration of the Project's cost of construction, operation, and maintenance.[166]

156. The estimated total cost of the Project is approximately $13 million, including permitting, land acquisition, design and construction of the breaker station and transmission line.[167] As shown in Table 30 from the EA below, estimated costs for the transmission line construction range from about $6.4 million to $7 million.[168]

Table 30 – Estimated Costs – Transmission Line[169]

	Route A	Route B	Route C	Route A/ Pipeline	Route B/ Pipeline	Route C/ Pipeline
Route Length (miles)	12.9	13.8	13.5	13.2	14.1	13.8
Construction Cost ($ million) (transmission line only)	$ 6.42	$ 6.87	$ 6.72	$ 6.57	$ 7.02	$ 6.87

157. For all of the overhead designs, operating and maintenance costs for the transmission line will be nominal for several years because the line will be new, and minimal vegetation maintenance will be required. Annual operating and maintenance costs for the 115 kV wooden transmission structures across Great River Energy's Minnesota system average approximately $2,000 per mile of transmission ROW for scheduled maintenance. The Applicant's practice provides for the inspection of 115 kV transmission lines every two years. ROW clearing practices include a combination of mechanical and hand clearing, along with herbicide application where allowed.[170]

L. Cumulative Potential Effects.

158. The EA analyzed the cumulative potential effects of the Project and the proposed Sandpiper and Line 3 Replacement projects.[171]

159. Cumulative effects are not anticipated when considering cultural values, displacement, interference, public health and safety, mining, recreation and tourism,

[166] Minn. R. 7850.4100(L).

[167] Ex. 107, at 26 (EA).

[168] Ex. 107, at 101 (EA).

[169] Ex. 107, at 25-26 (EA).

[170] Ex. 3, at 6-5 (Application).

[171] Ex. 107, at 89, 91, 93 (EA).

archaeological and historic resources, geology, groundwater, rare and unique resources.[172] If the Project is constructed along US Highway 169, cumulative effects to property values, forestry, surface water, and wildlife are also not anticipated.[173]

160. Cumulative potential effects would remain minimal when considering land use and zoning, noise, socioeconomics, roads and highways, agriculture, air quality, and soils.[174]

161. Cumulative potential effects would remain moderate when considering aesthetics, vegetation, and wetlands.[175]

M. Adverse Human and Natural Environmental Effects Which Cannot be Avoided

162. Minnesota's high voltage transmission line routing factors require consideration of the adverse human and natural environmental effects, which cannot be avoided, for each proposed route.[176]

163. Unavoidable adverse impacts include the physical impacts to the land due to the construction of the Project.[177] However, as detailed in the Application and EA, Applicant will employ mitigation measures to limit Project impacts.

N. Irreversible and Irretrievable Commitments of Resources

164. Minnesota's high voltage transmission line routing factors require consideration of the irreversible and irretrievable commitments of resources that are necessary for each proposed route.[178]

165. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of those resources have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource that cannot be replaced within a reasonable timeframe. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of action.[179]

[172] Ex. 107, at 87, 89, 90, 91, 92 (EA).

[173] Ex. 107, at 89, 91, 93 (EA).

[174] Ex. 107, at 88, 90 (EA).

[175] Ex. 107, at 88, 93 (EA).

[176] Minn. Stat. § 216E.03, Subd. 7(b)(5)-(6); Minn. R. 7850.4100(M).

[177] Ex. 107, at 94 (EA).

[178] Minn. Stat. § 216E.03, Subd. 7(b)(11); Minn. R. 7850.4100(N).

[179] Ex. 107, at 94-95 (EA).

166. The majority of the Proposed Route and Route Alternatives parallels land that has already been committed to road ROW.[180]

167. There are few commitments of resources associated with this Project that are irreversible and irretrievable, but those few resources relate primarily to construction of the Project. Only construction resources, such as concrete, steel, and hydrocarbon fuels, will be irreversibly and irretrievably committed to this Project.[181]

O. Summary of Factors Analysis

168. Route A (the Proposed Route + East Option) meets Minnesota's route selection criteria as well or better than the other alternatives considered in the EA in terms of impacts to human settlement and land based economies. Specifically, Route A is anticipated to have minimal impacts as to the following elements: recreation, electronic interference, noise, land use, property values, agriculture, and recreation and tourism.[182]

169. Route A also meets Minnesota's route selection criteria as well or better than the other alternatives considered in the EA in terms of cost.[183]

170. In addition, Route A meets Minnesota's route selection criteria as well or better than the other alternatives considered in the EA in terms of impacts on natural resources (specifically, wetlands and wildlife) use of existing ROW. Route A is entirely along existing ROW.[184]

171. As to the remaining factors, the impacts among the routes evaluated in the EA are expected to be similar and minimal.[185]

172. Based on consideration of all routing factors, Route A (the Proposed Route + East Option) is the best route for the Project.

II. NOTICE

173. Minnesota statutes and rules require Applicant to provide certain notice to the public and local governments before and during the Application for a Route Permit process.[186]

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[180] Ex. 107, at 94 (EA).

[181] Ex. 107, at 94-95 (EA).

[182] Ex. 107 at 58 (EA).

[183] Ex. 107 at 58 (EA).

[184] Ex. 107 at 58 (EA).

[185] *See* Ex. 107, at 96-101 (EA).

[186] Minn. Stat. § 216E.03, Subds. 3a, 4; Minn. R. 7850.2100, Subps. 2, 4.

174. Applicant provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.[187]

175. Minnesota statutes and rules also require EERA and the Commission to provide certain notice to the public throughout the Route Permit process.[188] EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.[189]

III. COMPLETENESS OF EA

176. The EA process is the alternative environmental review approved by the Environmental Quality Board ("EQB") for high voltage transmission lines.[190] The Commission is required to determine the completeness of the EA.[191] An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.[192]

177. The evidence on the record demonstrates that the EA is adequate because the EA and the record created at the public hearing and during the subsequent comment period address the issues and alternatives raised in the Scoping Decision.[193]

Based on the foregoing Findings of Fact and the record in this proceeding, the Commission makes the following:

CONCLUSIONS

1. The Commission has jurisdiction to consider the Application.

2. The Commission determined that the Application was substantially complete and accepted the Application on October 19, 2015.[194]

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[187] Ex. 4 (Notice of Route Permit Application); Ex. 7 (Newspaper Affidavits for Information and Scoping Meeting), Affidavit of Publication for Notice of Public Meeting (May 6, 2016), eDockets Document No. 20165-121140-01.

[188] Minn. Stat. § 216E.03, Subd. 6; Minn. R. 7850.2300, Subp. 2; Minn. R. 7850.2500, Subps. 2, 7-9.

[189] Ex. 104 (EA Scoping Decision); Ex. 105 (Notice of EA); Ex. 106 (Letters Notifying Landowners of Additional Routes Under Consideration); Ex. 107 (EA); Ex. 108 (Notice of Availability of EA); Ex. 109 (Notice in *EQB Monitor* of Availability of EA); Notice of Comment Period on Application Completeness (Sep. 14, 2015), eDockets Document No. 20159-113971-01; Notice of Commission Meeting (Sep. 18, 2015), eDockets Document No. 20159-113971-01; Notice of Public Information and Scoping Meeting (Oct. 7, 2015), eDockets Document No. 201510-114655-01; Notice of Commission Meeting (Dec. 4, 2015), eDockets Document No. 201512-116183-02; Notice of Public Hearing (Apr. 22, 2016).

[190] Minn. R. 4410.4400, Subp. 6.

[191] Minn. R. 7850.3900, Subp. 2.

[192] *Id.*

[193] *See* Ex. 104 (EA Scoping Decision); Ex. 107 (EA).

3. EERA has conducted an appropriate environmental analysis of the Project for purposes of this Route Permit proceeding and the EA satisfies Minnesota Rule 7850.3700. Specifically, the EA and the record address the issues and alternatives identified in the Scoping Decision to a reasonable extent considering the availability of information, and the EA includes the items required by Minnesota Rule 7850.3700, Subpart 4, and was prepared in compliance with the procedures in Minnesota Rule 7850.3700.

4. Applicant gave notice as required by Minnesota Statutes Section 216E.04, Subdivision 4; Minnesota Rule 7850.2100, Subpart 2; Minnesota Rule 7850.2100, Subpart. 4.

5. Notice was provided as required by Minnesota Statutes Section 216E.04, Subdivision 6; Minnesota Rule 7850.3500, Subpart 1; Minnesota Rule 7850.3700, Subparts 2, 3, and 6; and Minnesota Rule 7850.3800.

6. A public hearing was conducted near the Project area. Proper notice of the public hearing was provided, and the public was given the opportunity to speak at the hearing and to submit written comments. All procedural requirements for the Route Permit were met.

7. The evidence on the record demonstrates that the Proposed Route + East Option (Route A) satisfies the Route Permit factors set forth in Minnesota Statutes Section 216E.04, Subdivision 8 (referencing Minnesota Statutes Section 216E.03, Subdivision 7) and Minnesota Rule 7850.4100.

8. There is no feasible and prudent alternative to the construction of the Project, and the Project is consistent with and reasonably required for the promotion of public health and welfare in light of the state's concern for the protection of its air, water, land, and other natural resources as expressed in the Minnesota Environmental Rights Act.[195]

9. The evidence on the record demonstrates that the Proposed Route + East Option (Route A) is the best route for the Project.

10. The evidence on the record demonstrates that the general Route Permit conditions are appropriate for the Project.

11. A special Route Permit condition requiring the Permittee to coordinate with DNR regarding avian mitigation and vegetation management is appropriate.

12. A special Route Permit condition requiring the Permittee to use wildlife-friendly erosion control near water crossings, Minnesota Biological Survey Sites of Biodiversity Significance, and areas with rare species susceptible to entanglement in erosion control mesh is appropriate.

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[194] Order Finding Application Complete, Granting Variance, and Referring Application to the Office of Administrative Hearings (Oct. 19, 2015), eDockets Document No. 201510-114930-01.

[195] Minn. Stat. § 116B.01.

13. A special Route Permit condition requiring the Permittee to coordinate with USFWS regarding impacts to the NLEB is appropriate.

14. Any of the foregoing Findings more properly designated Conclusions are hereby adopted as such.

Exhibit A Route Alternatives Evaluated in the EA

Figure 7: Route Alternatives