MINNESOTA
PUBLIC UTILITIES COMMISSION

Staff Briefing Papers

Meeting Date	January 24, 2019		Agenda Item **8
Company	Great River Energy		
Docket No.	**ET2/TL-15-628**		
	In the Matter of the Application of Great River Energy for a Route Permit for the Bull Moose 115 kV Transmission Line Project in Cass County		
Issues	1. Should the Commission approve and adopt proposed findings of Fact and Conclusions for the Bull Moose 115 kV Transmission Line? 2. Should the Commission find that the environmental assessment and the record created at the public hearing adequately address the issues identified in the scoping decision? 3. Should the Commission issue a final route permit for the Bull Moose 115 kV Transmission Line Project?		
Staff	Cezar Panait	Cezar.Panait@state.mn.us	651-201-2207

✓ **Relevant Documents**	**Date**
Application for Route Permit	August 7, 2015
Commission Order Finding Application Complete	October 13, 2015
Environmental Assessment	March 3, 2016
Applicant's Proposed Findings of Fact and Conclusions	April 22, 2016

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The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

✓ **Relevant Documents**	**Date**
GRE Comments on Route Permit Template	April 22, 2016
DOC EERA Comments and Recommendations	May 6, 2016
OAH Summary of Public Testimony	May 9, 2016
Order Deferring Action	August 11, 2016
GRE Letter	November 8, 2018

Attached Documents

Attachment 1 - Proposed Final Findings of Fact Report (FOF)
Attachment 2 - Proposed High-Voltage Transmission Line Route Permit

I. Statement of the Issues

- Should the Commission approve and adopt proposed findings of Fact and Conclusions for the Bull Moose 115 kV Transmission Line?
- Should the Commission find that the environmental assessment and the record created at the public hearing adequately address the issues identified in the scoping decision?
- Should the Commission issue a final route permit for the Bull Moose 115 kV Transmission Line Project?

II. Project Overview

Great River Energy (GRE or Applicant) has proposed to construct approximately 2.5 miles of new 115 kilovolt (kV) transmission between the existing Minnesota Power Badoura to Pine River 115 kV transmission line (#142 Line) and the proposed Enbridge Backus Substation in Cass County near the city of Backus, Minnesota.

The Project, known as the "Bull Moose Project," will be located in Cass County and specifically entails: 1) construction of a 2.5 mile single-circuit 115 kV transmission line, and 2) construction of the new Enbridge Backus Substation that would be associated with the approved Enbridge Energy Backus Pump Station. Both the substation and the pump station are part of the Line 3 Replacement Project (L3R) (Docket Nos. CN-14-916 and PPL-15-137).

The Applicant's stated need for the project is to serve the new substation which is designed to provide power for the proposed Backus Line 3 petroleum pipeline pump station. The project is estimated to cost approximately $2.5 million and is projected to be energized on October 1st, 2019.

III. Statutes and Rules

Route Permit

Under Minn. Stat. § 216E.03, subd. 1, no person may construct a high-voltage transmission line without a route permit from the Commission. A high-voltage transmission line may be constructed only along a route approved by the Commission.

Under Minn. Stat. § 216E.01, subd. 4, a high-voltage transmission line is defined as a conductor of electric energy and associated facilities designed for and capable of operation at a nominal voltage of 100 kilovolts or more and is greater than 1,500 feet in length. The Project would consist of approximately 2.5 miles of new 115 kV transmission and, therefore, requires a route permit from the Commission.

The Project is subject to Minn. Stat. § 216E.03, subd. 7, which requires that high-voltage transmission lines be routed consistent with state policy and in a manner that minimizes adverse human and environmental impacts while insuring continuing electric power system reliability and integrity to insuring that electric energy needs are met and fulfilled in an orderly

and timely fashion. In determining whether to issue a route permit for a high-voltage transmission line the Commission must consider the factors contained under Minn. Stat. § 216E.03, Subd. 7 and Minn. R. 7850.4100. A route permit issued by the Commission must specify the design, routing, right-of-way preparation, facility construction, and any other conditions it deems appropriate.[1]

The Applicant submitted its route permit application under the alternative review process as outlined in Minn. Stat. § 216E.04 and Minn. Rules 7850.2800 – 7850.3900.

IV. Procedural History

On August 7, 2015, GRE filed a route permit application for the Bull Moose project under the alternative review permitting process.

On September 17, 2015 the Commission met to consider the completeness of the application and on October 13, 2015, issued an *Order Finding Application Complete, Directing Use of Summary Report Review Process, and Granting Variance*. The Order extended the 10-day time limit for the Department of Commerce (Department) to issue the Environmental Assessment (EA) scoping decision.

On September 18, 2015, the Commission and the Department of Commerce Energy Environmental Review and Analysis (EERA) unit issued a Notice of Public Information and Environmental Assessment Scoping Meeting in accordance with Minn. R. 7850.2300.

On October 12, 2015, Commission and EERA staff held a joint public information and environmental assessment scoping meeting in the city of Backus, Minnesota. No members of the public attended the meeting.

On November 4, 2015 the Department filed comments and recommendations on which alternatives should be considered in the EA.

On December 3, 2015 the Commission met and declined to take action on the alternatives to be considered in the EA.

On December 10, 2015 the Commission issued its *Order Approving Issuance of Generic Route Permit Template and Delegating Authority*.

On December 14, 2015, the Deputy Commissioner of the Department issued the EA Scoping Decision in accordance with Minn. R. 7850.3700, subp. 2. The scoping decision identified the issues to be addressed in the EA including potential human and environmental impacts, alternative sites or routes, and a schedule for completion of the EA. The EERA's Decision also included the Generic Permit Template as Appendix C.

[1] Minn. Stat. § 216E.04, Subd. 9.

On March 3, 2016, the EERA issued the EA. On that same day Notice of Availability of EA was published in the EQB Monitor in accordance with Minn. R. 7850.3700, subd. 6. The EA contained a description and analysis of the proposed Project, and discussed the potential impacts of the Applicant's proposed route, as well as alternative Segment A on the human and natural environment. The EA also identified and discussed reasonable mitigation measures that could be implemented to minimize the adverse impacts. Finally, the EA presented a list of permits and approvals known to be required.

On March 9, 2016 the Commission issued a Notice of Public Hearing at 6:00 pm on March 30, 2016 at the City Hall in Backus, Minnesota[2]

On March 30, 2016, Administrative Law Judge James Mortenson presided over the public hearing. A comment period for submission of written comments into the record remained open until April 13, 2016. The hearing procedures included a brief presentation of the proposed Project; an explanation of the process to be followed; the introduction of documents included in the record; and provided an opportunity for any person to present and to ask questions of the applicant, EERA and Commission staff. The hearings continued until all persons had the opportunity to offer testimony and ask questions. A court reporter was present to transcribe the public hearing.

On April 22, 2016, GRE provided proposed findings of fact and conclusions of law for the project (Proposed Findings). The applicant also provided recommended revisions to the generic route permit template for the project.

The Applicant's Proposed Findings addressed all aspects of the review process and included 171 findings of fact, a summary of agency participation (findings 51 to 53), and 10 conclusions.

The Applicant's Proposed Findings concluded that the required process for a route permit was followed including all procedural requirements; a description of the proposed Project and Alternative Route Segment A; an overview of the need for the project; a technical description of the transmission line structures, conductors, right-of-way widths; project schedule, costs; identification of public and government agency participation in the proceedings; application of statutory and rule factors to the proposed route and route alternatives; and facts related to the adequacy of the EA.

On May 6, 2016, the EERA filed comments: (1) updating the EA to address the comments provided by the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Natural Resources (DNR); (2) on the Applicant's proposed Findings and Conclusions of Law, and; (3) on proposed route permit conditions.

On May 9, 2016, Judge Mortenson filed a summary report of the public comments received. According to the ALJ's Summary, one member of the public attended the public hearing and

[2] Notice of the hearing was mailed and published in accordance with Minn. Stat. § 216E.03, Subd. 6, and Minn. R. 7850.2600.

signed the hearing register, but declined to make any oral comments. No written public comments were received by the close of the comment period.

On August 11, 2016 the Commission issued an *Order Deferring Action* pending a final decision on the Line 3 certificate of need and route permit applications.

On November 8, 2018 GRE submitted a letter requesting that the Commission grant a Route Permit that includes the Alternative Route Segment A, with three slight adjustments to the anticipated alignment within the route based on additional design engineering and field surveys as discussed further in section **VI.F**.

V. Parties' Comments

A. GRE Comments and Proposed Route Permit Template Revisions

On April 22, 2016, GRE filed a letter[3] with the Commission providing four (4) specific recommended revisions to the Generic Route Permit Template[4], consistent with its comments in both the Menahga and Motley route permit proceedings (Dkt No. 14-797) (Dkt No. 15-204) projects. In the letter, the Applicant proposed revisions to sections 5.2.5, 5.2.17, 9.4, and 9.5 of the generic permit template, as identified below:

Section 5.3.5 Noise (5.2.5 in permit template). To the extent practicable, construction and routine maintenance activities shall be limited to daytime working hours, as defined in Minn. R. 7030.0200, to ensure nighttime noise level standards are not exceeded.

Reason for change: Construction activities will primarily occur during normal daytime working hours. However, some activities may need to be conducted outside of normal daytime working hours due to agency or electrical system requirements. For example, the Minnesota Department of Transportation may require that any road closure necessary for stringing conductors across the road occur after normal business hours. Also, future emergency maintenance activities may need to be done as expeditiously as possible in order to restore electrical services. If a line were damaged by a storm, Applicant is committed to repair the line and return it to service even if the work requires nighttime activities. This revision is consistent with a similar provision in the Motley Route Permit.

Section 5.3.19 Damages (**5.2.17** in permit template). The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes...

Reason for change: Applicant proposed this change to provide flexibility to landowners and Applicants in resolving damages arising from construction of the Project. This revision was incorporated into the Menahga Permit.

[3] GRE Comments – Route Permit Template, Document ID 20164-120524-01.

[4] Appendix C, Generic Route Permit Template, Document ID 201511-115918-03.

Section 9.4 As-Builts. Within ~~60~~ 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the Project.

Reason for change: Applicant suggested this change to be consistent with the Menahga Permit. In that proceeding, the Applicant had suggested that this provision be revised to allow 180 days to file as-built plans, but a 90 day requirement was placed in the permit. Applicant continues to believe that a 90 day requirement is not generally reasonably feasible, but propose this change to conform to the Menahga Permit.

Section 9.5 GPS Data. Within ~~60~~ 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information…

Reason for change: While GPS data can sometimes be obtained within 60 days of Project completion, GPS and as-built plans and specifications are typically submitted jointly, and the Applicant requested it be allowed to do so here. As noted above, the Applicant continues to believe that a 90 day requirement is not feasible, but proposed this change to conform to the Menahga Permit.

B. EERA's Comments and Recommendations

EERA staff provided additional comments[5] to address corrections and other comments received on the EA prepared for the project. EERA also responded to the Applicant's Proposed Findings, and suggested permit revisions.

1. Environmental Assessment Errata

EERA staff issued two corrections to the EA:

a. On page 13-14, Other Permits and Approvals, State, the following paragraph was added for clarification on page 13, after the last paragraph:

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.

b. On page 101, Wetlands, second paragraph, a correction was made to indicate that the potential cumulative effects to wetlands along the proposed route are anticipated to remain minimal, consistent with Table 22 Effects on Natural Resources on page 109 of the EA.

[5] EERA Comments and Recommendations, Document ID 20165-121136-01.

~~*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.*

2. EERA's Response to Public Comments on the EA

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

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 also be obtained. MPCA indicated that any conditions of the Section 401 Water Quality Certification will be incorporated into the Section 404 permit.

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

DNR Comment 1
DNR stated that recent surveys for the little brown bat and Northern long-eared bat in the project area indicated that roost trees exist within the vicinity of the proposed project. DNR requested the applicant obtain the most recent National Heritage Information System (NHIS) data prior to construction. DNR further recommended the route permit include a stipulation that all tree clearing will occur during winter months.

EERA Response
EERA staff agreed with the recommendation that tree clearing occur during winter months and proposed a 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 requested clarification.

EERA Response
The EA provides information regarding affected acres of deciduous forest cover types along the three routing options at page 67.

3. EERA's Comments on Proposed Findings of Fact and Conclusions (FOF)

EERA staff provided comments on the Applicants' proposed FOF and recommended changes including terminology clarifications throughout the findings regarding the "Proposed Alternative Route Segment A" and the "Proposed Route Segment" to make them consistent with the terminology that was used in the EA. EERA staff also proposed 35 specific edits to

findings and conclusions as proposed by the Applicant. Commission staff will not repeat these comments here, but will reference the EERA Comments document, filed on May 6, 2016.[6]

4. EERA's Comments on the Applicant's Proposed Revisions to the Generic Route Permit Template

EERA staff had no comments regarding the applicant's proposed modifications to the route permit template.

5. EERA's Comments on the Proposed Route Permit Conditions

EERA staff offered the following recommendations as special permit conditions to be included in the final permit:

a. Wildlife-Friendly Erosion Control

The DNR encouraged the use of wildlife-friendly erosion control measures on all lands across Minnesota. EERA staff assumed DNR would require its use as a stipulation to its License to Cross Public Lands and Waters. EERA recommended that the route permit also require the use of wildlife-friendly erosion control on DNR-administered lands. For consistency, the Commission may want to consider requiring use of wildlife-friendly erosion throughout the Project in coordination with DNR.

b. Consistent Pole Placement

The EA recommended 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. EERA staff recommended that 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.

c. 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. EERA staff recommended 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, if there are impacts to roosting trees anticipated, the applicant should contact the U.S. Fish and Wildlife Service to obtain any necessary permits.

d. 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, EERA staff recommended tree removal only occur between October and March to avoid potential impacts to Northern long-eared bats.

[6] EERA Comments and Recommendations (May 6, 2016), Document ID 20165-121136-01.

EERA Staff Recommendation
In concluding their comments, EERA staff agreed with the DNR that Alternative Route Segment A in combination with the Proposed Route is the least damaging alternative and despite a potential cost increase of 7% more than the applicant's Proposed Route Segment for this area, the additional cost is within 10% overall cost estimation margin of error. Depending upon the final design of the Segment A alternative, it may or may not result in a higher total cost than the current estimate.

VI. Staff Analysis

Based on information in the route permit application; the analysis provided in the EA; public comments; the Summary of Testimony; and other evidence in the record, staff provides the following discussion and recommendations.

A. Adequacy of the Environmental Assessment

Staff has reviewed the EA and believes that EERA: (1) conducted an appropriate environmental analysis of the Project for purposes of this proceeding; (2) addressed the issues and alternatives raised in scoping, including the items raised by the Agencies); and (3) prepared the EA in compliance with the procedures in Minn. R. 7850.3700. Therefore, staff recommends the Commission find that the EA and the record created at the public hearing addresses the issues identified in the scoping decision.

B. Project's Relationship to Line 3 Project

The need for this project is predicated upon the construction of Enbridge's Line 3 Project. Staff notes that the applicant previously acknowledged that the project would not be built if the Line 3 pipeline project was not approved, as the project is intended to serve one customer, the Backus Pump Station. Because of the reason described below of a connected action with another pending project at the time, the Commission decided in an Order issued on August 11, 2016 to defer making a decision pending a final outcome on Line 3 certificate of need and route permit applications.

In a letter filed on June 24, 2016, outside of the public comment period, which closed on April 13, 2016, Friends of the Headwaters (FOH) and the Minnesota Center for Environmental Advocacy[7] (MCEA) asserted that the Bull Moose T-Line project is a connected action to Line 3 under Minnesota Environmental Policy Act (Minn. R. 4410.2000, subp. 4); and therefore approval of this project before completion of the EIS for the Line 3 Pipeline Project would violate MEPA. FOH and MCEA asserted that under MEPA if an EIS is required, "a project may not be started and a final governmental decision may not be made to grant a permit, approve a project, or begin a project, until" the EIS has been deemed adequate.

[7] Friends of the Headwaters and the Minnesota Center for Environmental Advocacy did not seek to participate in this docket before, nor did they file any comments prior to this letter.

Staff notes that the EA prepared for the Bull Moose project contains a cumulative potential effects analysis of the project with respect to the Line 3 and Sandpiper projects[8], as the EA stood at the time it was completed in 2016. In addition, the FEIS for the Line 3 project completed in February 2018, addresses the Bull Moose project in section 2.10 Potential Connected Action – Transmission Lines. The Line 3 Replacement Project was approved by the Commission in its Orders of September 5, 2018 (CN-14-916) and October 26, 2018 (route permit PPL-15-137).

C. ALJ Summary of Public Testimony

Based on its review, staff believes that the Commission can accept the ALJ Summary of Public Testimony Report without any modifications.

D. Applicant's Proposed Findings of Fact and Conclusions

Staff has reviewed the Applicants' proposed Findings of Fact and Conclusions, the comments and recommendations received from EERA, and the docket record. Based on the information in the record, staff believes the Commission can adopt the final proposed Findings of Fact, as revised by the EERA. The final proposed FOF is attached to these briefing papers as Attachment 1.

E. Route Permit

Staff agrees with GRE's proposed modifications to the Generic Route Permit Template and incorporated the four GRE proposed revisions into the final proposed route permit. Staff agrees with GRE's rationale for proposing a change to section 5.2.5 regarding noise levels during construction and maintenance activities. Staff agrees that, for example, when emergency maintenance is required in order to repair and restore the service, this activity should be allowed to be conducted even outside daytime working hours consistent with the Commission's decision for the route permit on the Motley project. The other three GRE proposed changes to the permit conditions are consistent with the Route Permit issued for the Menahga Project (Docket No. TL-14-797). Staff believes it is reasonable for the Commission to adopt them in this docket also. The final proposed Route Permit is attached to these briefing papers as Attachment 2.

Staff also agrees with EERA's four proposed special permit conditions and has incorporated them into the final proposed route permit. Staff also added an additional special permit condition requiring the Applicant to coordinate with the U.S. Army Corps of Engineers (USACE) and MPCA regarding any Clean Water Act permits that may be required. Special Permit Conditions are in Section 6 of the Route Permit for the Project.

F. Designated Route

[8] EA at Section 5.8, pages 92-102.

Regarding the selection of a final route for the 115 kV Bull Moose transmission project, staff agrees with the Department's analysis that Alternative Route Segment A, introduced by the DNR, in combination with the Proposed Route of the applicant is the most feasible route for this project and is depicted in the final route maps attached to these briefing papers.

Alternative Route Segment A was proposed by DNR during the EA scoping comment period as a potential mitigation measure against environmental impacts such as impacts to an existing wetland (avoiding enclosing the 9-acre pond with power lines on three sides) and avoiding deforestation of approximately 0.25 miles of greenfield crossing associated with the Applicant's proposed route within the Foot Hills State Forest. Alternative Route Segment A would also follow an existing ROW (DC Line), whereas the Applicant's proposed route segment for this section does not parallel existing ROW. Adoption of the Proposed Route modified with the Segment A alternatives is more consistent with Minn. R. 7850 routing factors than the Applicant's proposed route in its entirety.

Alternative Route Segment A interconnects with the 142 Line approximately 1,000 feet northwest of where the Applicant's proposed route interconnects, and is closer to where Line 142 and the existing DC Line cross. Alternative Route Segment A would still require a 150-foot cross-country portion of the transmission line because of the requirement to interconnect with the existing 142 Line at 90 degrees, using a three-way switch structure.

In the November 8, 2018 letter submitted into the record, GRE provided updated recommendations for the route permit based on additional engineering design and field surveys conducted since 2016. GRE maintains that the best route for the line is still the applicant's proposed route that includes the Alternative Route Segment A, with three slight new adjustments to the anticipated alignment within the route. The three changes are:

- On the west end, where the line connects with the Minnesota Power 115-kV line, the corner pole, structure 2, has been shifted approximately 36 feet to the southwest.
- On the east/west alignment, between structures 3 and 21, the modified transmission line shifts south approximately two feet near structure 21 to as much as 13 feet near structure 3.
- On the east end, where the line heads into Enbridge Backus Pump Station, the corner pole, structure 33, is shifted 31 feet to the west before the turn into the pump station.

Staff agrees with these alignment changes based on the analysis provided by the Applicant and recommends the Commission incorporate them into the final route permit.

VII. Decision Options

A. Permit Condition – Wildlife Friendly Erosion Control Measures

1. Require the Measures to be applied to DNR-administered lands along the route only.

2. Require the Measures be applied along the entire route in consultation with the DNR.

B. Findings of Fact and Conclusions

1. Approve and adopt the Applicant's proposed findings of Fact and Conclusions for the Bull Moose 115 kV Transmission Line Project.

2. Approve and adopt the final proposed Findings of Fact and Conclusions with the modifications proposed by the EERA.

3. Take some other action deemed appropriate.

C. Environmental Assessment

1. Determine that the environmental assessment and the record created at the public hearing addresses the issues identified in the environmental assessment scoping decision.

2. Take some other action deemed appropriate.

D. High-Voltage Transmission Line Route Permit

1. Issue a high-voltage transmission line route permit for the Applicant's proposed route.

2. Issue a high-voltage transmission line route permit for Applicant's proposed route with Alternative Route Segment A plus the three alignment modifications as requested by GRE in its November 8, 2018 letter.

3. Deny the request for a route permit.

4. Take some other action deemed appropriate.

E. Administrative Item

1. Authorize Commission staff to make further refinements to the findings of fact and permit conditions as necessary to ensure consistency with the record, the language of recently issued permits, and the Commission's decision in this matter.

Staff Recommendation: A2, B2, C1, D2, and E1

Attachment 1

STATE OF MINNESOTA
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 PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

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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 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 Lesher, 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, Suite 500, 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 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]

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[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

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[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 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 discuss proposed maintenance methods, including a discussion of the wire zone/border zone method.

18. On October 27, 2015, EERA 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]

22. On December 3, 2015, the Commission met and took no action on route alternatives.[24]

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

24. On December 14, 2015, the Deputy Commissioner of the Department of Commerce issued an EA Scoping Decision.[26]

25. On March 3, 2016, EERA issued the EA for the Project and its Notice of Availability of the EA.[27]

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

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[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).

27. On March 9, 2016, the Commission issued a Notice of 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.

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] No oral comments from the public were received.

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 written comments from members of the public were received.[33] Two state agencies submitted comments: 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]

32. DNR stated Alternative Route Segment A was 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 sides with powerlines, increases the area following existing right-of-way, and decreases the impacts to wildlife from loss of forest habitat. 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 a 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").

[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.

Construction of the Bull Moose Project is dependent upon the approval of the Line 3 Pipeline Replacement Project.[36]

IV. DESCRIPTION OF THE PROJECT

34. The Bull Moose Project includes construction of approximately 2.5 miles of new overhead 115 kV transmission 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 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 new Backus Substation.[37]

35. Applicant proposed 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 a typical span, 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]

36. Applicant requested approval of a 200-foot route width for the transmission line and a wider route width (400 feet) in the vicinity of the Backus Pump Station to accommodate routing the line into the Backus Substation.[39]

37. Applicant proposed 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]

V. ROUTES EVALUATED

A. Route Proposed by Applicant

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").[41] Routing of the Project is constrained by existing infrastructure and the proposed location of the Backus Pump Station.

[36] Ex. 12 at 3 (EA).

[37] Ex. 12 at 3 (EA).

[38] Ex. 12 at 20 (EA).

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

[40] Ex. 12 at 3 (EA).

[41] Ex. 12 at 3 (EA).

39. The proposed transmission line will interconnect with the 142 Line and then 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 then crosses under the DC Line and terminate at the Backus Substation (located just west of 48th Ave. SW).[42]

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 place 7 more residences within 250 feet of the centerline vs. the proposed route);
- Require more angle structures (more turns);
- Not parallel an existing transmission line ROW; and
- Be more costly (approximately $2.5 million vs. $2.1 million).[43]

B. <u>Route Segment Proposed Through Public Participation.</u>

41. One alternative route segment on the western end of the Project area was introduced during scoping and included in the EA Scoping Decision:[44]

1. <u>Alternative Route Segment A</u>

42. Alternative Route Segment A was proposed by the DNR. DNR is the landowner over which Alternative Segment A would cross over. Alternative Route Segment A would follow existing electric transmission infrastructure for its entire length by eliminating the approximately one-quarter mile cross-country portion of the Proposed Route. DNR indicated this alternative would keep a wetland/pond complex from being surrounded within a triangle of utility lines. Alternative Route Segment A would reduce impacts to a Northern Mesic Hardwood Forest by about four acres and decrease the impacts to wildlife from the loss of forest habitat.[45]

43. The Applicant's Proposed Route and Alternative Route Segment A were evaluated in the EA.[46] Evaluation of Alternative Route Segment A functionally divided the Applicant's Proposed Route into two distinct segments: the portion that could potentially be

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

[43] Ex. 3 at 5-1 (Application).

[44] Ex. 11 (EA Scoping Decision).

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

[46] Ex. 12 (EA).

replaced by Alternative Route Segment A (Proposed Route Segment) and the portion unaffected by Alternative Route Segment A (Proposed Route).[47] A map of the routing options is provided in **Exhibit A**.

VI. TRANSMISSION LINE STRUCTURE TYPES AND SPANS

44. Applicant proposes overhead construction using primarily wood single pole structures. Wood poles would be directly embedded and may require guying at certain locations including but not limited to, angle locations.[48]

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.[49]

46. A laminated wood switch structure will be installed approximately 2.5 miles west of the Backus Substation, where the 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; the switch structure height will depend upon terrain as well as design and pole height on the existing 142 Line.[50]

VII. TRANSMISSION LINE CONDUCTORS

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 wires will be 0.528 optical ground wire.[51] Should Alternative Route Segment A be selected, a wire larger than 477 ACSR might be necessary to allow for higher tension.[52]

VIII. TRANSMISSION LINE ROUTE WIDTHS

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 Pump Station to accommodate routing the line into the Backus.[53]

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[47] Ex. 12 at 30 (EA).

[48] Ex. 3 at 4-3 (Application); Ex. 12 at 20 (EA).

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

[50] Ex. 3 at 4-3 (Application); Ex. 12 at 22 (EA).

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

[52] Ex. 12 at 22 (EA).

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

IX. TRANSMISSION LINE RIGHT-OF-WAY

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.[54]

X. PROJECT SCHEDULE

50. If all applicable permits are acquired, construction of the Project could begin in early 2017.[55] Applicant initially contemplated winter construction for the Project; however, as previously noted, construction of the Project is dependent upon the approval of the Line 3 Replacement Project.[56]The Application and EA identifies appropriate mitigation measures for the Project, regardless of the season for construction.[57]

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.[58]

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.[59]

XII. PERMITTEE

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

XIII. PUBLIC AND LOCAL GOVERNMENT PARTICIPATION

A. Public Comments

54. No members of the public attended the EA scoping meeting in Backus.[61] One member of the public attended the public hearing in Backus, but declined to provide verbal comments for the record.[62]

B. Local Government and State Agency Participation

[54] Ex. 12 at 3 (EA).

[55] *See* Ex. 12 at 25 (EA).

[56] Ex. 12 at 3 (EA).

[57] *See generally* Ex. 3 (Application) and Ex. 12 (EA).

[58] Ex. 12 at 3 (EA).

[59] Ex. 12 at 110 (EA).

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

[61] Ex. 9 (Comments and Recommendations to Commission on Scoping Process and Route Alternatives).

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

55. During the EA scoping comment period, EERA received written comments from two state agencies (MnDOT and DNR).[63] These comments are summarized in Finding 16 and 17, respectively.

56. During the public hearing comment period, EERA received comments from two state agencies (MPCA and DNR). These comments are summarized in Finding 31 and 32, respectively.[64]

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 operations of the Backus Municipal Airport and the Pine River Regional Airport.[65]

- 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.[66]

- 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.[67]

- 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.[68]

FACTORS FOR A ROUTE PERMIT

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

[63] Ex. 12 at 9 (EA).

[64] MPCA Comments (Apr. 11, 2016), eDockets Document No. 20164-119918-01: DNR Comments (Apr. 11, 2016), eDockets Document No. 20164-119912-01.

[65] Ex. 3 at Appendix D (Application).

[66] Ex. 3 at Appendix D (Application).

[67] Ex. 3 at 7-28 (Application); Ex. 3 at Appendix D (Application).

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

state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure."[69]

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;[70]
>
> (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;
>
> (8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;

[69] Minn. Stat. § 216E.03, Subd. 7.

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

(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.[71]

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 Commission must state the reasons."

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;

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

[71] Minn. Stat. § 216E.03, Subd. 7.

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;[72]

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.[73]

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.

APPLICATION OF STATUTORY AND RULE FACTORS

I. APPLICATION OF ROUTING FACTORS TO THE DIFFERENT ROUTING OPTIONS [74]

A. Effects on Human Settlement

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.[75]

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

[73] Minn. R. 7850.4100.

[74] For the purposes of these findings:

- "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 alternative route segment that would be constructed in place of the Proposed Route Segment.
-

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

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.[76]

1. Displacement

65. There are no residences or other buildings within the ROW of any routing option.[77]

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

2. Noise

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

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

69. Noise impacts for the Project will be associated with construction and operation, and will be similar for all routing options.[81]

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.[82]

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.[83]

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.[84] The Applicant has indicated that, to the greatest extent possible, construction will

[76] Ex. 12 at 34-35 (EA).

[77] Ex. 12 at 40 (EA).

[78] Ex. 12 at 40, 107 (EA).

[79] Ex. 12 at 45 (EA).

[80] Ex. 12 at 46 (EA).

[81] Ex. 12 at 46 (EA).

[82] Ex. 12 at 46-47 (EA).

[83] Ex. 12 at 47 (EA).

[84] Ex. 12 at 46 (EA).

typically occur during weekday hours of 7 a.m. to 10 p.m.[85] Heavy equipment will be equipped with noise attenuation equipment.[86]

73. Noise impacts during operation of the Project are not anticipated, so no mitigation is proposed.[87]

3. Aesthetics

74. The 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. 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.[88]

75. The Proposed Route is expected to have low to medium viewer exposure. Direct impacts from the Proposed Route are incremental and do not obstruct or significantly alter a unique viewshed. Impacts are expected to be moderate.[89] 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.[90]

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.[91]

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.[92]

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.[93]

4. Cultural Values

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.[94]

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[85] Ex. 3 at 7-8 (Application).

[86] Ex. 12 at 47-48 (EA).

[87] Ex. 12 at 48 (EA).

[88] Ex. 12 at 36 (EA).

[89] Ex. 12 at 37 (EA).

[90] Ex. 12 at 39 (EA).

[91] Ex. 12 at 37-38 (EA).

[92] Ex. 12 at 37 (EA).

[93] Ex. 12 at 39 (EA).

80. No impacts are anticipated to cultural values as a result of construction and operation of the Project.[95]

5. Recreation

81. The entire length or a portion of all routing options transect the Foot Hill State Forest.[96] The routing options are not within one mile of other DNR-classified lands, federal or county parks, federal forest lands, or federal refuges.[97]

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.[98]

83. Multiple trails follow existing electric transmission line ROW within one mile of the Project. Therefore, the Project is consistent with visitor expectations in this area.[99]

84. Impacts along the Proposed Route Segment with the use of standard construction techniques, Best Management Practices (BMP)s, 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.[100]

6. Public Services and Infrastructure

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.[101]

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.[102]

87. No impacts to water utilities are anticipated as a result of the Project.[103]

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[94] Ex. 12 at 39-40 (EA).

[95] Ex. 12 at 40, 107 (EA).

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

[97] Ex. 12 at 50-51 (EA).

[98] Ex. 12 at 50-51 (EA).

[99] Ex. 12 at 51 (EA).

[100] Ex. 12 at 107 (EA).

[101] Ex. 12 at 61-65 (EA).

[102] Ex. 12 at 62 (EA).

[103] Ex. 12 at 64 (EA).

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 transmission lines will be necessary to construct the Project, but are anticipated to be short-term and minimal.[104]

89. No impacts to natural gas service are anticipated as a result of the Project.[105]

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 the Project.[106]

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.[107]

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.[108]

93. There is no indication that any significant impact on human health and safety will arise from the Project.[109]

1. Construction and Operation of Facilities

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

[104] Ex. 12 at 64-65 (EA).

[105] Ex. 12 at 65 (EA).

[106] Ex. 12 at 62 (EA).

[107] Ex. 12 at 63 (EA).

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

[109] 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.[110]

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.[111]

2. Electric and Magnetic Fields

96. There are no federal standards for transmission line electric fields.[112]

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.[113]

98. The calculated electric fields for the Project are less than the maximum limit of 8 kV/m prescribed by the Commission.[114]

99. Research has not been able to establish a cause and effect relationship between exposure to magnetic fields and adverse health effects.[115]

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."[116]

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

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

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

[112] Ex. 12 at 55 (EA).

[113] Ex. 12 at 55 (EA).

[114] Ex. 12 at 57 (EA).

[115] Ex. 12 at 55 (EA).

[116] 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.

various other diseases, in both children and adults, have failed to show any consistent pattern of harm from EMF.[117]

3. Implantable Medical Devices

102. There are no residences, business, or sensitive receptors such as hospitals or nursing homes within the route width of any routing option. 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.[118]

4. Stray Voltage

103. Impacts from neutral-to-earth voltage are not anticipated, so no mitigation is proposed.[119]

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.[120]

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

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.[121]

1. Agriculture

106. Agricultural land is present within the Proposed Route (approximately 5.25 acres, pasture and crop land), but not within the Proposed Route Segment or Alternative Route Segment A.[122]

107. Construction impacts may include soil rutting and compaction as a result of repeated access to the ROW. Any impacts will be short-term and of a small size.[123]

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

[117] Ex. 12 at 55 (EA).

[118] Ex. 12 at 59 (EA).

[119] Ex. 12 at 60 (EA).

[120] Ex. 12 at 61 (EA).

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

[122] Ex. 12 at 66 (EA).

[123] Ex. 12 at 66 (EA).

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.[124]

109. No long-term impacts are anticipated to the agricultural economy from construction and operation of the Project.[125]

2. Forestry

110. Timber harvest occurs throughout Cass County and within one mile of the Project.[126]

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.[127]

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 ROW to landowners, and landowners will be given the option to keep the timber cut within the easement area on their property.[128]

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.[129]

3. Mining

114. There are no known gravel pits or other mining activity within the Complete Proposed Route or Alternative Route Segment A.[130]

115. Impacts to mining are not anticipated.[131]

4. Tourism

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

[125] *See* Ex. 12 at 66-67 (EA).

[126] Ex. 12 at 67 (EA).

[127] Ex. 3 at 67 (EA).

[128] Ex. 12 at 67-68 (EA).

[130] Ex. 12 at 68 (EA).

[130] Ex. 12 at 68 (EA).

[131] Ex. 12 at 68, 108 (EA).

116. Tourist activities within one mile of the Project are most generally associated with Foot Hills State Forest.[132]

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.[133]

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.[134]

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.[135]

120. Impacts to tourism on all routing options are expected to be minimal, and no mitigation is proposed.[136]

D. Effects on Archeological and Historic Resources

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

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.[137]

123. Impacts to archaeological or historic sites are not anticipated.[138]

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.[139]

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[132] Ex. 12 at 68 (EA).

[133] Ex. 12 at 69 (EA).

[134] Ex. 12 at 69 (EA).

[135] Ex. 12 at 69 (EA).

[136] Ex. 12 at 70, 108 (EA).

[137] Ex. 12 at 70 (EA).

[138] Ex. 12 at 70, 108 (EA).

[139] Ex. 12 at 70 (EA).

E. Effects on Natural Environment

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.[140]

1. Air Quality

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.[141]

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.[142]

2. Water Quality and Resources

128. The Project avoids or spans surface waters. 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 avoid driving construction vehicles in stream beds. Impacts to surface waters are anticipated to be minimal.[143]

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.[144]

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 applicant will restore all wetlands in accordance with USACE requirements and within the requirements of Minnesota's Wetland Conservation Act.[145]

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

[141] Ex. 12 at 71 (EA).

[142] Ex. 12 at 72, 108 (EA).

[143] Ex. 12 at 79-80 (EA).

[144] Ex. 12 at 74 (EA).

[145] Ex. 3 at 2-5 (Application).

131. If wetlands cannot be avoided, 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.[146]

3. Flora

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 are anticipated to be minimal considering the entire native plant community.[147]

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 native plant community are expected to be moderate when considering the entire native plant community. Long-term impacts to other vegetative types are not anticipated.[148]

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 plant community are anticipated to be minimal considering the entire native plant community. Long-term impacts to other vegetative types are not anticipated.[149]

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.[150]

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

[146] Ex. 12 at 85-86, 108 (EA).

[147] Ex. 12 at 81 (EA).

[148] Ex. 12 at 81-82, 108-09 (EA).

[149] Ex. 12 at 82 (EA).

[150] Ex. 12 at 82-83 (EA).

beaver. Other wildlife within the route width includes reptiles and amphibians, such as turtles, snakes, frogs, and toads.[151]

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.[152]

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.[153]

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.[154] Mitigation measures use wildlife-friendly erosion control blankets and turf reinforcement mats,[155] minimizing tree felling in areas important to wildlife, re-vegetate disturbed areas with native seed mixes and wildlife conservation species.[156]

140. Impacts to avian species are anticipated to be minimal.[157] Applicant will utilize various mitigation measures, including minimizing tree clearing, re-vegetation, and using bird flight diverters in consultation with DNR to minimize impacts.[158] 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.[159]

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.[160]

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.

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[151] Ex. 12 at 86-87 (EA).

[152] Ex. 12 at 86-87 (EA).

[153] Ex. 12 at 87-89, 109 (EA).

[154] Ex. 12 at 87 (EA).

[155] Ex. 12 at 79 (EA).

[156] Ex. 12 at 89 (EA).

[157] Ex. 12 at 87 (EA).

[158] Ex. 12 at 89 (EA).

[159] Ex. 12 at 89 (EA).

[160] Ex. 12 at 90-92 (EA).

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.[161]

F. Effects on Rare and Unique Natural Resources

143. Minnesota's high voltage transmission line routing factors require consideration of the Project's effect on rare and unique natural resources.[162]

144. There are trumpeter swans (state-listed species of special concern) documented in the vicinity of the proposed Project.[163]

145. In addition, the NLEB was listed by the USFWS as a threatened species on April 2, 2015.[164] 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. These maternity roost trees are outside all routing options. Applicant agrees to obtain an updated list of known maternity roosts prior to construction and coordinate with the DNR and USFWS as needed.[165]

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.[166]

147. For all routing options, impacts are anticipated to be minimal with the use of standard construction techniques, BMPs, and general permit conditions.[167]

G. Application of Various Design Considerations

148. Minnesota's high voltage transmission line routing factors require consideration of the Project's applied design options that maximize energy efficiencies, mitigate adverse

[161] Ex. 12 at 92 (EA).

[162] 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).

[163] Ex. 12 at 75 (EA).

[164] Ex. 12 at 75-76 (EA).

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

[166] Ex. 12 at 76-77 (EA).

[167] Ex. 12 at 109 (EA).

environmental effects, and could accommodate expansion of transmission or generating capacity.[168]

149. The Project has been designed to accommodate future expansion at the Backus Pump Station.[169]

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

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.[170]

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 the majority of its length. The Proposed Route Segment does not parallel existing ROW.[171]

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

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.[172]

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 the majority of its length. The Proposed Route Segment does not parallel existing ROW.[173]

J. Electrical System Reliability

154. Minnesota's high voltage transmission line routing factors require consideration of the Project's impact on electrical system reliability.[174]

155. The Project will be constructed to meet reliability requirements.[175]

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

[169] Ex. 3 at 6-1 (Application).

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

[171] Ex. 12 at 109 (EA).

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

[173] Ex. 12 at 109 (EA).

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

[175] Ex. 3 at 4-1 to 4-8, 6-1 to 6-5 (Application).

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

156. Minnesota's high voltage transmission line routing factors require consideration of the Project's cost of construction, operation, and maintenance.[176]

157. The estimated cost of the Project along the Applicant's Proposed Route is approximately $2.1 million.[177] 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.[178] 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.[179]

Table 1 – Estimated Project Costs[180]

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

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.[181]

L. Cumulative Potential Effects

159. The EA analyzed the cumulative potential effects of the Project and the proposed Sandpiper and Line 3 Replacement projects based on the information available at this time with respect to those projects.

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.[182]

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

[177] Ex. 12 at 25 (EA).

[178] Ex. 12 at 25, 110 (EA).

[179] Ex. 12 at 110 (EA).

[180] Ex. 12 at 25 (EA).

[181] Ex. 3 at 4-8 (Application).

[182] Ex. 12 at 96-101 (EA).

161. The EA concluded that the cumulative potential effects would remain moderate when considering aesthetics.[183]

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.[184]

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.[185]

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

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.[186]

165. Unavoidable adverse impacts will result from construction and operation of the Project. These impacts include 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).[187]

N. Irreversible and Irretrievable Commitments of Resources

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.[188]

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 required to construct the Project, loss of forested wetlands, and impacts to native plant communities.[189]

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,

[183] Ex. 12 at 96 (EA).

[184] Ex. 12 at 97-98, 101 (EA).

[185] Ex. 12 at 101-102 (EA).

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

[187] Ex. 12 at 104 (EA).

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

[189] Ex. 12 at 104 (EA).

including the use of water, aggregate, hydrocarbons, steel, concrete, other consumable resources, and labor and fiscal resources.[190]

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: cultural values, displacement, electronic interference, noise, public safety, land-based economies, archaeological and historic resources, air quality, groundwater, surface water, wetlands, geology, and rare and unique resources.[191]

170. Impacts along all routing options to wildlife resources are expected to be minimal. 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.

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.

173. The Proposed Route and Alternative Route Segment A make use of existing ROW. The Proposed Route Segment does not.[192]

174. Alternative Route Segment A would cost approximately $150,000 more to construct than the Proposed Route Segment.[193] 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.[194]

175. 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

176. Minnesota statutes and rules require an Applicant to provide certain notice to the public and local governments before and during the Route Permit review process.[195]

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[190] Ex. 12 at 104 (EA).

[191] Ex. 12 at 107, 108, 109 (EA).

[192] Ex. 12 at 109 (EA).

[193] Ex. 12 at 110 (EA).

[194] Ex. 12 at 110 (EA).

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

177. Applicant provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.[196]

178. Minnesota statutes and rules also require EERA and the Commission to provide certain notice to the public throughout the Route Permit review process.[197] EERA and the Commission provided notice in satisfaction of Minnesota statutes and rules.[198]

III. COMPLETENESS OF EA

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.[199] An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.[200]

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.[201]

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

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

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

[198] 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.

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

[200] *Id.*

[201] *See* Ex. 11 (EA Scoping Decision); Ex. 12 (EA).

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 on October 13, 2015.[202]

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 alternative identified in the Scoping Decision to a reasonable extent considering the availability of information. 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. An Administrative Law Judge was used to conduct the hearing. All procedural requirements for a public hearing were met.

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

8. The evidence on the record demonstrates that the Proposed Route combined with Alternative Route Segment A is a better route for the Project than the Applicant's proposed route with the proposed route segment.

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 consistent pole placement with the existing DC Line along the Proposed Route is appropriate for this project to the greatest extent practical and including consideration of additional wetland impacts.

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.

[202] Ex. 25 (Commission Order Accepting Application as Complete).

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

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

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

Exhibit A Proposed Route and Alternative Route Segment A