

May 6, 2016

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
127 Seventh Place East, Suite 350
Saint Paul, MN 55101-2147

RE: Comments and Recommendations
Bull Moose 115 kV Transmission Line Project
Docket No. ET2/TL-15-628

Dear Mr. Wolf:

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

In the Matter of the Application of Great River Energy for a Route Permit for the Bull Moose 115 kV Transmission Line in Cass County, Minnesota

The attached comments and recommendations address corrections to the environmental assessment, public comments received on the environmental assessment, the proposed findings of fact and conclusions of law, the applicant's suggested permit revisions, and staff recommended permit revisions.

Staff is available to answer any questions the Commission might have.

Sincerely,

Andrew Levi
Environmental Review Specialist
Energy Environmental Review and Analysis

cc: Cezar Panait, Minnesota Public Utilities Commission
Carole Schmidt, Great River Energy
John Wachtler, Department of Commerce

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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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

DOCKET No. ET2/TL-15-628

Date: May 6, 2016

Staff: Andrew Levi 651-539-1840

In the Matter of the Application of Great River Energy for a Route Permit for the Bull Moose 115 kV Transmission Line in Cass County, Minnesota

Issues Addressed: These comments and recommendations address corrections to the environmental assessment, public comments received on the environmental assessment, the proposed findings of fact and conclusions of law, the applicant’s suggested permit revisions, and staff recommended permit revisions.

Additional documents and information can be found on the EERA website at <http://mn.gov/commerce/energyfacilities/Docket.html?Id=34235> or the Minnesota eDockets website at <https://www.edockets.state.mn.us/EFiling/search.jsp> by selecting “15” for year and “628” for number.

This document can be made available in alternative formats, that is, large print or audio, by calling 651-539-1530.

Background

On March 30, 2016, Administrative Law Judge James Mortenson presided over a public hearing on behalf of the Minnesota Public Utilities Commission (Commission) for the Bull Moose 115 kV Transmission Line Project (Project) proposed by Great River Energy (applicant).¹ Interested persons were afforded the opportunity to provide verbal comments at the public hearing and written comments through April 13, 2016.² No person provided

¹ Minnesota Public Utilities Commission (March 9, 2016) *Notice of Public Hearing*, eDockets No. 20163-119327-01 (hereinafter “Public Notice”).

² Public Notice

verbal comments at the hearing.³ The Minnesota Department of Natural Resources (DNR)⁴ and the Minnesota Pollution Control Agency (MPCA)⁵ provided written comments.

On April 22, 2016, the applicant provided proposed findings of fact and conclusions of law for the Project.⁶ The applicant also filed comments recommending revisions to the generic route permit template for the Project.⁷

Environmental Assessment Errata

Staff notes the following correction to the EA:

Page 13-14, Other Permits and Approvals, State. Should a Clean Water Act Section 404 Permit be required from the U.S. Army Corps of Engineers, a MPCA Clean Water Act Section 401 Water Quality Certification or waiver must also be obtained. As a result, the following paragraph should be inserted after the last paragraph on page 13.

Should a Clean Water Act Section 404 Permit be required from the U.S. Army Corps of Engineers, a MPCA Clean Water Act Section 401 Water Quality Certification or waiver must also be obtained. This permit ensures that activities comply with state water quality standards. Any Section 401 permit conditions are incorporated into the Section 404 Permit.

Page 101, Wetlands, second paragraph. This paragraph indicates that cumulative potential effects to wetlands along the proposed route are anticipated to remain moderate. Potential impacts to wetlands as a result of the proposed project along the proposed route are anticipated to be minimal; therefore, cumulative potential effects will remain minimal. This is consistent with *Table 22 Effects on Natural Resources* on page 109.

~~*Cumulative potential effects along the proposed route are anticipated to remain moderate. Cumulative potential effects are anticipated to remain minimal along the proposed and alternative route segments.*~~

Response to Comments on the Environmental Assessment

Written comments were received from MPCA and DNR. No verbal comments were received at the public hearing.

³ Shaddix & Associates (April 12, 2016) *March 30, 2016 Public Hearing 15-628*, eDockets No. 20164-119954-01.

⁴ Minnesota Department of Natural Resources (April 11, 2016) *Comments*, eDockets No. 20164-119912-01.

⁵ Minnesota Pollution Control Agency (April 11, 2016(a)) *Public Comments*, eDockets No. 20164-119918-01.

⁶ Great River Energy (April 22, 2016) *Proposed Findings of Fact and Conclusions of Law*, eDockets No. 20164-120525-01.

⁷ Great River Energy (April 22, 2016(b)) *Comments Route Permit Template*, eDockets No. 20164-120524-01

Minnesota Pollution Control Agency

MPCA Comment 1

MPCA clarified that if a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers is required, a MPCA CWS Section 401 Water Quality Certification or waiver must be obtained. MPCA indicated that any conditions of the Section 401 Water Quality Certification are incorporated into the Section 404 permit.

Response

The EA has been revised, as described above, to reflect this clarification.

Minnesota Department of Natural Resources

DNR Comment 1

DNR stated that recent surveys for the little brown bat and Northern long-eared bat in the project area indicate that roost trees exist within the vicinity of the proposed project. DNR requests the applicant request the most recent National Heritage Information System (NHIS) data prior to construction. DNR further recommends the route permit include a stipulation that all tree clearing occur during winter months.

Response

Staff agrees with the recommendation that tree clearing occur during winter months. Staff incorporated this comment as a proposed special permit condition.

DNR Comment 2

DNR indicated that the EA does not distinguish impacts to forestry operations, including timber harvest, between the proposed route and the alternative route. DNR requests clarification.

Response

The EA provides information regarding affected acres of deciduous forest cover types along the three routing options. Page 67 states *“clearing of the [right-of-way (ROW)] of tall-growing woody vegetation will impact approximately six and three-quarter acres of deciduous forest cover types along the proposed route; two and one-half acres of deciduous forested cover types along the proposed route segment; and one and one-half acres of deciduous forested cover types along the alternative route segment.”*

Comments on Proposed Findings and Conclusions

The following comments summarize our suggested edits to the applicant’s proposed findings. These comments are numbered according to our proposed findings (attached) unless otherwise indicated.

Terminology

The EA evaluated the impacts of the DNR's proposed Alternative Route Segment A by dividing the applicant's original route into two segments: the "Proposed Route Segment" and the "Proposed Route" (the longer portion not affected by Alternative Segment A). That way, the impacts of Alternative Route Segment A and the applicant's Proposed Route Segment could be directly compared. However, in its proposed findings the applicant also refers to the Complete Proposed Route that consists of the "Proposed Route" and their Proposed Route Segment. This approach introduces terminology not used in the EA. At times, this approach masks the potential impacts differences between Alternative Route Segment A and the Proposed Route Segment.⁸ Therefore, staff has clarified these terms throughout the findings.

Page Specific Comments

Page 1, Statement of Issue. Addition clarifies that the Commission must also determine if the EA prepared for the project and the record developed at the public hearing address the issues identified in the scoping decision.

Page 4, Finding 22, Commission Consideration of Alternatives. Edit clarifies that the Commission took no action regarding the inclusion or removal of route or route segment alternatives.

Page 4, Finding 24, Scoping Decision. Edit clarifies the Scoping Decision was issued by a person.

Page 5, Finding 32, DNR Public Hearing Comments. Edit clarifies and expands the discussion of DNR's comments. Also removes a statement that DNR "continued" to view Alternative Route Segment A as the best route for the Project. DNR did not express a preference during the scoping process regarding Alternative Route Segment A, but only that the alternative be studied.

Page 5, Section 3, Need Overview. Move avoids editorial edits to the "Description of Project" and "Need Overview Section."

Page 6, Finding 34, Project Description. Edit clarifies that the Backus Substation is associated with the Line 3 Project.

Page 6, Finding 35, H-frame Structures. Edit clarifies that H-frame structures would be used for longer than typical spans, which would be necessary if Alternative Route Segment A is selected by the Commission.

⁸ See, for example, Applicant Proposed Finding 74 stating the Complete Proposed Route parallels the DC Line for nearly its entire length. While accurate, this statement does not acknowledge that the Proposed Route Segment does not parallel the DC Line.

Page 7, Finding 42, Alternative Route Segment A. Edit clarifies that DNR is the landowner, and focuses the finding on the alternative as opposed to the reasons for the Applicant's proposed route.

Page 8, Finding 43, Alternative Description. Edit discusses the terminology used for analyzing the routing options in the EA.

Page 8, Finding 46, Switch Structure. Edit clarifies that the 142 Line might need to be changed out to grade the existing line underneath the DC Line should Alternative Route Segment A be selected by the Commission.

Page 8, Finding 47, Phase Wires. Edit clarifies that a larger wire might be used if Alternative Route Segment A is selected.

Page 9, Findings 51 and 52, Project Costs. Edit indicates Project costs should Alternative Route Segment A be selected. Also, provides background regarding Alternative Route Segment A costs in relation to the anticipated estimation error used for the Project.

Page 10, Findings 55 and 56. Edit reduces redundancy. If text is desired, recommend using edited descriptions from the attached document.

Page 11, Finding 57, MnDOT Aeronautics. Edit clarifies that MnDOT did not make an official determination, but rather responded in an email. Proposed language is consistent with Finding 86 as drafted by the applicant. Remove discussion of DNR comments as redundant.

Page 15, Section I and Footnote 79. See general comment above.

Page 16, Finding 72, Noise Standards. Edit clarifies that while impacts are anticipated to be within state noise standards, noise impacts will still occur.

Page 16, Section 3, Aesthetics. Edits differentiate between impacts for all routing options, as opposed to the Complete Proposed Route and Alternative Route Segment A.

Page 19, Finding 90, Emergency Vehicles. Edit clarifies that potential impacts to emergency services are anticipated to be minimal during project construction.

Page 20, Finding 101, Epidemiological Studies. Edit replaces information previously not provided in the record (unlike Proposed Finding 100 where the source is footnoted in the Application). Suggested language taken from page 55 of the EA provides similar information.

Page 21, Applicant's Finding 104, Forestry Impacts. Deleted as redundant. Forestry impacts are provided in greater granularity in Finding 111.

Page 25-26, Section 2, Water Resources. Edits clarify potential impacts and mitigation measures to water resources.

Page 26, Finding 138, Wildlife Impacts. Edit clarifies that although potential impacts are anticipated to be minimal across all routing options with the use of mitigation measures (bird diverters), the likelihood for avian collisions is greater for Alternative Route Segment A. This impact remains minimal.

Page 26, Finding 139, Wildlife Mitigation. Edit discusses mitigation measures in greater detail.

Page 27, Finding 141, Wildlife Habitat. Edit identifies potential impacts to wildlife habitat for all routing options.

Page 27-28, Finding 144 and Applicant's Finding 138, Northern Mesic Hardwood Forest. Deletion removes discussion of the Northern Mesic Hardwood Forest from the Rare and Unique Resources section for consistency with the EA. Edits to Footnote 170 further clarify that impacts to this uncommon native plant community are discussed under Factor F.

Page 29, Findings 151 and 153, Rights-of-Way. Edit clarifies that Alternative Route Segment A follows existing right-of-way for the majority of its length.

Page 33, Finding 175. Edit ensures finding is written as a finding and not a conclusion, and in a manner that supports Alternative Route Segment A and the Proposed Route as the best route for the Project.

Page 34, Conclusion 7. Edit illustrates that the Proposed Route and Alternative Route Segment A satisfies the routing factors.

Page 35, Conclusion 8. Edit changes the best route from the Complete Route to the Proposed Route and Alternative Route Segment A.

Page 35, Conclusion 9-12, Special Route Permit Conditions. Additions recommend special permit conditions for the Project. An explanation of the need for these conditions is discussed in the following section.

Staff Recommendations

Staff agrees with DNR that Alternative Route Segment A (in combination with the Proposed Route) is the least damaging alternative. As pointed out by the DNR comments, in comparison to Alternative Route Segment A, the applicant's Proposed Route Segment:

- Divides a Northern Mesic Hardwood forest community;
- Follows less existing transmission line right-of-way than the alternative, creating a new greenfield opening through a state forest, increasing impacts to forest wildlife habitat; and
- Impacts a wetland by surrounding it on all sides with powerlines.

Lastly, although Alternative Route Segment A is estimated to cost 7% more than the applicant's Proposed Route Segment, the additional cost is within the 10% overall cost estimation margin of error. Therefore, depending upon final design, selection of Alternative Route Segment A may or may not result in a higher total cost than the current estimate.

Comments on Proposed Route Permit Conditions

EERA staff has no comments regarding the applicant's proposed modifications to the route permit template. Staff does, however, have the following recommendations for special permit conditions as indicated.

Wildlife-Friendly Erosion Control

The DNR encourages use of wildlife-friendly erosion control measures on all lands across Minnesota. Staff assumes DNR would require its use as a permit stipulation to the License to Cross Public Lands and Waters. As such, we recommend the route permit also require the use of wildlife-friendly erosion control on DNR-administered lands. For consistency, the Commission may consider requiring use of wildlife-friendly erosion throughout the Project in coordination with DNR.

Consistent Pole Placement

The EA recommends using a consistent pole placement along the Proposed Route to reduce aesthetic impacts. The applicant did not provide any comment regarding use of this type of mitigation. Staff recommends a consistent pole placement be required to create a more harmonious view on the landscape provided such pole placement is technically feasible and does not cause unnecessary wetland impacts.

Coordination

As a part of its comments, DNR indicated that maternity roost trees for the Northern long-eared bat have been identified in the project area. Staff recommends a permit stipulation requiring the applicant to obtain an updated list of known maternity roosts prior to project construction. Based on a review of this information, should impacts to roosting trees be anticipated, the applicant should contact the U.S. Fish and Wildlife Service to obtain any necessary permits.

Winter Tree Clearing

As a part of its comments, DNR indicated that maternity roost trees for the Northern long-eared bat have been identified in the project area. Because it is unlikely that all maternity roost trees in the project area have been identified, staff recommends tree removal only occur between October and March to avoid potential impacts to Northern long-eared bats.

* * * * *

Attachment A
EERA Edited Findings of Fact and Conclusions of Law

**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 THE BULL MOOSE 115 KV TRANSMISSION
LINE IN CASS COUNTY, MINNESOTA

PUC Docket No. ET2/TL-15-628
OAH Docket No. 5-2500-33286

GREAT RIVER ENERGY'S
PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW

TABLE OF CONTENTS

	<u>Page</u>
STATEMENT OF ISSUE.....	1
SUMMARY	1
FINDINGS OF FACT.....	2
I. APPLICANT.....	2
II. PROCEDURAL HISTORY.....	2
III. NEED OVERVIEW.....	5
IV. DESCRIPTION OF THE PROJECT.....	6
V. ROUTES EVALUATED.....	6
A. Route Proposed by Applicant	6
B. Route Segment Proposed Through Public Participation.....	7
VI. TRANSMISSION LINE STRUCTURE TYPES AND SPANS	8
VII. TRANSMISSION LINE CONDUCTORS.....	8
VIII. TRANSMISSION LINE ROUTE WIDTHS	9
IX. TRANSMISSION LINE RIGHT-OF-WAY	9
X. PROJECT SCHEDULE.....	9
XI. PROJECT COSTS	9
XII. PERMITTEE.....	9
XIII. PUBLIC AND LOCAL GOVERNMENT PARTICIPATION	10
A. Public Comments	10
B. Local Government and State Agency Participation.....	10
FACTORS FOR A ROUTE PERMIT	12
APPLICATION OF STATUTORY AND RULE FACTORS	15
I. APPLICATION OF ROUTING FACTORS TO THE DIFFERENT ROUTING OPTIONS	15
A. Effects on Human Settlement	15
B. Effects on Public Health and Safety	19
C. Effects on Land-Based Economies and Direct and Indirect Economic Impacts.....	21
D. Effects on Archeological and Historic Resources	24
E. Effects on Natural Environment	24
F. Effects on Rare and Unique Natural Resources.....	27
G. Application of Various Design Considerations	28
H. Use or Paralleling of Existing Right-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries	28
I. Use of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way	29
J. Electrical System Reliability.....	29
K. Costs of Constructing, Operating, and Maintaining the Facility	30
L. Cumulative Potential Effects	30

TABLE OF CONTENTS
(continued)

	<u>Page</u>
M. Adverse Human and Natural Environmental Effects Which Cannot be Avoided	31
N. Irreversible and Irretrievable Commitments of Resources	31
O. Summary of Factors Analysis	32
II. NOTICE	33
III. COMPLETENESS OF EA	34
CONCLUSIONS.....	34

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

IN THE MATTER OF THE APPLICATION OF
GREAT RIVER ENERGY FOR A ROUTE PERMIT
FOR THE BULL MOOSE 115 KV TRANSMISSION
LINE IN CASS COUNTY, MINNESOTA

PUC DOCKET NO. ET2/TL-15-628
OAH DOCKET NO. 5-2500-33286

GREAT RIVER ENERGY'S PROPOSED
FINDINGS OF FACT AND
CONCLUSIONS OF LAW

A public hearing was held before Administrative Law Judge ("ALJ") James Mortenson on March 30, 2016 at the Backus City Hall in Backus, Minnesota.

Dan Leshner, Senior Field Representative; Carole Schmidt, Supervisor, Transmission Permitting and Compliance; Chuck Lukkarila, Project Manager; and Troy Paumen, Fixed Asset Data Specialist appeared on behalf of Great River Energy, 12300 Elm Creek Boulevard, Maple Grove, MN 55369 ("Applicant").

Andrew Levi, Environmental Review Specialist, and Larry Hartman, Environmental Review Manager, ~~85 7th Place East~~~~445 Minnesota Street~~, Suite ~~1500~~, St. Paul, MN 55101 appeared on behalf of the Department of Commerce, Energy Environmental Review and Analysis ("EERA").

Cezar Panait, 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 Backus, Minnesota in Cass County (the "Project")?

Does the Environmental Assessment ("EA") prepared under Minnesota Rules 7850.3700 and the record created at the public hearing address the issues identified in the scoping decision?

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. Applicant is a not-for-profit generation and transmission cooperative based in Maple Grove, Minnesota. Great River Energy provides electrical energy and related services to 28 member cooperatives, including Crow Wing Power, the distribution cooperative serving the area to be served by the proposed Project. Applicant'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 June 29, 2015, Applicant filed with the Commission a Notice of Intent to File a Route Permit Application under the Alternative Permitting Process.² Applicant had previously discussed the Project with the local government unit (Cass County).³

3. On August 7, 2015, Applicant submitted an Application for a Route Permit ("Application") for the Project.⁴

4. On August 12, 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.⁵

5. On August 13, 2015, the Commission issued a Notice of Comment Period on Application Completeness.⁶

6. On August 27, 2015, EERA staff filed its comments and recommendations regarding the completeness of the Application and recommended the Application be found complete.⁷

7. On September 1, 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 4.⁸

8. On September 4, 2015, the Commission issued a Notice of Meeting on Application Completeness for September 17, 2015.⁹

¹ Ex. 3 at 1-1 (Application).

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

³ Meeting with Cass County on February 27, 2015.

⁴ Ex. 3 (Application).

⁵ Ex. 4 (Notice of Route Permit Application).

⁶ Ex. 20 (Notice of Comment Period on Route Permit Application).

⁷ Ex. 7 (Comments and Recommendations to Commission on Route Permit Application Completeness).

⁸ Ex. 5 (Confirmation of Notice of Route Permit Application).

9. On September 9, 2015, Commission staff filed Briefing Papers recommending the Commission find the Application complete.¹⁰

10. On September 17, 2015, the Commission met and found the Application complete.¹¹

11. On September 18, 2015, the Commission and EERA issued a Notice of Public Information and EA Scoping Meeting.¹² This notice was also published in the *Pilot Independent* on September 30, 2015, and the *Echo Journal* on October 1, 2015, as required under Minnesota Statutes Sections 216E.03, Subdivision 4 and 216E.04, Subdivision 4; and Minnesota Rule 7850.2100, Subpart 2.¹³

12. On October 12, 2015, the Commission and EERA held a Public Information and EA Scoping Meeting at the Backus City Hall in Backus, Minnesota at 6:00 p.m.¹⁴

13. On October 13, 2015, the Commission issued its Order Finding Application Complete, Directing Use of Summary Report Review Process, and Granting Variance.¹⁵

14. On October 14, 2015, Applicant filed the newspaper affidavits of publication for the October 12, 2015 Information and EA Scoping Meeting.¹⁶

15. On October 26, 2015, the scoping comment period ended.¹⁷

16. On October 26, 2015, the Minnesota Department of Transportation (“MnDOT”) filed a comment indicating that, although the proposed Project does not directly abut a state trunk highway, MnDOT would like to be made aware of any changes to the proposed Project that may make the Project area close enough to occupy a portion of current MnDOT right-of-way (“ROW”).¹⁸

17. On October 26, 2015, the Minnesota Department of Natural Resources (“DNR”) filed a comment.¹⁹ DNR indicated that a cumulative impacts analysis of this Project and the

⁹ Ex. 21 (Notice of Commission Meeting).

¹⁰ Ex. 22 (Commission Staff Briefing Papers on the Completeness of the Route Permit Application).

¹¹ Ex. 25 (Commission Order Finding Application Complete, Directing Use of the Summary Report Review Process and Granting Variance).

¹² Ex. 23 (Notice of Public Information and Environmental Assessment Scoping Meeting).

¹³ Ex. 6 (Newspaper Affidavits for Information and Scoping Meeting).

¹⁴ Ex. 23 (Notice of Public Information and Environmental Assessment Scoping Meeting).

¹⁵ Ex. 25 (Commission Order Finding Application Complete, Directing Use of the Summary Report Review Process and Granting Variance).

¹⁶ Ex. 6 (Newspaper Affidavits for Information and Scoping Meeting).

¹⁷ Ex. 23 (Notice of Public Information and Environmental Assessment Scoping Meeting).

¹⁸ MnDOT Comments (Oct. 26, 2015), eDockets Document No. 201510-115093-01.

¹⁹ DNR Comments (Oct. 26, 2015), eDockets Document No. 201510-115104-01.

Sandpiper and Line 3 Replacement Pipeline projects should be included in the environmental review. The DNR also suggested that an alternative route segment ~~should~~ be analyzed that follows existing lines across a wetland/pond complex on the west end of the Project. DNR further ~~stated~~ the EA should include methods to reduce risks to birds, discuss pole placement in and around wetlands, and ~~should~~ discuss proposed maintenance methods, including a discussion of the wire zone/border zone method.

18. On October 27, 2015, Commission staff filed the summary of public comments. No comments were filed.²⁰

19. On November 4, 2015, EERA issued comments and recommendations on the EA Scoping Process and Alternative Routes to the Commission.²¹ EERA recommended that one alternative route segment (known as Alternative Route Segment A) be included in the EA.

20. On November 20, 2015, the Commission issued a Notice of Commission Meeting noting that it would consider what action it should take in regard to route alternatives to be evaluated in the EA.²²

21. On November 24, 2015, Commission staff issued Briefing Papers on the EA scoping process and alternative routes for the December 3, 2015 Commission Meeting.²³

~~21-22.~~ On December 3, 2015, the Commission met and took no action on route alternatives.²⁴

~~22-23.~~ On December 10, 2015, the Commission issued its Order Approving Issuance of Generic Route Permit Template and Delegating Authority.²⁵

~~23-24.~~ On December 14, 2015, the Deputy Commissioner of the Department of Commerce issued ~~its-an~~ EA Scoping Decision.²⁶

~~24-25.~~ On March 3, 2016, EERA issued the EA for the Project and its Notice of Availability of the EA.²⁷

~~25-26.~~ On March 8, 2016, EERA filed the certificate of service for mailing of the EA to public agencies.²⁸

²⁰ Ex. 26 (Public Comments).

²¹ Ex. 9 (Comments and Recommendations to Commission on Scoping Process and Route Alternatives).

²² Ex. 28 (Notice of Commission Meeting on Route Alternatives).

²³ Ex. 29 (Commission Staff Briefing Papers on the Route Alternatives Decision).

²⁴ Ex. 31 (Commission Order Approving Issuance of Generic Route Permit Template and Delegating Authority).

²⁵ Ex. 31 (Commission Order Approving Issuance of Generic Route Permit Template and Delegating Authority).

²⁶ Ex. 11 (EA Scoping Decision).

²⁷ Ex. 12 (EA); Ex. 13 (Notice of EA Availability).

²⁸ Ex. 14 (Certificate of Service for EA to Public Agency Representatives).

~~26-27.~~ On March 9, 2016, the Commission issued the Notice for the Public Hearing to be held March 30, 2016 at the Backus City Hall at 6:00 p.m.²⁹ The notice further provided that the Commission would accept public comments on the Project through April 13, 2016, at 4:30 p.m.

~~27-28.~~ On March 30, 2016, the ALJ held a Public Hearing at the Backus City Hall in Backus, Minnesota at 6:00 p.m.³⁰

~~28-29.~~ On April 12, 2016, Applicant filed affidavits of publication of the Notice of Public Hearings, confirming that notice for the March 30, 2016 public hearing was published in the *Pilot Independent* on March 23, 2016, and the *Echo Journal* on March 24, 2016.³¹

30. On April 13, 2016, the public hearing comment period ended.³² No comments from members of the public were received,³³ and ~~two~~ two state agencies submitted comments: ~~DNR and~~ Minnesota Pollution Control Agency (“MPCA”) and DNR.

31. MPCA indicated that, if a Clean Water Act (“CWA”) Section 404 Permit is required, an MPCA CWA Section 401 Water Quality Certification of waiver must be obtained.³⁴

~~29-32.~~ DNR stated Alternative Route Segment A as the least damaging alternative as it decreases the amount of productive forest land that will be lost (greenfields crossing), decreases the potential impacts of surrounding a wetland on all side with powerlines, increases the area following existing right-of-way, and decreases the impacts to wildlife from loss of forest habitat. indicated that the EA incorporated DNR’s prior comments and that the DNR continued to view Alternative Route Segment A as the best route for the Project.—In addition, DNR noted that several new records for the little brown myotis and the Northern Long-Eared Bat (“NLEB”) have been entered into the National Heritage Information System (“NHIS”) database in the vicinity of the Project. DNR recommended asking NHIS staff for an updated list of known maternity roosts prior to construction and, if impacts to roosting trees may take place, both U.S. Fish and Wildlife Service (“USFWS”) and DNR should be contacted and appropriate permits obtained. DNR further recommended that the route permit include a condition that any tree removal be conducted during the winter months.³⁵

III. NEED OVERVIEW

33. The purpose of the Project is to provide electric service to the proposed new Backus crude oil pump station (the “Backus Pump Station”) that is associated with the Line 3

²⁹ Ex. 33 (Public Hearing Notice).

³⁰ Ex. 33 (Notice of Public Hearing).

³¹ Compliance Filing (Apr. 12, 2016), eDockets Document No. 20164-119969-01.

³² Ex. 33 (Notice of Public Hearing).

³³ Public Comment (Apr. 15, 2016), eDockets Document No. 20164-120143-01.

³⁴ MPCA Comments (Apr. 11, 2016), eDockets Document No. 20164-119918-01

³⁵ DNR Comments (Apr. 11, 2016), eDockets Document No. 20164-119912-01.

Replacement Project proposed by Enbridge Energy, Limited Partnership (“Enbridge”). Construction of the Project is dependent upon the approval of the Line 3 Replacement Project.³⁶

III.IV. DESCRIPTION OF THE PROJECT

~~30.34.~~ The Project includes construction of approximately 2.5 miles of new overhead 115 kV transmission line in Cass County, Minnesota from the existing Minnesota Power Badoura to Pine River “#142” 115 kV electric transmission line (“142 Line”) to a proposed substation (“Backus Substation”) associated with the Backus Pump Station. The Project will interconnect with the 142 Line and travel northeast cross-country for approximately one-quarter mile towards an existing Minnesota Power ±250 kV direct current (“DC”) transmission line (“DC Line”) ROW, and then parallel immediately adjacent to the south side of the DC Line ROW east approximately two and one-quarter miles. From this point, the Project will turn north and cross under the DC Line to interconnect to the Backus Substation.³⁷

~~31.35.~~ Applicant proposes to use single-pole wood structures with horizontal post insulators for most of the transmission line. H-frame, 3-pole structures, laminated wood poles or steel poles may be required in some locations (to cross under an existing line, for angles poles, for longer than typical spans, or in areas where soil conditions are poor and guying is not practical). Typical pole heights will range from 70 to 80 feet above ground and spans between poles will range from 350 to 400 feet.³⁸

~~32.36.~~ Applicant requests approval of a 200-foot route width for the transmission line and a wider route width (400 feet) in the vicinity of the Backus pPump sStation to accommodate routing the line into the Backus sSubstation associated with the Backus pPump sStation.³⁹

~~33.37.~~ Applicant proposes a ROW of 100 feet in width for the Project, with a wider route width in select locations to accommodate transmission line guy wires and anchors.⁴⁰

~~IV.I. NEED OVERVIEW~~

~~34.1.~~ The purpose of the Project is to provide electric service to the proposed new Backus crude oil pump station (the “Backus Pump Station”) that is associated with the Line 3 Replacement Project proposed by Enbridge Energy, Limited Partnership (“Enbridge”). Construction of the Project is dependent upon the approval of the Line 3 Replacement Project.⁴¹

V. ROUTES EVALUATED

A. Route Proposed by Applicant

³⁶ Ex. 12 at 3 (EA).

³⁷ Ex. 12 at 3 (EA).

³⁸ Ex. 12 at 20 (EA).

³⁹ Ex. ~~312~~ at 1-3 (ApplicationEA).

⁴⁰ Ex. 12 at 3 (EA).

⁴¹ ~~Ex. 12 at 3 (EA).~~

~~35.38.~~ Applicant's proposed route is approximately 2.5 miles long and is located in Cass County near the city of Backus in Bull Moose Township (the "Applicant's Proposed Route").⁴² Routing of the Project is constrained by existing infrastructure and the proposed location of the Backus Pump Station.

~~36.39.~~ The proposed transmission line will interconnect with the 142 Line and then head travel northeast cross country for about 0.25 mile to the existing ±250 kV DC transmission line owned by Minnesota Power. The line will then head east paralleling the DC line (on the south side, immediately adjacent to but not overlapping the DC Line ROW) for approximately 2.25 miles. The line will then cross under the DC Line and terminate at the Backus Substation (located just west of 48th Ave. SW).⁴³

~~37.40.~~ The Applicant identified and analyzed one alternative that followed a more southerly route between the Backus Substation and the 142 Line. This alternative was rejected because it would:

- Be longer than the Applicant's Proposed Route (3.75 miles vs. 2.5 miles), would result in more impacts to human settlement (it would affect 7 residences within 250 feet of the centerline vs. 0 residences within 250 feet of centerline for the proposed route);
- Require more angle structures (~~many~~ more turns);
- Not parallel an existing transmission line ROW; and
- Be more costly (approximately \$2.5 million vs. \$2.1 million).⁴⁴

B. Route Segment Proposed Through Public Participation.

~~38.41.~~ One alternative route segment on the western end of the Project area was introduced during scoping and included in the EA Scoping Decision:⁴⁵

1. Alternative Route Segment A

~~39.42.~~ Alternative Route Segment A was proposed by the DNR. DNR is the landowner. Alternative Route Segment A ~~It~~ would follow existing electric transmission infrastructure for its entire length by eliminating the approximately one-quarter mile cross-country portion of the Proposed Route. ~~Although this alternative crosses a wetland/pond complex that the Applicant sought to avoid, the~~ DNR indicated ~~s~~ this alternative would keep ~~that a~~ wetland/pond complex

⁴² Ex. 12 at 3 (EA).

⁴³ Ex. 3 at 1-1 (Application).

⁴⁴ Ex. 3 at 5-1 (Application).

⁴⁵ Ex. 11 (EA Scoping Decision).

from being surrounded within a triangle of utility lines, ~~and Alternative Route Segment A~~ would reduce impacts to a Northern Mesic Hardwood Forest by about four acres.⁴⁶

40.43. The Applicant's Proposed Route and Alternative Route Segment A were evaluated in the EA.⁴⁷ Evaluation of Alternative Route Segment A functionally divided the Applicant's Proposed Route into two distinct segments: the portion that could potentially be replaced by Alternative Route Segment A (Proposed Route Segment) and the portion unaffected by Alternative Route Segment A (Proposed Route).⁴⁸ A map of the routing options Proposed Route and Alternative Route Segment A is provided in **Exhibit A**.

VI. TRANSMISSION LINE STRUCTURE TYPES AND SPANS

41.44. Applicant proposes ~~to use~~ overhead construction with using primarily 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.⁴⁹

42.45. H-frame wood or steel structures may be used in areas where longer spans are required to avoid or minimize impacts to wetlands, waterbodies or waterways, or to cross underneath the DC Line.⁵⁰

43.46. A laminated wood switch structure will be installed approximately 2.5 miles west of the Backus Substation, where the ~~new 115 kV transmission line~~ Project will interconnect with the 142 Line. The switch structure will be installed on the same alignment as the existing 142 Line structures. Existing structures on the 142 Line may also need to be changed out to grade the existing line into the new switch site or underneath the DC Line, as the new switch structure will be taller than the existing 142 Line structures. Applicant will attempt to locate the switch structure such that the number of 142 Line structures that need to be replaced is minimized. A typical switch structure ranges in height from 80 to 100 feet above ground; however, height will depend upon terrain as well as design and pole height on the existing 142 Line.⁵¹

VII. TRANSMISSION LINE CONDUCTORS

44.47. 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.⁵²

⁴⁶ Ex. 11 at 7 (EA Scoping Decision); Ex. 12 at 17-18 (EA); DNR Comments (Oct. 26, 2015), eDockets Document No. 201510-115104-01.

⁴⁷ Ex. 12 (EA).

⁴⁸ Ex. 12 at 30 (EA).

⁴⁹ Ex. 3 at 4-3 (Application); Ex. 12 at 20 (EA).

⁵⁰ Ex. 3 at 4-3 (Application); Ex. 12 at 20 (EA).

⁵¹ Ex. 3 at 4-3 (Application); Ex. 12 at 22 (EA).

⁵² Ex. 3 at 4-4 (Application).

Should Alternative Route Segment A be selected, a larger wire might be necessary to allow for higher tension.⁵³

VIII. TRANSMISSION LINE ROUTE WIDTHS

45.48. Applicant requests approval of a 200-foot route width for the majority of the transmission line length and a wider route width (400 feet) in the vicinity of the Backus pPump sStation to accommodate routing the line into the Backus sSubstation associated with the Backus pPump sStation.⁵⁴

IX. TRANSMISSION LINE RIGHT-OF-WAY

46.49. Applicant requested a ROW width of 100 feet, with wider widths in select locations to accommodate guy wires and anchors. The line will parallel the DC Line on the south side, immediately adjacent to but not overlapping the DC Line ROW.⁵⁵

X. PROJECT SCHEDULE

47.50. If all applicable permits are acquired, construction of the Project could begin in early 2017.⁵⁶ Applicant initially contemplated winter construction for the Project; Hhowever, as previously noted, construction of the Project is dependent upon the approval of the Line 3 Replacement Project.⁵⁷ ~~Applicant initially contemplated winter construction for the Project; although winter construction may still be utilized, t~~The Application~~nt~~ and EA identifies y impacts and appropriate mitigation measures for the Project, regardless of the season for construction.⁵⁸

XI. PROJECT COSTS

51. Total Project costs are estimated to be approximately \$2.077 million if the Proposed Route Segment is selected. Total Project costs are estimated to be approximately \$2.227 million if Alternative Route Segment A is selected~~1 million~~.⁵⁹

48.52. Alternative Route Segment A costs approximately 7 percent more. This is within the applicant's original estimate error of 20 percent and design estimate error of 10 percent.⁶⁰

XII. PERMITTEE

⁵³ Ex. 12 at 22 (EA).

⁵⁴ Ex. 312 at 1-3 (ApplicationEA).

⁵⁵ Ex. 12 at 3 (EA).

⁵⁶ See Ex. 12 at 25 (EA).

⁵⁷ Ex. 12 at 3 (EA).

⁵⁸ See generally Ex. 3 (Application) and Ex. 12 (EA).

⁵⁹ Ex. 12 at 3 (EA).

⁶⁰ Ex. 12 at 110 (EA).

~~49.53.~~ The permittee for the Project is Great River Energy.⁶¹

XIII. PUBLIC AND LOCAL GOVERNMENT PARTICIPATION

A. Public Comments

~~50.54.~~ No members of the public attended the EA scoping meeting in Backus.⁶² One member of the public attended the public hearing in Backus, but ~~did not~~ declined to provide verbal comments for the records.⁶³

B. Local Government and State Agency Participation

~~51.55.~~ During the EA scoping comment period, EERA received written comments from two state agencies (MnDOT and DNR).⁶⁴ These comments are summarized in Finding 16 and 17, respectively. ~~MnDOT indicated that although the proposed Project does not directly abut a state trunk highway, MnDOT would like to be made aware of any changes to the proposed Project that may make the Project area close enough to occupy a portion of current MnDOT ROW.⁶⁵ DNR indicated that a cumulative impacts analysis of this Project and related projects (the Sandpiper and Line 3 Replacement Pipeline projects) should be included in the environmental review. DNR also suggested that an alternative segment should be analyzed that follows existing lines across a wetland complex on the west end of the Project. DNR further said the EA should include methods to reduce risks to birds and should discuss proposed maintenance methods, including a discussion of the wire zone/border zone method.⁶⁶~~

~~52.56.~~ During the public hearing comment period, EERA received comments from two state agencies (MPCA and DNR ~~and MPCA~~). These comments are summarized in Finding 31 and 32, respectively. ~~DNR indicated that the EA incorporated DNR's prior comments and that the DNR continued to view Alternative Route Segment A as the best route for the Project. In addition, DNR noted that several new records for the little brown myotis and the NLEB have been entered into the NHIS database in the vicinity of the Project. DNR recommended asking NHIS staff for an updated list of known maternity roosts prior to construction and, if impacts to roosting trees may take place, both USFWS and DNR should be contacted and appropriate permits obtained. DNR further recommended that the route permit include a condition that any tree removal be conducted during the winter months.⁶⁷ MPCA noted that, if a Section 404 permit is required from the U.S. Army Corps of Engineers ("USACE") for the Project, the~~

⁶¹ Ex. 3 at 1-1 (Application).

⁶² Ex. 9 (Comments and Recommendations to Commission on Scoping Process and Route Alternatives).

⁶³ Exhibits – Hearing – Public Hearing Sign-In Sheet (Apr. 12, 2016), eDockets Document No. 20164-119949-02.

⁶⁴ Ex. 12 at 9 (EA).

⁶⁵ ~~MnDOT Comments (Oct. 26, 2015), eDockets Document No. 201510-115093-01.~~

⁶⁶ ~~DNR Comments (Oct. 26, 2015), eDockets Document No. 201510-115104-01.~~

⁶⁷ ~~DNR Comments (Apr. 11, 2016), eDockets Document No. 20164-119912-01.~~

~~Applicant will also have to obtain an MPCA Clean Water Action Section 401 Water Quality Certification or waiver.~~⁶⁸

53:57. In addition, Applicant received comments from the following agencies, as detailed below:

- On July 9, 2015, the MnDOT Office of Aeronautics notified Applicant that the Project ~~should not impact has been determined to have no significant effect to the~~ operations of the Backus Municipal Airport and the Pine River Regional Airport.⁶⁹
- On June 10, 2015, the Minnesota Historical Society State Historic Preservation Office (“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.⁷⁰
- On June 15, 2015, USFWS noted that there are no known records for federally listed or proposed species and/or designated or proposed critical habitat within the action area, and that the Project area is not within one-quarter mile of any known roost trees or hibernacula for the NLEB. USFWS indicated that any tree removal that may occur during the NLEB’s active season (April 1-September 30) has the potential to take NLEB, and recommended that any tree removal at this location be conducted outside the summer roost period (June-July) for the species.⁷¹
- On June 15, 2015, USACE responded to Applicant’s consultation letter by providing information about the Section 10 and Section 404 permits, but did not provide any conclusions about whether the Project requires such permits.⁷²
- ~~On July 9, 2015, the DNR recommended the use of bird diverters on overhead lines near lakes and rivers to minimize risk to trumpeter swans. DNR acknowledged that the DNR NHHS database does not contain any known occurrences of NLEB roosts or hibernacula within a one-mile radius of the Project and that the acoustic and mist net NLEB surveys conducted by Enbridge in the Project area were negative. The DNR noted that the proposed line crosses a Northern Mesic Hardwood Forest (uncommon but not rare in Minnesota) within the Foot Hills State Forest.~~⁷³

⁶⁸ MPCA Comments (Apr. 11, 2016), eDockets Document No. 20164-119918-01; ~~DNR Comments (Apr. 11, 2016), eDockets Document No. 20164-119912-01.~~

⁶⁹ Ex. 3 at ~~7-12~~Appendix D (Application).

⁷⁰ Ex. 3 at Appendix D (Application).

⁷¹ Ex. 3 at 7-28 (Application); ~~Ex. 3 at Appendix D~~ (Application).

⁷² Ex. 3 at Appendix D (Application).

~~⁷³ Ex. 3 at Appendix D (Application).~~

FACTORS FOR A ROUTE PERMIT

~~54.58.~~ 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.”⁷⁴

~~55.59.~~ 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;⁷⁵
- (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 proposed pursuant to subdivision 1 and 2;

⁷⁴ Minn. Stat. § 216E.03, Subd. 7.

⁷⁵ Factor 4 is not applicable because Applicant is not proposing to site a large electric generating plant.

- (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.⁷⁶

~~56-60.~~ 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 right-of-way and, to the extent those are not used for the route, the ~~FC~~Commission must state the reasons.”

~~57-61.~~ In addition to the PPSA, the Commission and the ALJ are 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;
- 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;

⁷⁶ Minn. Stat. § 216E.03, Subd. 7.

- 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;⁷⁷
- 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.⁷⁸

| 58.62. There is sufficient evidence on the record for the Commission to assess the Proposed Route and Alternative Route Segment A using the criteria and factors set forth above.

⁷⁷ This factor is not applicable because it applies only to power plant siting.

⁷⁸ Minn. R. 7850.4100.

APPLICATION OF STATUTORY AND RULE FACTORS

I. APPLICATION OF ROUTING FACTORS TO THE DIFFERENT ROUTING OPTIONS COMPLETE PROPOSED ROUTE AND ALTERNATIVE ROUTE SEGMENT A⁷⁹

A. Effects on Human Settlement

~~59-63.~~ Minnesota law requires consideration of the Project's effect on human settlement, including displacement of residences and businesses; noise created during construction and by operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.⁸⁰

~~60-64.~~ The Project primarily crosses forested lands, wetlands, and agricultural lands. There is one rural residence with miscellaneous outbuildings to the north on the eastern edge of the Project, and a gravel road is perpendicular to the eastern edge of the Project. In addition, there are three existing electric transmission lines in the Project area.⁸¹

1. Displacement

~~61-65.~~ There are no residences or other buildings within the ROW of any routing option.⁸²

~~62-66.~~ No residential or commercial displacement will occur as a result of the Project.⁸³

2. Noise

⁷⁹ For the purposes of these findings ~~and to encourage consistency with the EA:~~

- ~~“Proposed Route” refers to the portion of the Proposed Route for which no alternative was proposed.~~
- ~~“Proposed Route Segment” refers to that portion of the Proposed Route for which an alternative was proposed.~~
- ~~“Alternative Route Segment A” refers to the~~that~~ alternative route segment that would be constructed in place of the Proposed Route Segment~~proposed by DNR and evaluated in the EA.~~~~
- ~~“Proposed Route Segment” refers to that portion of the Proposed Route that would be constructed in place of Alternative Route Segment A.~~
- ~~“Proposed Route” refers to the portion of the Proposed Route for which no alternative was proposed.~~
- ~~“Complete Proposed Route” refers to the Proposed Route for which no alternative was proposed and the Proposed Route Segment.~~

⁸⁰ See Minn. Stat. § 216E.03, Subd. 7(b); Minn. R. 7850.4100(A).

⁸¹ Ex. 12 at 34-35 (EA).

⁸² Ex. 12 at 40 (EA).

⁸³ Ex. 12 at 40, 107 (EA).

~~63.67.~~ MPCA has established standards for the regulation of noise levels.⁸⁴

~~64.68.~~ The most restrictive MPCA noise limits are 60-65 A-weighted decibels (“dBA”) during the daytime and 50-55 dBA during the nighttime.⁸⁵

~~65.69.~~ Noise impacts for the Project will be associated with construction and operation, and will be similar for all routing options.⁸⁶

~~66.70.~~ Noise from heavy equipment and increased vehicle traffic will be intermittent and will primarily occur during daytime hours. Direct noise impacts from construction will be short-term.⁸⁷

~~67.71.~~ 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.⁸⁸

~~68.72.~~ Construction noise is not anticipated to exceed state noise standards. Short-term noise impacts are expected to be minimal; however, intermittent moderate impacts may also occur.⁸⁹ The Applicant has indicated that, to the greatest extent possible, construction will typically occur during weekday daytime hours of 7 a.m. to 10 a.m.⁹⁰ Heavy equipment will be equipped with noise attenuation equipment.⁹¹

~~69.73.~~ Noise impacts during operation of the Project are not anticipated, so no mitigation is proposed.⁹²

3. Aesthetics

~~70.74.~~ The ~~Complete~~ Proposed Route and Alternative Route Segment A parallel the DC Line for nearly their entire length. The Proposed Route Segment does not parallel existing transmission line. Views of the Project will most likely occur along 48th Avenue Southwest. However, the Project will also be visible to recreationalists within Foot Hills State Forest.⁹³

⁸⁴ Ex. 12 at 45 (EA).

⁸⁵ Ex. 12 at 46 (EA).

⁸⁶ Ex. 12 at 46 (EA).

⁸⁷ Ex. 12 at 46-47 (EA).

⁸⁸ Ex. 12 at 47 (EA).

⁸⁹ Ex. 12 at 46 (EA).

⁹⁰ Ex. 3 at 7-8 (Application).

⁹¹ Ex. 12 at 47-48 (EA).

⁹² Ex. 12 at 48 (EA).

⁹³ Ex. 12 at 36 (EA).

~~71.75. The Proposed Route is expected to have low to medium viewer exposure. Direct impacts from the Complete-Proposed Route are incremental and do not obstruct or significantly alter a unique viewshed. Impacts are expected to be moderate.⁹⁴ Additional mitigation is proposed. Aesthetic impacts can be minimized by maintaining a consistent pole placement between the Project and the existing DC Line. This mitigation should only occur if feasible and if maintaining a consistent pole placement does not result in additional wetland impacts.⁹⁵~~

~~76. Alternative Route Segment A is anticipated to have low viewer exposure. It will cross a freshwater pond, which is currently spanned by the DC Line, enlarging a vertical visual disturbance. Impacts are expected to be moderate. As a result, this routing option would result in an enlarged vertical visual disturbance.⁹⁶~~

~~72.77. Proposed Route Segment is anticipated to have low viewer exposure. It will create a new visual disturbance along an existing trail. Impacts are expected to be moderate.⁹⁷~~

~~73.78. Aesthetic impacts can be minimized by prudent routing and limiting vegetation clearing to only what is required for the safe construction and operation of the Project. In addition, aesthetic impacts could be minimized by maintaining a consistent pole placement between the Project and the existing DC Line if feasible and not resulting in additional wetland impacts.⁹⁸~~

~~74. Impacts along all routing options are anticipated to be moderate with the use of standard construction techniques, best management practices (“BMPs”), and general permit conditions.⁹⁹~~

4. Cultural Values

~~75.79. Residents of Cass County self-reported as having primarily American, English, French, German, Irish, Norwegian, Polish, and Swedish ancestry. Local events are tied to ethnic heritage, geographic features, national holidays, and seasonal and municipal activities.¹⁰⁰~~

~~76.80. No impacts are anticipated to cultural values as a result of construction and operation of the Project.¹⁰¹~~

5. Recreation

⁹⁴ ~~Ex. 12 at 37 (EA).~~

⁹⁵ Ex. 12 at ~~3937~~ (EA).

⁹⁶ Ex. 12 at 37-38 (EA).

⁹⁷ ~~Ex. 12 at 37 (EA).~~

⁹⁸ Ex. 12 at 39 (EA).

⁹⁹ ~~Ex. 12 at 107 (EA).~~

¹⁰⁰ Ex. 12 at 39-~~40~~ (EA).

¹⁰¹ Ex. 12 at 40, 107 (EA).

~~81. The entire length or a portion of all routing options~~~~The Complete Proposed Route and Alternative Route Segment A~~ transect the Foot Hill State Forest.¹⁰² ~~The Complete Proposed Route routing options are is~~ not within one mile of ~~any~~ other DNR-classified lands, ~~and no~~ federal or county parks, ~~or~~ federal forest lands, or federal refuges~~refuges are within one mile of the Project.~~¹⁰³

~~77:82.~~ Outdoor recreational opportunities in the Project area include fishing, hunting, wildlife-viewing, berry-picking, water sports, hiking, biking, camping, cross-country skiing, and ATV and snowmobile riding.¹⁰⁴

~~78:83.~~ Multiple trails follow existing electric transmission line ROW within one mile of the ~~Project~~~~Proposed Route, Proposed Route Segment, and Alternative Route Segment A~~. Therefore, the Project is consistent with visitor expectations in this area,~~and impacts are expected to be minimal.~~¹⁰⁵

~~79:84.~~ Impacts along the Proposed Route Segment with the use of standard construction techniques, BMPs, and general permit conditions are anticipated to be moderate because of aesthetic changes along an existing, undesignated trail. Impacts along the Proposed Route and Alternative Route Segment A are anticipated to be minimal with the use of standard construction techniques, BMPs, and general permit conditions.¹⁰⁶

6. Public Services and Infrastructure

~~80:85.~~ Temporary impacts to public services and infrastructure resulting from the Project are anticipated to be minimal. Long-term impacts to public services and infrastructure are not anticipated.¹⁰⁷

~~81:86.~~ The Applicant contacted the Office of Aeronautics within MnDOT regarding the potential for impacts at either the Backus Municipal or Pine River Regional airports. MnDOT indicated that the Project will not impact operations at either airport. No impacts to airport operations are anticipated.¹⁰⁸

~~82:87.~~ No impacts to water utilities are anticipated as a result of the Project.¹⁰⁹

~~83:88.~~ 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. Outages on existing

¹⁰² Ex. 3 at 7-11 (Application).

¹⁰³ Ex. 12 at 50-51 (EA).

¹⁰⁴ Ex. 12 at 50-51 (EA).

¹⁰⁵ Ex. 12 at 51 (EA).

¹⁰⁶ Ex. 12 at 107 (EA).

¹⁰⁷ Ex. 12 at 61-65 (EA).

¹⁰⁸ Ex. 12 at 62 (EA).

¹⁰⁹ Ex. 12 at 64 (EA).

transmission lines will be necessary to construct the Project, but are anticipated to be short-term and minimal.¹¹⁰

84.89. No impacts to natural gas service are anticipated as a result of the Project.¹¹¹

85.90. Traffic interruptions or reroutes could delay emergency vehicles during construction. These impacts would be short-term and intermittent. Impacts are expected to be minimal. No impacts to emergency services are anticipated during operation of~~due to~~ the Project.¹¹²

86.91. 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.¹¹³

B. Effects on Public Health and Safety

92. Minnesota high voltage transmission line routing factors require consideration of the Project's potential effect on health and safety.¹¹⁴

93. There is no indication that any significant impact on human health and safety will arise from the Project.¹¹⁵

1. Construction and Operation of Facilities

87.94. Proper safeguards will be implemented for construction and operation of the Project. The Project will be designed in accordance with local, state, National Electrical Safety Code ("NESC"), and Great River Energy standards regarding clearance to the ground, clearance to crossing utilities, strength of materials, and ROW widths. Construction crews and/or contract crews will comply with local, state, and NESC standards regarding installation of facilities and standard construction practices. Applicant's established safety procedures, as well as industry

¹¹⁰ Ex. 12 at 64-65 (EA).

¹¹¹ Ex. 12 at 65 (EA).

¹¹² Ex. 12 at 62 (EA).

¹¹³ Ex. 12 at 63 (EA).

¹¹⁴ Minn. Stat. § 216E.03, Subd. 7(b)(1); Minn. R. 7850.4100(B).

¹¹⁵ Ex. 12 at 55, 59, 61, 108 (EA).

safety procedures, will be followed during and after installation of the Project, including clear signage during all construction activities.¹¹⁶

88.95. The Backus Substation will be equipped with breakers and relays located where the Project will connect to the substation. The protective equipment is designed to de-energize the Project if necessary.¹¹⁷

2. Electric and Magnetic Fields

89.96. There are no federal standards for transmission line electric fields.¹¹⁸

90.97. 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.¹¹⁹

91.98. The calculated electric fields for the Project are less than the maximum limit of 8 kV/m prescribed by the Commission.¹²⁰

92.99. Research has not been able to establish a cause and effect relationship between exposure to magnetic fields and adverse health effects.¹²¹

93.100. 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.”¹²²

94.101. Some epidemiological results do show a weak but consistent association between childhood leukemia and increasing exposure to EMF.... However, epidemiological studies alone are considered insufficient for concluding that a cause and effect relationship exists, and the association must be supported by data from laboratory studies. Existing laboratory studies have not substantiated this relationship..., nor have scientists been able to understand the biological mechanism of how EMF could cause adverse effects. In addition, epidemiological studies of various other diseases, in both children and adults, have failed to show any consistent

¹¹⁶ Ex. 3 at 7-2 (Application).

¹¹⁷ Ex. 3 at 7-2 (Application).

¹¹⁸ Ex. 12 at 55 (EA).

¹¹⁹ Ex. 12 at 55 (EA).

¹²⁰ Ex. 12 at 57 (EA).

¹²¹ Ex. 12 at 55 (EA).

¹²² Ex. 3 at 7-4 (Application); 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.

~~pattern of harm from EMF. 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, 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.”~~¹²³

3. Implantable Medical Devices

~~95.102.~~ There are no residences, business, or sensitive receptors such as hospitals or nursing homes within the route width of any routing options. In addition, because the maximum electrical field strength directly under the Project is below the interaction level for modern, bipolar pacemakers, but within the range of interaction for older, unipolar pacemakers. Impacts to implantable medical devices and persons using them are expected to be minimal. No mitigation is proposed.¹²⁴

4. Stray Voltage

~~96.103.~~ Impacts from neutral-to-earth voltage are not anticipated, so no mitigation is proposed.¹²⁵

~~97.104.~~ Because the Project will be constructed according to NESC standards and the Commission’s own electric field limit, impacts due to induced voltage are not anticipated.¹²⁶

~~98.1.—There is no indication that any significant impact on human health and safety will arise from the Project.~~¹²⁷

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

~~99.105.~~ 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.¹²⁸

¹²³ ~~Ex. 12 at 55 (EA), 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.~~

¹²⁴ Ex. 12 at 59 (EA).

¹²⁵ Ex. 12 at 60 (EA).

¹²⁶ Ex. 12 at 61 (EA).

¹²⁷ ~~Ex. 12 at 55, 59, 61, 108 (EA).~~

¹²⁸ Minn. Stat. § 216E.03, Subd. 7(b)(5); Minn. R. 7850.4100(C).

1. Agriculture

~~100.106.~~ Agricultural land is present within the Proposed Route (approximately ~~5.25 acres~~ 0.5 mile, primarily pasture and crop land), but not within the Proposed Route Segment or Alternative Route Segment A.¹²⁹

~~101.107.~~ Construction impacts may include soil rutting and compaction as a result of repeated access to the ROW. Any impacts will be short-term ~~or~~ and of a small size.¹³⁰

~~102.108.~~ To mitigate the Project's impacts on agriculture, Applicant will: limit the movement of crews and equipment to the greatest extent possible; repair and restore disturbed areas to pre-construction contours; repair ruts and soil compaction; conduct filling, grading, scarifying, harrowing, and disking; repair damage to ditches, tile, terraces, roads, and other land features; place structures to avoid irrigation systems; and provide compensation to landowners for any crop and property damage.¹³¹

~~103.109.~~ No long-term impacts are anticipated to the agricultural economy from construction and operation of the Project.¹³²

2. Forestry

~~104.~~ ~~The Complete Proposed Route crosses approximately 2.0 miles of forested land.~~¹³³

~~105.110.~~ Timber harvest occurs throughout Cass County and within one mile of the Project.¹³⁴

111. Clearing the ROW of tall-growing woody vegetation will impact approximately 6.75 acres of deciduous forested cover types along the Proposed Route; 2.5 acres of deciduous forested cover types along the Proposed Route Segment; and 1.5 acres of deciduous forested cover types along Alternative Route Segment A. Future timber harvest will be precluded on these acres.¹³⁵

~~106.112.~~ Impacts to forestry operations can be avoided or minimized by prudent routing. In addition, Applicant will offer compensation for removal of vegetation within the

¹²⁹ Ex. 12 at 66 (EA).

¹³⁰ Ex. 12 at 66 (EA).

¹³¹ Ex. 12 at 66-67, 108 (EA); Ex. 3 at 7-16, 7-17 (Application).

¹³² See Ex. 12 at 66-67 (EA).

~~¹³³ Ex. 3 at 7-17 (EA).~~

¹³⁴ Ex. 12 at 67 (EA).

¹³⁵ Ex. 3 at 67 (EA).

ROW to landowners, and landowners will be given the option to keep the timber cut within the easement area on their property.¹³⁶

~~107.113.~~ For all routing options, impacts to forestry are anticipated to be minimal with the use of standard construction techniques, BMPs, and general permit conditions.¹³⁷

3. Mining

~~108.114.~~ There are no known gravel pits or other mining activity within the Complete Proposed Route or Alternative Route Segment A.¹³⁸

~~109.115.~~ Impacts to mining are not anticipated.¹³⁹

4. Tourism

~~110.116.~~ Tourist activities within one mile of the Project are most generally associated with Foot Hills State Forest.¹⁴⁰

~~111.117.~~ On the Proposed Route, impacts to tourism include clearing approximately 14 acres of public recreational land within the Foot Hills State Forest. These impacts are not anticipated to preclude future tourism activities, and impacts to recreation are anticipated to be minimal.¹⁴¹

~~112.118.~~ On the Proposed Route Segment, impacts to tourism include clearing approximately 2.5 acres of public recreational land within the Foot Hills State Forest. These impacts are not anticipated to preclude future tourism activities, and impacts to recreation are anticipated to be minimal.¹⁴²

~~113.119.~~ On Alternative Route Segment A, impacts to tourism include clearing approximately 2.0 acres of public recreational land within the Foot Hills State Forest. These impacts are not anticipated to preclude future tourism activities, and impacts to recreation are anticipated to be minimal.¹⁴³

~~114.120.~~ Impacts to tourism on all routing options are expected to be minimal, and no mitigation is proposed.¹⁴⁴

¹³⁶ Ex. 12 at 67-68 (EA).

~~¹³⁷ Ex. 12 at 108 (EA).~~

¹³⁸ Ex. 12 at 68 (EA).

¹³⁹ Ex. 12 at ~~68~~, 108 (EA).

¹⁴⁰ Ex. 12 at 68 (EA).

¹⁴¹ Ex. 12 at 69 (EA).

¹⁴² Ex. 12 at 69 (EA).

¹⁴³ Ex. 12 at 69 (EA).

¹⁴⁴ Ex. 12 at 70, 108 (EA).

D. Effects on Archeological and Historic Resources

~~115.121.~~ Minnesota Rule 7850.4100(D) requires consideration of the effects on historic and archaeological resources.

~~116.122.~~ Applicant's review of the SHPO records indicated that there are no previously recorded archaeological sites and no previously recorded standing historic structures within the study area (within one mile of the Proposed Route). SHPO concurred that there are no properties listed in the National Register of Historic Places and no known or suspected archaeological properties in the area that will be impacted by the proposed Project.¹⁴⁵

~~117.123.~~ Impacts to archaeological or historic sites are not anticipated.¹⁴⁶

~~118.124.~~ If archeological sites or resources are identified during Project construction, work will be stopped and SHPO staff will be consulted on how to proceed.¹⁴⁷

E. Effects on Natural Environment

~~119.125.~~ 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.¹⁴⁸

1. Air Quality

~~120.126.~~ Impacts to air quality from transmission lines occur during construction and operation. During construction, fugitive dust and equipment exhaust will be emitted. Operation of the transmission line results in the emission of ozone and nitrous oxide.¹⁴⁹

~~121.127.~~ Impacts to air quality from construction and operation are expected to be short-term and minimal, and no mitigation is proposed. Applicant will use appropriate dust control measures to reduce potential fugitive dust emissions.¹⁵⁰

2. Water Quality and Resources

~~122.128.~~ The Project avoids or spans surface waters. ~~Regardless of construction season, Potential impacts to surface waters result from vegetation removal that changes runoff and water flow patterns, or soil erosion that increases water turbidity through increased sedimentation. The Applicant will use BMPs to prevent construction related sediments from impacting surface waters. Additional mitigation measures include use of temporary bridges to~~

¹⁴⁵ Ex. 12 at 70 (EA).

¹⁴⁶ Ex. 12 at 70, 108 (EA).

¹⁴⁷ Ex. 12 at 70 (EA).

¹⁴⁸ Minn. Stat. §§ 216E.03, Subd. 7(b)(1)-(2); Minn. R. 7850.4100(E).

¹⁴⁹ Ex. 12 at 71 (EA).

¹⁵⁰ Ex. 12 at 72, 108 (EA).

~~avoid driving construction vehicles in stream beds. Thus, i~~mpacts to surface waters are anticipated to be minimal.¹⁵¹

~~123.129.~~ Groundwater impacts are anticipated to be minimal. ~~Should impacts to water tables occur they would be localized and short-term. Impacts to ground water can be avoided by minimizing surface water impacts. Embedding poles in frozen ground conditions can avoid de-watering minimizing groundwater impacts.~~¹⁵²

~~124.130.~~ ~~To the greatest extent possible, wetlands will be avoided or spanned. Forested wetlands will be converted to shrub-type wetlands. Impacts to wetlands generally result from construction, for example, soil compaction from access roads may result in changes to water flow.~~ Project impacts to wetlands are anticipated to be minimal. The Project may or may not require a regional general permit from USACE ~~under Section 404 of the Clean Water Act. If a Section 404 Permit is required, a Section 401 Permit or waiver from MPCA also is required.~~ ~~The a~~Applicant will restore all wetlands in accordance with ~~agency-USACE~~ requirements and within the requirements of Minnesota's Wetland Conservation Act.¹⁵³

~~125.131.~~ ~~If wetlands cannot be avoided, P~~potential mitigation measures include ~~conducting construction and maintenance activities during frozen ground conditions, use of construction mats and silt tubes, spreading spoils from structure placement outside the wetland, transporting crews and equipment outside of wetlands,~~ and other BMPs. For all routing options, impacts to water quality and resources are anticipated to be minimal with the use of standard construction techniques, BMPs, and general permit conditions.¹⁵⁴

3. *Flora*

~~126.132.~~ Construction on the Proposed Route would impact approximately 28 acres of vegetation within the ROW. Approximately seven of those acres are forested, 3.5 acres are wetlands, six acres are shrub/scrub, and the remaining acres are emergent herbaceous wetlands or agricultural cover types. The Proposed Route crosses a Northern Mesic Hardwood Forest—an uncommon but not rare native plant community. ~~Impacts to vegetation along the Proposed Route~~ are anticipated to be minimal ~~in a regional context and~~ considering the entire native plant community.¹⁵⁵

~~127.133.~~ Construction on the Proposed Route Segment would impact approximately 2.5 acres of vegetation within the ROW, the majority of which are forested. The Proposed Route Segment divides the Northern Mesic Hardwood Forest native plant community. Impacts to the

¹⁵¹ Ex. 12 at 79-80 (EA).

¹⁵² Ex. 12 at 74 (EA).

¹⁵³ Ex. 3 at 2-5 (Application).

¹⁵⁴ Ex. 12 at 85-86, 108 (EA).

¹⁵⁵ Ex. 12 at 81 (EA).

native plants community are expected to be moderate when considering the entire native plant community. Long-term impacts to other vegetative types are not anticipated.¹⁵⁶

~~128.~~134. Construction on Alternative Route Segment A would impact approximate 1.75 acres of vegetation within the ROW and would cross the Northern Mesic Hardwood Forest native plant community but not divide it. Impacts to the native plants community are anticipated to be minimal considering the entire native plant community. Long-term impacts to other vegetative types are not anticipated.¹⁵⁷

~~129.~~135. To minimize impacts, Applicant will use BMPs during construction, including: revegetation with weed-free seed mixes; using native plant species to revegetate where practicable; using weed-free straw or weed-free hay for erosion control; cleaning and inspecting construction vehicles; coordinating with DNR to determine if any additional invasive species mitigation measures are required on DNR lands.¹⁵⁸

4. Fauna

136. Wildlife within the Project area includes ruffed and sharptail grouse, Hungarian partridge, meadowlark, field sparrow, woodcock, thrushes, woodpeckers, ducks, geese, herons, shore birds, cottontail, red fox, squirrels, gray fox, raccoon, deer, bear, muskrat, mink, and beaver. Other wildlife within the route width includes reptiles and amphibians, such as turtles, snakes, frogs, and toads.¹⁵⁹

~~130.~~137. There are no DNR-managed Wildlife Management Areas, Aquatic Management Areas, or Scientific and Natural Areas, or USFWS Waterfowl Production Areas within one mile of the Project.¹⁶⁰

~~131.~~138. Impacts to wildlife are similar across all routing options. Impacts to avian species can be minimized through placement of bird diverters. Impacts are anticipated to be minimal for all routing options; however, the likelihood of avian collisions is anticipated to be greater along Alternative Route Segment A than the other routing options.¹⁶¹

~~132.~~139. Direct impacts to terrestrial and aquatic wildlife across all routing options will be short-term. Impacts are of relatively small size and are not anticipated to impact unique resources, and population level impacts are not anticipated. As a result, impacts are expected to be minimal.¹⁶² Mitigation measures use wildlife-friendly erosion control blankets and turf

¹⁵⁶ Ex. 12 at 81-82, 108-09 (EA).

¹⁵⁷ Ex. 12 at 82 (EA).

¹⁵⁸ Ex. 12 at 82-83 (EA).

¹⁵⁹ Ex. 12 at 86-87 (EA).

¹⁶⁰ Ex. 12 at 86-87 (EA).

¹⁶¹ Ex. 12 at 87-~~89~~88, 109 (EA).

¹⁶² Ex. 12 at 87 (EA).

reinforcement mats,¹⁶³ minimizing tree felling in areas important to wildlife, re-vegetate disturbed areas with native seed mixes and wildlife conservation species.¹⁶⁴

~~140. Regarding avian species, if the Project is constructed in winter conditions, i~~Impacts to avian species are anticipated to be minimal ~~because many of the species seasonally migrate out of the Project area.¹⁶⁵ In addition, regardless of the time of construction,~~ Applicant will utilize various mitigation measures, including minimizing tree clearing, re-vegetation, and using bird flight diverters in consultation with DNR to minimize impacts.¹⁶⁶ Impacts to avian species can also be mitigated through the use of BMPs for conductor spacing and shielding; these practices are codified in Avian Power Line Interaction Committee standards, and adherence to these standards is a standard Commission route permit condition.¹⁶⁷

~~133.141. Impacts to wildlife habitat along the Proposed Route and Alternative Route Segment A are expected to be minimal. Impacts along the Proposed Route Segment are anticipated to be moderate given this route segment would create new or further emphasize any existing edge effects.¹⁶⁸~~

~~134.142. During scoping, DNR proposed the wire/border zone method of ROW management and maintenance be used to minimize impacts to wildlife habitat and edge effects. This method allows for different types and heights of vegetation based on whether the vegetation is directly underneath the conductor (wire zone) or elsewhere in the ROW (border zone). This softens the edge of a habitat transition zone and minimizes habitat fragmentation. Applicant did not object to this recommendation for maintenance of the line.¹⁶⁹~~

F. Effects on Rare and Unique Natural Resources

~~135.143. Minnesota's high voltage transmission line routing factors require consideration of the Project's effect on rare and unique natural resources.¹⁷⁰~~

~~136.144. There are trumpeter swans (state-listed species of special concern) documented in the vicinity of the proposed Project. The Project crosses a Northern Mesic Hardwood Forest within the Foot Hills State Forest. This type of native community is uncommon but not rare in Minnesota.¹⁷¹~~

¹⁶³ Ex. 12 at 79 (EA).

¹⁶⁴ Ex. 12 at 89 (EA).

¹⁶⁵ Ex. 12 at 87 (EA).

¹⁶⁶ Ex. 12 at 89 (EA).

¹⁶⁷ Ex. 12 at 89 (EA).

¹⁶⁸ Ex. 12 at 90-92 (EA).

¹⁶⁹ Ex. 12 at 92 (EA).

¹⁷⁰ Minn. Stat. § 216E.03, Subd. 7(b)(1); Minn. R. 7850.4100(F). While the Northern Mesic Hardwood forest can be considered a "unique" resource, it was previously discussed under Factor E(3).

¹⁷¹ Ex. 12 at 75 (EA).

~~137.145.~~ In addition, the NLEB was listed by the USFWS as a threatened species on April 2, 2015.¹⁷² In its comment letter dated April 11, 2016, DNR indicated that several new records for the NLEB have recently been entered into the NHIS database in the vicinity of the proposed Project, including several documented maternity roost tree records. ~~However, all of~~ ~~These maternity roost trees are outside~~ all routing options~~the Complete Proposed Route and Alternative Route Segment A.~~ Applicant agrees to obtain an updated list of known maternity roosts prior to construction and coordinate with the DNR and USFWS as needed.¹⁷³

~~138. The Proposed Route is generally located away from rare species in the Project area. Where the Proposed Route crosses the Northern Mesic Hardwood Forest, it parallels existing transmission ROW. Thus, impacts to rare and unique species are anticipated to be minimal.~~¹⁷⁴

~~139.146.~~ Applicant will continue to coordinate with DNR and USFWS to ensure sensitive species near the Project are not impacted by construction activities and will use the following mitigation measures to avoid or minimize impacts: minimize tree clearing and conducting winter tree-clearing if possible; utilize BMPs to prevent soil erosion; implement sound water and soil conservation practices during construction and operation; revegetate disturbed areas with native species and wildlife conservation species where applicable; implement raptor protection measures; and place bird flight diverters in consultation with local wildlife management staff.¹⁷⁵

~~140.147.~~ For all routing options, impacts are anticipated to be minimal with the use of standard construction techniques, BMPs, and general permit conditions.¹⁷⁶

G. Application of Various Design Considerations

~~141.148.~~ 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.¹⁷⁷

~~142.149.~~ The Project has been designed to accommodate future expansion at the Backus Pump Station.¹⁷⁸

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

¹⁷² Ex. 12 at 75-76 (EA).

¹⁷³ DNR Comments (Apr. 11, 2016), eDockets Document No. 20164-119912-01.

~~¹⁷⁴ Ex. 12 at 76-77 (EA).~~

¹⁷⁵ Ex. 12 at 76-77 (EA).

¹⁷⁶ Ex. 12 at 109 (EA).

¹⁷⁷ Minn. Stat. § 216E.03, Subd. 7(a)-(b); Minn. R. 7850.1900, Subp. 2(L).

¹⁷⁸ Ex. 3 at 6-1 (Application).

~~143.150.~~ 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.¹⁷⁹

~~144.151.~~ The Proposed Route parallels existing ROW for the majority of its length and only deviates from ROW to route into Backus Substation. Alternative Route Segment A parallels existing ROW for ~~a portion~~ the majority of its length. The Proposed Route Segment does not parallel existing ROW.¹⁸⁰

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

~~145.152.~~ 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.¹⁸¹

~~146.153.~~ The Proposed Route parallels existing ROW for the majority of its length and only deviates from ROW to route into Backus Substation. Alternative Route Segment A parallels existing ROW for ~~a portion~~ the majority of its length. The Proposed Route Segment does not parallel existing ROW.¹⁸²

J. Electrical System Reliability

~~147.154.~~ Minnesota's high voltage transmission line routing factors require consideration of the Project's impact on electrical system reliability.¹⁸³

~~148.155.~~ The Project will be constructed to meet reliability requirements.¹⁸⁴

¹⁷⁹ Minn. Stat. § 216E.03, Subd. 7(b)(9); Minn. R. 7850.4100(H).

¹⁸⁰ Ex. 12 at 109 (EA).

¹⁸¹ Minn. Stat. § 216E.03, Subd. 7(b)(8); Minn. R. 7850.4100(J).

¹⁸² Ex. 12 at 109 (EA).

¹⁸³ Minn. Stat. § 216E.03, Subd. 7(b)(10); Minn. R. 7850.4100(K).

¹⁸⁴ Ex. 3 at 4-1 to 4-8, 6-1 to 6-5 (Application).

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

~~149.156.~~ Minnesota’s high voltage transmission line routing factors require consideration of the Project’s cost of construction, operation, and maintenance.¹⁸⁵

157. The estimated cost of the Project along the ~~Complete Applicant’s~~ Proposed Route is approximately \$2.1 million.¹⁸⁶ As shown in Table 1, utilizing Alternative Route Segment A rather than the Proposed Route Segment is anticipated to result in higher costs (approximately \$150,000 more) than the Proposed Route.¹⁸⁷ This cost is approximately 7 percent more, and is within the applicant’s original estimate error of 20 percent, and design estimate error of 10 percent.¹⁸⁸

Table 1 – Estimated Project Costs¹⁸⁹

Route	Estimated Cost(\$M)
Proposed Route + Proposed Route Segment	\$2.077
Proposed Route + Alternative Route Segment A	\$2.227

~~150.158.~~ The estimated annual cost of ROW and maintenance of Applicant’s transmission lines in Minnesota currently average approximately \$2,000 per mile. Storm restoration, annual inspections, and ordinary replacement costs are included in these annual operating and maintenance costs.¹⁹⁰

L. Cumulative Potential Effects

~~151.159.~~ The EA analyzed the cumulative potential effects of the Project and the proposed Sandpiper and Line 3 Replacement projects.

~~152.160.~~ The EA concluded that the cumulative potential effects would remain minimal when considering land use and zoning, noise, property values, socioeconomics, emergency services, roads and highways, agriculture, forestry, archeological and historic resources, air quality, rare and unique resources, soils, surface water, wetlands, and wildlife.¹⁹¹

¹⁸⁵ Minn. R. 7850.4100(L).

¹⁸⁶ Ex. 12 at 25 (EA).

¹⁸⁷ Ex. 12 at 25, 110 (EA).

¹⁸⁸ Ex. 12 at 110 (EA).

¹⁸⁹ Ex. 12 at 25 (EA).

¹⁹⁰ Ex. 3 at 4-8 (Application).

¹⁹¹ Ex. 12 at 96-101 (EA).

161. The EA concluded that the cumulative potential effects would remain moderate when considering aesthetics, ~~recreation, vegetation, wetlands, and wildlife habitat.~~¹⁹²

162. With respect to recreation and vegetation, the EA concluded that the cumulative potential effects would remain minimal for the Proposed Route and Alternative Route Segment A and remain moderate for the Proposed Route Segment.¹⁹³

163. With respect to wildlife habitat, the EA concluded that the cumulative potential effects would remain moderate for the Proposed Route Segment, and increase to moderate for the Proposed Route and Alternative Route Segment.¹⁹⁴

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

~~153.~~164. 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.¹⁹⁵

~~154.~~165. Unavoidable adverse impacts ~~may~~will result from construction and operation of the Project. These impacts ~~may~~ include ~~traffic delays,~~ soil compaction and erosion, vegetative clearing, wetland conversion, visual impacts, habitat loss, disturbance and displacement of wildlife, loss of land use for other purposes, loss of timber harvest opportunities, and continued maintenance of tall-growing vegetation. In addition, there is potential for traffic delays, decreases to neighboring property values, interference with AM radio signals, and individual wildlife impacts (for example, avian collisions).¹⁹⁶

N. Irreversible and Irrecoverable Commitments of Resources

~~155.~~166. 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.¹⁹⁷

~~156.~~167. Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use. These commitments include the land

¹⁹² Ex. 12 at 96, ~~98, 101~~ (EA).

¹⁹³ Ex. 12 at 97-98, 101 (EA).

¹⁹⁴ Ex. 12 at 101-102 (EA).

¹⁹⁵ Minn. Stat. § 216E.03, Subd. 7(b)(5)-(6); Minn. R. 7850.4100(M).

¹⁹⁶ Ex. 12 at 104 (EA).

¹⁹⁷ Minn. Stat. § 216E.03, Subd. 7(b)(11); Minn. R. 7850.4100(N).

required to construct the Project, loss of forested wetlands, and impacts to native plant communities.¹⁹⁸

~~157.168.~~ An irretrievable commitment of resources means the resource is not recoverable for later use by future generations. These impacts are primarily related to Project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, other consumable resources, and labor and fiscal resources.¹⁹⁹

~~158.—As set forth above, because the Complete Proposed Route makes use of existing rights-of-way for the majority of its length, eliminates direct impacts to a wetland/pond complex, and compares favorably in terms of cost to Alternative Route Segment A, the record demonstrates that the Complete Proposed Route best meets Minnesota’s route selection criteria.~~

O. Summary of Factors Analysis

169. Impacts along all routing options to the following resources are anticipated to be similar and minimal or non-existent: ~~aesthetics~~, cultural values, displacement, electronic interference, noise, public safety, land-based economies, archaeological and historic resources, air quality, groundwater, surface water, wetlands, geology, ~~wildlife habitat~~, and rare and unique resources.²⁰⁰

170. ~~Impacts along all routing options to wildlife resources are expected to be minimal, except that the likelihood of avian collisions are greater along Alternative Route Segment A.~~

171. ~~Impacts along all routing options to the following resources are anticipated to be similar and moderate: aesthetics and wildlife habitat.~~

~~159.172.~~ Impacts to recreation and vegetation along the Proposed Route and Alternative Route Segment A are expected to be minimal. Impacts to recreation and vegetation along the Proposed Route Segment are expected to be moderate.

~~160.—The Proposed Route Segment is anticipated to have moderate impacts on recreation, compared to minimal impacts from the other routing options.²⁰¹—The Proposed Route Segment is anticipated to have a greater impact on vegetation because it will divide a native plant community.²⁰²~~

~~161.173.~~ The Proposed Route and Alternative Route Segment A make use of existing ROW. The Proposed Route Segment does not.²⁰³

¹⁹⁸ Ex. 12 at 104 (EA).

¹⁹⁹ Ex. 12 at 104 (EA).

²⁰⁰ Ex. 12 at 107, 108, 109 (EA).

~~²⁰¹ Ex. 12 at 107 (EA).~~

~~²⁰² Ex. 12 at 108-09 (EA).~~

²⁰³ Ex. 12 at 109 (EA).

~~162.174.~~ Alternative Route Segment A would cost approximately \$150,000 more to construct than the Proposed Route Segment.²⁰⁴ This cost is approximately 7 percent more, and is within the applicant's estimation error of 20 percent, and design estimate error of 10 percent.²⁰⁵

~~163.175.~~ Based on consideration of all routing factors, the Complete Proposed Route is the best route for the Project. In comparison to the Proposed Route Segment, Alternative Route Segment A makes use of existing right-of-way for the majority of its length, decreases impacts to recreation, decreases impacts to a Native Plant Community, decreases the amount of productive forest land that will be lost, decreases potential impacts of surrounding a wetland on all sides with powerlines, decreases potential impacts to wildlife habitat, and is within the cost estimation error for the Project.

II. NOTICE

~~164.176.~~ 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.²⁰⁶

~~165.177.~~ Applicant provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.²⁰⁷

~~166.178.~~ Minnesota statutes and rules also require EERA and the Commission to provide certain notice to the public throughout the Route Permit process.²⁰⁸ EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.²⁰⁹

²⁰⁴ Ex. 12 at 110 (EA).

²⁰⁵ Ex. 12 at 110 (EA).

²⁰⁶ Minn. Stat. § 216E.03, Subds. 3a, 4; Minn. R. 7850.2100, Subps. 2, 4.

²⁰⁷ Ex. 4 (Notice of Route Permit Application Submission); Compliance Filing (Sept. 1, 2015), eDockets Document No. 20159-113709-01.

²⁰⁸ Minn. Stat. § 216E.03, Subd. 6; Minn. R. 7850.2300, Subp. 2; Minn. R. 7850.2500, Subps. 2, 7-9.

²⁰⁹ Ex. 11 (EA Scoping Decision); Ex. 13 (Notice of Availability of EA); Ex. 20 (Notice of Comment Period on Application Completeness); Ex. 21 (Commission Meeting Notice on Completeness); Ex. 23 (Notice of Public Information and Scoping Meeting); Compliance Filing (Sept. 1, 2015), eDockets Document No. 20159-113709-01; Compliance Filing (Oct. 14, 2015), eDockets Document No. 201510-114824-01.

III. COMPLETENESS OF EA

~~167.179.~~ The EA process is the alternative environmental review approved by the Environmental Quality Board for high voltage transmission lines. The Commission is required to determine the completeness of the EA.²¹⁰ An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.²¹¹

~~168.180.~~ 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 alternative raised in the Scoping Decision.²¹²

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 on September 17, 2015, and issued the order accepting the Application as complete on October 13, 2015.²¹³
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 proposed Project. 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 ~~Complete~~ Proposed Route combined with Alternative Route Segment A satisfies the Route Permit factors set forth in

²¹⁰ Minn. R. 7850.3900, Subp. 2.

²¹¹ *Id.*

²¹² *See* Ex. 11 (EA Scoping Decision); Ex. 12 (EA).

²¹³ Ex. 25 (Commission Order Accepting Application as Complete).

Minnesota Statutes Section 216E.04, Subdivision 8 (referencing Minnesota Statutes Section 216E.03, Subdivision 7) and Minnesota Rule 7850.4100.

8. The evidence on the record demonstrates that the ~~Complete~~ Proposed Route combined with Alternative Route Segment A is the best route for the Project.

9. A Special Route Permit condition requiring use of wildlife-friendly erosion control on DNR-administered lands is appropriate for this project.

10. A Special Route Permit condition requiring, to the greatest extent practical and to the extent additional wetland impacts are not incurred, consistent pole placement with the existing DC Line along the Proposed Route is appropriate for this project.

11. A Special Route Permit condition requiring coordination with USFWS and DNR regarding Northern long-eared bats prior to project construction is appropriate for this project.

12. A Special Route Permit condition requiring vegetation clearing during winter months is appropriate for this project.

~~8.13.~~ The evidence on the record demonstrates that the general Route Permit conditions are appropriate for the Project.

~~9.14.~~ Any of the foregoing Findings more properly designated conclusions are hereby adopted as such.

Exhibit A Proposed Route and Alternative Route Segment A

