

June 28, 2018

ELECTRONIC FILING

The Honorable James Mortenson
Minnesota Office of Administrative Hearings
600 North Robert Street
P.O. Box 64620
Saint Paul, MN 55164-0620

RE: Comments and Recommendations
Freeborn Wind Transmission Line Project
Docket No. IP-6946/TL-17-322

Dear Judge Mortenson:

Energy Environmental Review and Analysis staff provides the attached comments and recommendations that address public comments received on the environmental assessment prepared for the project; corrections to the environmental assessment; Freeborn Wind's proposed findings of fact, conclusions of law, and recommendations; and staff recommendations.

I am available to answer any questions you might have.

Sincerely,



Andrew Levi
Environmental Review Specialist

Enclosure

cc: John Wachtler, Energy Environmental Review and Analysis
Mike Kaluzniak, Minnesota Public Utilities Commission
Sheena Denny, Office of Administrative Hearings

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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

**ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS
COMMENTS AND RECOMMENDATIONS**

PUC Docket No. IP-6946/TL-17-322

OAH Docket No. 5-2500-35036

Date: June 28, 2018

Staff: Andrew Levi | (651) 539-1840 | andrew.levi@state.mn.us

Issues Addressed: These comments and recommendations address public comments received on the environmental assessment prepared for the project; corrections to the environmental assessment; Freeborn Wind’s proposed findings of fact, conclusions of law, and recommendations; and staff recommendations.

Attachments: EERA edited Findings of Fact, Conclusions of Law, and Recommendations

Additional documents and information, including the route permit application, can be found on eDockets by searching “17” for year and “322” for number: <https://www.edockets.state.mn.us/EFiling/search.jsp> or the EERA webpage: <https://mn.gov/commerce/energyfacilities/Docket.html?Id=34748>.

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

On May 31, 2018, Administrative Law Judge James Mortenson presided over a public hearing on behalf of the Public Utilities Commission (Commission) for the Freeborn Wind Transmission Line Project (project) proposed by Freeborn Wind Energy LLC (Freeborn Wind or applicant).¹ Interested persons were afforded the opportunity to provide verbal comments at the public hearing and written comments through June 12.² Freeborn Wind provided proposed findings of fact, conclusions of law, and recommendations for the project June 18.³

¹ Public Utilities Commission (June 3, 2016) *Notice of Public Hearing*, eDockets No. [20185-143158-01](#) (hereinafter “Public Notice”); *see also* Freeborn Wind Energy LLC (September 20, 2017) *Application to the Minnesota Public Utilities Commission for a Route Permit for the Freeborn Wind Transmission Line Project*, eDockets Nos. [20179-135684-01](#), [20179-135684-02](#), [20179-135684-03](#), [20179-135684-04](#), [20179-135685-01](#), [20179-135685-02](#), [20179-135685-03](#), [20179-135685-04](#), [20179-135685-05](#), [20179-135685-06](#), [20179-135685-07](#).

² Public Notice.

³ Freeborn Wind Energy LLC (June 18, 2018) *Freeborn Wind Energy LLC Proposed Findings of Fact, Conclusions of Law, and Recommendations*, eDockets No. [20186-143958-02](#) (hereinafter “Proposed Findings”).

Response to Substantive Comments on the Environmental Assessment

Comments on the environmental assessment (EA) were received at the public hearing and associated comment period. To the extent possible questions and comments posed at the public hearing were answered at the hearing. Responses to comments and questions specific to the EA are provided below.

Public Hearing

Carol Overland

Comment 1: Ms. Overland inquired about incomplete Footnote 254. (Transcript, at 21) She asked what document the footnote referenced.

Response: The citation should have read: “Public Service Commission of Wisconsin (July 2013) *Environmental Impacts of Transmission Lines*, Available electronically from <https://psc.wi.gov/Documents/Brochures/Environmental%20Impacts%20TL.pdf>.”

Comment 2: Ms. Overland inquired as to the 22-foot right-of-way. “[I]t looks like, even at 22 feet, if the landowners in fee are the people underneath the road, then it looks like it would cross over nonparticipant land, and that should be considered and we should check that out.” (Transcript, at 24)

Response: Freeborn Wind, in its reply comments, indicates that it is negotiating a Three Part Agreement “to address issues related to utility permits for use of public [right-of-way], including the 108/830th Avenue crossing.” (Reply Comments, at 8)

Comment 3: Ms. Overland is concerned that the EA referenced an application of Great River Energy for a similar transmission line project regarding background information relating to corona related noise.

Response: Environmental documents commonly include information by reference where applicable.

Comment 4: Ms. Overland referenced discussion regarding wind turbines on pages 89 through 91 and believes this discussion was in error.

Response: Pages 89 through 91 of the EA fall in the cumulative effects section, which discusses the potential effects of the project and with Freeborn Wind Farm where potential effects coincide. This section is supposed to discuss wind turbines.

Robert Vanpelt

Comment 1: Mr. Vanpelt inquired as to the source of the “top three bullet points” on page 40 of the EA regarding property values.

Response: These bullet points come from the “Conclusions from the Literature” section of *High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects* written by James Chalmers and Frank Voorvaart.⁴ The relevant text can be found on page 229.

Comment 2: Mr. Vanpelt stated that an EERA fact sheet⁵ “doesn’t say the same thing” as the Chalmers and Voorvaart study referenced in Comment 1.

Response: Staff believes statements in the fact sheet are consistent with the summary provided in the Chalmers and Voorvaart study. The Chalmers and Voorvaart study, in summarizing the literature, concluded “when effect have been found [to property values], they tend to be small; almost always less than 10 percent and usually in the range of 3 percent to 6 percent.” The fact sheet refers to “general trends” revealed by numerous studies conducted with varying results, and states “when negative impacts on property values occur due to establishment of a right-of-way, they tend to be in the range of a 1 to 10 percent reduction in value. Conversely, in some cases, the impacts can be positive.”

Written Comments

Multiple comments were provided regarding the completeness of the route permit application. The Commission decided the completeness issue previously. Staff did not respond to these comments as they do not pertain to the EA.

Stephanie Richter

Comment 1: Ms. Richter took issue with patchworknation.org saying that Freeborn County is an “emptying nest” area, and many documented and undocumented century farms are present in Freeborn County.

Response: Staff did not intend to downplay the significance of century farms.

Association of Freeborn County Landowners

Comment 1: AFCL asserts that Commerce did not consider impacts to the Freeborn/Mower electric system. (AFCL, at 7)

Response: The EA discusses induced voltage issues on page 51. With proper grounding, induced voltage is not anticipated. Further, staff specifically requested Freeborn Wind to respond to the following question: “What impact, if any, will the proposed project have to the Freeborn/Mower electric system?” (EA, at Appendix 3 Information Inquiries)

Comment 2: AFCL asserts that Commerce, for the most part, did not consider the permit conditions proposed in its scoping comments.

⁴ Chalmers, J. and Voorvaart, F. (2009) *High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects*, Available electronically from:
<http://www.myappraisalinstitute.org/webpac/pdf/TAJ2009/TAJSU09pg.227-245.pdf>.

⁵ Energy Environmental Review and Analysis (August 4, 2014) *Rights-of-Way and Easements for Energy Facility Construction and Operation*, Available electronically at:
https://mn.gov/commerce/energyfacilities/documents/Easements%20Fact%20Sheet_08.05.14.pdf.

Response: On February 1, 2018, Commission staff filed briefing papers requesting EERA staff to “address the 16 permit conditions recommended by [the Association of Freeborn County Landowners (AFCL)] within the environmental assessment [(EA)]” because the “conditions address several concerns brought forth by members of the public directed towards mitigation of potential impacts associated with the project.”

EERA staff replied, indicating that an EA should not study a preselected set of permit conditions: “Permit conditions flow from the environmental review and hearing process. Ultimately, the Commission determines, based on the record, whether a condition should be included in a permit.” Staff concluded that “the EA will provide the information the Commission needs to determine the appropriate permit conditions for the project, including whether to include the permit conditions suggested by AFCL.”

The EA considered these issues, which are summarized below —

Condition 1: Land used for the transmission line must be only that of participating and/or “good neighbor” landowners.

Freeborn Wind Energy LLC (Freeborn Wind) asserts it has the right of eminent domain. Others, including AFCL, assert Freeborn Wind does not have that right. The EA is an environmental document that outlines potential impacts and mitigation, it is not intended to resolve legal issues. As such, the EA did not study “the ability of Freeborn Wind to use eminent domain to acquire easements for the project.” (EA, page 12). The EA did, however, discuss potential impacts to non-participating landowners.

Condition 2: Agricultural land used during construction must be restored to preconstruction condition and all landowner reimbursed for crop loss during construction and for at least 5 years afterward for losses due to compaction.

Potential mechanisms to mitigate impacts to agricultural land were discussed, including “restoring the land and facilities as nearly as practicable to their original conditions.” (EA, page 58.) The EA also identified commitments made by Freeborn Wind, which includes compensating landowners “for any damage to crops, fences, and drain tiles due to construction” of the project. (*Ibid.*) The manner in which landowners are compensated for right-of-way easements is outside the scope of the EA. Staff believes this condition is unwarranted.

Condition 3: All landowners must be compensated for loss of production due to construction and losses over time due to soil compaction (see typical landowner compensation protocol for transmission construction, compaction, drain tile repair issues as example).

The manner in which landowners are compensated for right-of-way easements is outside the scope of the EA. The EA discusses potential impacts to agriculture, including Freeborn Wind’s commitment to compensate landowners for any damage to crops, fences, and drain tiles, on pages 56 through 59. Commission permits require that landowners be compensated for crop losses.

Condition 4: Agricultural drainage tile must be mapped out prior to construction, and post construction testing and active monitoring after construction must be performed. Damaged or destroyed drain tile must be replaced, and all landowners upstream and downstream must be compensated for losses due to drain tile damage (see landowner compensation protocol for transmission construction, compaction,

drain tile repair issues as example). All landowner complaints regarding drain tile, whether participating or non-participating, must be immediately addressed.

The EA indicates that “drain tile might be struck when auguring structure holes.” (EA, page 57.) Potential mechanisms to mitigate impacts to drain tile damage were also discussed, including identifying drain tile “in consultation with landowners prior to earth disturbing activities.” (EA, page 58.) The EA also identified commitments made by Freeborn Wind, which includes compensating landowners “for any damage to ... drain tiles due to construction” of the project. (*Ibid.*) Commission permits already require that landowners be compensated for damage to drain tile.

Condition 5: If foundations or penta-poles are used for the transmission line, foundation composition must be safe without leachate of harmful chemicals into wetlands, streams, or groundwater.

Concrete foundations and penta-poles are discussed on pages 64 to 67. Leaching might occur; however, impacts are anticipated to be minimal and localized. Staff believes this condition is unwarranted.

Condition 6: Transmission routing must be verified to observe wetland setback.

There is no condition in Commission route permits restricting placement of HVTL structures in a wetland. Short- and long-term impacts to wetlands will occur. These impacts are anticipated to be minimal. (EA, at page 79.) Staff believes this condition is unwarranted.

Condition 7: Transmission must be routed such that they do not interfere and/or obstruct aerial spraying. If it does interfere with aerial spraying, sprayers must be compensated for lost business opportunity and revenue, and all landowners for loss of production.

The EA indicates that “specific impacts to aerial spraying are anticipated to be minimal; the majority of all routing options follow existing rights-of-way or field lines.” (EA, at page 57.) The manner in which landowners are compensated for right-of-way agreements is outside the scope of the EA. No aerial sprayers provided comment regarding loss of revenue. Staff believes this condition is unwarranted.

Condition 8: Transmission must be sited such that they do not impinge on eagle nests and foraging areas, specifically located at least 2 miles distant.

The EA discusses potential impacts to bald eagles and other raptors on pages 84 and 85. Population level impacts are not anticipated. Eagles in the project area currently coexist with multiple existing transmission lines, the Glenworth Substation, and a communications tower. Staff believes this condition is impractical and unwarranted.

Condition 9: Transmission lines must not be sited in areas of covered, transition or active karst.

The transmission line will not be sited in karst: “Freeborn Wind committed to geotechnical testing HVTL structure locations prior to construction. Structure design and location will be determined based upon the results of this testing, and will avoid karst features.” (EA, at page 18). Staff believes this condition is warranted, but recommends different language in its revised findings.

Condition 10: Broadcast radio and television signal and its microwaves must not experience interference from the transmission line.

The EA discusses potential impacts to radio and television signals on pages 32 through 34. Impacts are anticipated to be minimal. “In situations where a HVTL does cause electronic interference, Commission route permits already require permittees to take actions which are feasible to restore or provide reception equivalent to reception levels before construction of the HVTL.” (EA, at page 34).

Condition 11: Emergency radio (ARMER) system must not experience interference.

“The Allied Radio Matrix for Emergency Response (ARMER) is used across Minnesota. In Freeborn County frequencies range from 851 MHz to 859 MHz.⁹² These signals are higher than corona generated noise.” (EA, at page 33.) “The Statewide Maintenance and Operations Manager with MnDOT’s Office of Statewide Radio Communications reviewed the Scoping Summary and concluded that ‘MnDOT has no concerns with the new transmission line affecting the ARMER system.’” (EA, at page 34.) Staff believes this condition is unwarranted.

Condition 12: Telephone lines and cable must not experience inductive interference. Commerce must commission an engineering study to investigate project inductive interference with telephone lines and cable, and the applicant be assessed the cost of the study. Collector and transmission lines must not be routed such that there is inductive interference with telephone and/or cable signal.

The EA discusses induced voltage issues on page 51. With proper grounding, induced voltage is not anticipated. The EA also discusses utilities, including telephone, on pages 53 through 55. Long-term impacts are not anticipated. As discussed in Condition 10 should the HVTL cause electrical interference the permittee is required to restore reception. Further, staff believes—consistent with Minn. Rule 4410.2300(H)—that an engineering study should be commensurate with the importance of the impact and the relevance of the information to a reasoned choice among alternatives. Staff believes this condition is unwarranted.

Condition 13: Transmission line will not create magnetic fields greater than 2 mG at the edge of Right of Way.

The EA discusses magnetic fields on pages 44 through 48. Unlike electric fields, the Commission does not have a standard for magnetic fields. Staff believes this condition is unwarranted.

Condition 14: Transmission system and collector system must not create or exacerbate stray voltage issues in the project area. Any stray voltage problems reported must be corrected immediately.

The EA discusses stray voltage issues on pages 49 and 50. The transmission line will “not interconnect to businesses or residences within any routing option, and does not change local electrical service. As a result, impacts to residences or farming operations from [stray voltage] are not anticipated.” (EA, at page 50) Staff believes this condition is unwarranted.

Condition 15: Freeborn and its contractors must adhere to county and township development and road agreements.

Freeborn Wind committed to develop structure placement and construction procedures in consultation with state, county, and local roadway authorities to meet requirements for clear zones and roadside obstructions.” (EA, at page 53.) Commission route permits already require permittees to “consult with

landowners, townships, cities, and counties along the route and consider concerns regarding ... pole depth and placement in relationship to existing roads and road expansion plans.”

Condition 16: Any permit issued should have a “Special Condition” that “the Project will not be constructed unless the Commission issues a Site Permit for the Freeborn Wind Farm,” and that if permitted, it may be transferred to, owned and built only by a public service corporation.

“Freeborn Wind indicates it will only construct the project if the wind farm is permitted.” (EA, at page i.) In its reply comments Freeborn Wind indicates that it “finds it necessary to clarify that it would intend to proceed with construction of the Project to support the Worth County wind turbines. Accordingly, Freeborn Wind requests that a Route Permit be granted to allow construction of the Transmission Line irrespective of the Commission’s decision in the Site Permit docket.” (Reply Comments, at page 6) Staff believes this condition is unwarranted.

Freeborn Wind

Comment 1: At the public hearing EERA staff stated that construction of the project might violate state noise standards. Freeborn Wind indicated this statement—a technical correction to the EA—is not supported by the record. (Reply Comments, at page 17)

Response: Staff disagrees, and believes stating a violation “might” occur is both warranted and supported by the record.

The EA indicates that heavy equipment will be used during construction. This includes clearing and grading and auguring foundation holes. “Noise associated with heavy equipment can range between 80 and 90 dBA at full power 50 feet from the source.” (EA, at page 37) “A 90 dBA sound at 50 feet is perceived as a 72 dBA sound at 400 feet.” (Ibid.) There are two residences within 400 feet of the Teal and Orange routes, five within 400 feet of the Gold Overbuild option, and four within 400 feet of the Gold Parallel option. Assuming the source noise is 84 dBA at 50 feet from the source, this means that noise from heavy equipment will exceed state noise standards at these location if the equipment runs at intervals greater than 10 minutes in any one hour period.

Staff notes that Freeborn Wind states that project construction will “comply with all applicable Minnesota noise standards.” (Reply Comments, at page 17)

Comment 2: Freeborn Wind pointed out that easements are not “permanent” but extend for 50 years.

Response: Staff appreciates this clarification.

Comment 3: Freeborn Wind indicates that the residences discussed in the potential cumulative impact section on aesthetics are participants in the Project. The company believes that land owner agreements compensate them adequately. Further, these residences have shelter belts that will minimize impacts.

Response: Staff appreciates this clarification, and finds it useful for discussion. No change will be made to the EA as specific landscape features, such as shelter belts, were not considered throughout the document. Also, landowner agreements are outside the scope of the EA.

Environmental Assessment Errata

As pointed out by staff at the public hearing, the following corrections are necessary:

Page 27, Aesthetics, Summary. The following change is necessary for consistency with the rest of the text:

The overall impact intensity level along the Teal, Orange, and Gold ~~routing options are~~ overbuild option is anticipated to be moderate. Impacts along the Purple routing options ~~and the Gold parallel option~~ are anticipated to be minimal. Potential impacts will be short- and long-term, localized, and affect both common and unique resources. Impacts are unavoidable.

Page 37, Noise, Construction, First Paragraph. The following change is necessary for consistency with the rest of the text:

The overall impact intensity level is anticipated to be minimal for all routing options. Potential impacts are anticipated to be short-term and ~~not~~ might exceed state noise standards. These localized impacts will affect unique resources (residences). Impacts are unavoidable but can be minimized.

As pointed out by Freeborn Wind in its Reply Comments, the following correction is necessary:

Page 15, How would Freeborn Wind acquire rights-of-way? first paragraph. The following edit addresses Freeborn Wind's Comment 2 above.

The company must acquire ~~long-term permanent~~ long-term easements for the right-of-way.

Comments on Proposed Findings, Conclusions, and Recommendations

Staff comments regarding Freeborn Wind's proposed findings of fact, conclusions of law, and recommendations consist of two parts. Part one, below, explains substantive edits. Not all substantive edits require an explanation. References to specific findings are numbered according to Attachment A unless otherwise noted. Part two, Attachment A, is an edited version (underline and strikethrough) of the Applicant's proposed findings.

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

Page 2, Original Finding 2. Deletion removes specific information regarding electric generation, but leaves specific information regarding electric transmission—the focus of this docket.

Page 5, Original Findings 15 and 19. Edits provides background as to the reason for Commission Staff's issuance of revised decision options.

Page 7, Original Finding 30. Inserted direct quotation from EERA letter describing how it would address AFCL's proposed permit conditions.

Page 7, Revised Finding 32. Edit clarifies that the Deputy of Commissioner of Commerce signed the scoping decision.

Page 8, Revised Finding 33. Edit indicates that Commission Staff filed the Generic Route Permit Template.

Page 8, Revised Finding 36. Edit clarifies that the letter sent by EERA was directed to newly affected landowners, that is, landowners newly affected by a route or route segment alternative. Such notice is not required by statute or rule, but is considered EERA “best practice”.

Page 10, Original Findings 47 through 54. EERA recommends deleting these findings to reduce redundancy. This more specific project information is provided elsewhere and can be removed from the project summary.

Page 10 and 11, Revised Finding 49. This section provides a description of the location of the different routing options. The deleted information goes beyond location.

Page 12, Revised Findings 51 and 52. Edits clarify that Freeborn Wind did not develop the Orange routing alternative in a vacuum.

Page 13, Revised Finding 54. This section provides a description of the location of the different routing options. The deleted information goes beyond location.

Page 14, Revised Finding 62. Edit provides information from Original Finding 48. Additional information was provided by EERA.

Page 15, Revised Finding 65. Deletion removes information regarding project right-of-way from the route width section.

Page 16, Revised Finding 73. Edit pulls from more current information provided in the EA rather than the Application, and is consistent with Original Finding 172.

Page 17, Revised Finding 78. Edit clarifies that while the Freeborn Wind entity will remain intact, it will nonetheless be transferred to Xcel Energy from Invenergy should a route permit be issued for the project.

Pages 18 through 24, Revised Section 13 Summary of Public Comments. The purpose of this section is to outline public comments received. Deletions remove Freeborn Wind’s responses to public comment—these responses are not findings of facts. Freeborn Wind addressed public comments in its reply comments.

Page 27, Application of Statutory and Rule Factors. These findings address all routing options, not simply those preferred by the Applicant.

Page 28, Original Findings 124 through 130. Displacement refers to the “forced removal of a residence or building to facilitate the construction and operation of a power line,”⁶ and will not occur along any routing option. Deletion removes extraneous discussion inconsistent with conclusions found in the EA.

Page 29, Revised Finding 108. Edit provides information regarding the different routing options that intersect the Floodway and Flood Fringe Districts.

Page 29, Revised Finding 111. Edit clarifies that voluntary agreements are not entirely from landowners.

Page 29, Revised Finding 113. Edits combine Original Findings 136 and 137.

Page 29, Revised Finding 114. Revised text draws from information provided in the EA as opposed to the Application.

Page 30, Revised Finding 115. Edits reflect EERA response to Freeborn Wind Comment #1. The last sentence was deleted because it pertains to operational noise, not construction related noise.

Page 30, Revised Finding 117. Inserted text from EA.

Page 31, Revised Finding 118. Edits modify finding to focus on utility infrastructure.

Page 31, Revised Finding 120. Edit reflects that aesthetic impacts are associated with individuals other than “residents viewing the HVTL from their homes.”

Page 32, Original Finding 144. The record does not demonstrate that the overbuild routing options will have greater aesthetic impact. The EA indicates on page 102 that the Purple Overbuild option will have minimal impacts.

Page 32, Original Finding 145. The record does not demonstrate that the Gold Overbuild option would have greater aesthetic impact than any other routing option. The EA indicates on page 102 that the Teal, Orange, and Gold routing options would all have moderate impacts.

Page 32, Original Finding 146. The record does not demonstrate that the Purple Parallel Route would have less visual impact than the Purple Overbuild route. (See EA at 102.) While the overbuild option would have larger structures parallel option would require one less transmission line on the landscape. Preference between these options would come down to personal preferences.

Pages 32 and 33, Revised Finding 123. Finding included to identify an area where power lines would be located on both sides of the road due to the project.

Page 33, Original Finding 149. Just because previous projects did not impact cultural values does not necessarily mean that the incremental effects of this project will not impact cultural values. EERA staff recommends deletion.

Page 33, Revised Finding 125. Edit deletes language regarding agricultural impacts.

⁶ EA at page 27.

Page 35, Revised Finding 135. Edits better outline the information deleted from Revised Finding 136.

Page 44, Revised Finding 187. Freeborn Wind must obtain a utility easement to construct the project. Further, easement agreements are outside the scope of the EA; therefore, it is unknown if residents are being “well-compensated”.

Page 44, Revised Finding 188. Deletion removes information with no citation.

Page 47, Revised Finding 208. Deletion removes information unrelated to water resources.

Page 50, Revised Finding 219. The Teal and Orange routing options also impact forested wetlands. Freeborn Wind cited the NLCD database, not the NWI database.

Page 51, Revised Finding 228. Edits remove redundant information.

Page 53, Revised Finding 237. Edit keeps the finding focused on bats.

Page 54, Revised Finding 243. APLIC standards mitigate against electrocution, not collision.

Page 56, Revised Finding 255. Edits focus finding on potential environmental effects.

Page 57, Revised Finding 257. Freeborn Wind must obtain a utility easement to construct the project.

Page 57, Revised Findings 258 and 259. Edits focus the finding on the routing factor being discussed.

Page 58, Section J. Edits reflect information found in the EA.

Page 59, Section M. Edits reflect information found in the EA. Additionally, Freeborn Wind’s original finding lacks citation.

Pages 60 and 61, Section O. Edits are intended to better align the summary of the different factors with the factors themselves, not the Orange and Purple Parallel routing options.

Pages 62 and 63, Revised Conclusions 8 through 11. Additions recommend special permit conditions for the Project. An explanation of the need for these conditions is discussed in the following section.

Staff Recommendation

Staff agrees that the Orange Route combined with the Purple Parallel Route is the best route for the project. These routes reduce potential impacts to non-participating landowners, recreationalists, and wildlife, specifically avian species.

Staff recommends the following special permit conditions as indicated.

Noise. The EA indicates that construction related noise might exceed state noise standards. Freeborn Wind stated this will not be the case; the project will comply with all applicable Minnesota noise

standards. This special condition simply provides that the Applicant file information describing its intended mitigation to comply with the noise standards at the plan and profile stage.

Aesthetics. Prudent routing can eliminate the routing of a transmission line on the south side of 130th Street and a distribution line on the north side. It would also eliminate a long diagonal crossing over the roadway. Therefore, staff believes that routing the transmission line on the north side of 130th Street and burying or underbuilding the existing distribution line to mitigate aesthetic impacts is appropriate. Freeborn Wind should incur all costs.

Karst Geology Investigations. Freeborn Wind committed to geological investigations at pole locations prior to construction. This condition provides expectations as to how the company will relay this information to staff at the plan and profile meeting.

Wire/Border Zone Vegetation Management. DNR requested, and the Applicant agreed, to use wire/border zone vegetation management.

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

In the Matter of the Application of Freeborn
Wind Energy LLC for a Route Permit for the
Freeborn Wind Transmission Line in Freeborn
County, Minnesota

OAH 5-2500-35036
MPUC IP-6946/TL-17-322

**DOC EERA REVISIONS TO
FREEBORN WIND ENERGY LLC'S
PROPOSED FINDINGS OF FACT,
CONCLUSIONS OF LAW, AND
RECOMMENDATIONS**

TABLE OF CONTENTS

	<u>Page</u>
STATEMENT OF ISSUE.....	1
SUMMARY OF RECOMMENDATION	1
FINDINGS OF FACT.....	2
I. APPLICANT.....	2
II. ROUTE PERMIT APPLICATION UNDER THE ALTERNATIVE PERMITTING PROCESS AND RELATED PROCEDURAL HISTORY	3
III. CERTIFICATE OF NEED	9
IV. DESCRIPTION OF THE PROJECT.....	9
V. ROUTES EVALUATED.....	11
A. Routes Proposed by Freeborn Wind.	11
B. Routes Proposed Through Public Participation.	12
VI. TRANSMISSION LINE STRUCTURE TYPES AND SPANS	13
VII. TRANSMISSION LINE CONDUCTORS.....	14
VIII. TRANSMISSION LINE ROUTE WIDTHS	15
IX. TRANSMISSION LINE RIGHT-OF-WAY	15
X. PROJECT SCHEDULE.....	16
XI. PROJECT COSTS	17
XII. PERMITTEE.....	17
XIII. SUMMARY OF PUBLIC COMMENTS AND FREEBORN WIND RESPONSES	18
A. Public Comments	18
B. Local Government and State Agency Participation.....	24
FACTORS FOR A ROUTE PERMIT	25
APPLICATION OF STATUTORY AND RULE FACTORS	27
I. APPLICATION OF ROUTING FACTORS TO THE ORANGE AND PURPLE PARALLEL ROUTES AND ROUTE ALTERNATIVES.....	27
A. Effects on Human Settlement	27
B. Effects on Public Health and Safety	37
C. Public Service and Infrastructure.....	39
D. Effects on Land-Based Economies and Direct and Indirect Economic Impacts.....	43
E. Effects on Archeological and Historic Resources	45
F. Effects on Natural Environment	46
G. Effects on Rare and Unique Natural Resources.....	55
H. Application of Various Design Considerations	56
I. Use or Paralleling of Existing Right-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries	57
J. Use or Paralleling of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way	58
K. Electrical System Reliability.....	58

TABLE OF CONTENTS
(continued)

	<u>Page</u>
L. Costs of Constructing, Operating, and Maintaining the Facility	58
M. Adverse Human and Natural Environmental Effects Which Cannot be Avoided	59
N. Irreversible and Irretrievable Commitments of Resources	60
O. Summary of Factors Analysis	60
II. NOTICE	61
III. COMPLETENESS OF EA	61
CONCLUSIONS.....	62
RECOMMENDATIONS	63

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

In the Matter of the Application of Freeborn
Wind Energy LLC for a Route Permit for the
Freeborn Wind Transmission Line in
Freeborn County, Minnesota

OAH 5-2500-35036
MPUC IP-6946/TL-17-322

**FREEBORN WIND ENERGY LLC'S
PROPOSED FINDINGS OF FACT,
CONCLUSIONS OF LAW, AND
RECOMMENDATIONS**

This matter was assigned to Administrative Law Judge (“ALJ”) Jim Mortenson to prepare a report setting forth findings, conclusions, and recommendations on Freeborn Wind Energy LLC’s (“Freeborn Wind” or “Applicant”) Application for a Route Permit (“Route Permit”) for the Freeborn Wind Farm to Glenworth Substation 161 kilovolt (“kV”) Transmission Line Project in Freeborn County, Minnesota (“Application”) (MPUC Docket No. 17-322). Freeborn Wind is seeking to construct a seven-mile, 161 kilovolt transmission line that would connect its proposed Freeborn Wind Farm to the Glenworth Substation (the “Project” or “Transmission Line”).

A public hearing was held before ALJ James R. Mortenson on May 31, 2018 at the Riverland Community College in Albert Lea, Minnesota.

Lisa Agrimonti ~~and Christina Brusven~~, Fredrikson & Byron, P.A., 200 South Sixth Street, Minneapolis, Minnesota 55402, appeared on behalf of Freeborn Wind.

Andrew Levi, 85 Seventh Place East, Suite 200, St. Paul, Minnesota 55101 appeared on behalf of the Department of Commerce, Energy Environmental Review and Analysis (“DOC-EERA”).

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

STATEMENT OF ISSUE

Has the Applicant satisfied the factors set forth in Section 216E.03, subdivision 7, of the Minnesota Statutes and Chapter 7850 of the Minnesota Rules for a Route Permit for the proposed Project?

[Does the Environmental Assessment \(“EA”\) prepared under Minnesota Rules 7850.3700 and the record created at the public hearing and associated public comment period address the issues identified in the scoping decision?](#)

SUMMARY OF RECOMMENDATIONS

The ALJ concludes that Freeborn Wind has satisfied the criteria set forth in Minnesota law for a Route Permit and that both the Orange Route and the Orange Route with the Purple Parallel

Segment (“Purple Parallel Route”) meet the routing criteria and minimize impacts to the human and natural environments.

Given the Applicant’s preference for the Purple Parallel Route, the Commission should GRANT the Route Permit for the Purple Parallel Route with the modification the Applicant proposed to maintain the entire route on participating landowners’ property. That modification would narrow the route at 130th street to match the Orange Route in this area.

In the alternative, the Commission should grant a Route Permit for the Orange Route.

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

FINDINGS OF FACT

I. APPLICANT

1. Freeborn Wind is an affiliate of Invenergy LLC (“Invenergy”). Invenergy is a large-scale energy developer headquartered in Chicago, Illinois.¹
2. ~~Invenergy has developed, built, owned, and operated many operating wind farms, natural gas facilities, solar projects, and battery storage projects throughout the United States, as well as in Japan, Poland, Scotland, and Uruguay.² Invenergy has a proven development track record of 102 large-scale projects with 10,071 MW of wind energy and over 15,915 MW of total projects as of the date of the Application.³~~As part of Invenergy’s various generation projects, including wind farms, natural gas facilities, solar projects, and batter storage. Invenergy has permitted and built 401 miles of transmission lines greater than 69 kV and continues to operate 251 miles of those lines.⁴
3. Invenergy operates the Cannon Falls Energy Center (“CFEC”) in Cannon Falls, Minnesota. The CFEC is a 357 MW natural gas combustion turbine power plant that provides natural-gas fired peaking power. All of the electricity generated by the CFEC is committed to Northern States Power Company d/b/a Xcel Energy (“Xcel Energy”).⁵
4. Freeborn Wind will develop, design, and permit the Project.⁶
5. Freeborn Wind has entered into an agreement with Xcel Energy whereby Xcel Energy will acquire Freeborn Wind upon conclusion of all development activities and subsequently

¹ Freeborn Wind Application for a Route Permit for the 161 kV Freeborn Wind Farm Transmission Line and Associated Facilities in Freeborn County at 5, 6-7 (Sept. 20, 2017) (eDocket No. [20179-135684-02](#)) (hereinafter “Application”).

~~² Application at 5.~~

~~³ Application at 5.~~

⁴ Application at 5.

⁵ Application at 5.

⁶ Direct Testimony of Dan Litchfield at 3 (May 24, 2018) (eDocket No. [20185-143327-02](#)) (hereinafter “Litchfield Direct”).

construct, own, and operate the Project.⁷ On September 21, 2016, Freeborn Wind entered into a Purchase and Sale Agreement (“PSA”) with Xcel Energy, and Invenergy Wind Development North America LLC.⁸ The Commission approved the Purchase and Sale Agreement on September 1, 2017.⁹ Xcel Energy’s acquisition of Freeborn Wind was part of a 1,550 MW wind portfolio proposed by Xcel Energy and approved by the Commission.¹⁰ Xcel Energy will assume the obligations of Freeborn Wind, whether made by the company or imposed by the Commission.¹¹

II. ROUTE PERMIT APPLICATION UNDER THE ALTERNATIVE PERMITTING PROCESS AND RELATED PROCEDURAL HISTORY

6. The Minnesota Power Plant Siting Act (“PPSA”) provides that no person may construct a high voltage transmission line (“HVTL”) without a Route Permit from the Commission.¹² Under the PPSA, an HVTL includes a transmission line that is 100 kV or more and is greater than 1,500 feet in length.¹³ The proposed 161 kV transmission line is an HVTL greater than 1,500 feet in length and, therefore, a Route Permit is required from the Commission prior to construction.¹⁴
7. The Commission’s rules establish two tracks for the permitting of HVTL. The “full permitting process” includes preparing an environmental impact statement (“EIS”) and holding a contested case hearing.¹⁵ The “alternative permitting process” generally applies to modestly sized projects.¹⁶ It requires an EA instead of an EIS and a public hearing instead of a contested case hearing.¹⁷
8. Because Freeborn Wind’s proposed transmission line would operate at a voltage between 100 and 200 kilovolts, it is eligible for the alternative permitting process authorized by Minn. Stat. § 216E.04, subd. 2(3) and Minn. R. 7850.2800, Subp. 1(C).¹⁸
9. Freeborn Wind notified the Commission on June 15, 2017 by letter that it plans to file a Route Permit Application for the Project and that it intends to use the Alternative Permitting Process of Minn. R. 7850.2800 - .3900 for the Project.¹⁹ This letter complies

⁷ Application at 5-6.

⁸ Litchfield Direct at 3.

⁹ *In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company’s 2016-2030 Integrated Resource Plan*, MPUC Docket No. E002/M-16-777, Order Approving Petition, Granting Variance, and Requiring Compliance Filing (Sept. 1, 2017) (eDocket No. 20179- 135205-01).

¹⁰ Litchfield Direct at 3.

¹¹ Litchfield Direct at 3; Application at 5-6.

¹² Minn. Stat. § 216E.03, subd. 2.

¹³ Minn. Stat. § 216E.01, subd. 4.

¹⁴ Application at 7.

¹⁵ See Minn. R. 7850.1700–.2700 (full permitting procedures).

¹⁶ See Minn. R. 7850.2800, subp. 1 (describing criteria for eligible projects); accord Minn. Stat. § 216E.04, subd. 2.

¹⁷ See Minn. R. 7850.2900–.3900 (alternative permitting procedures).

¹⁸ Minn. R. 7850.2800, subp. 1(C); Order Finding Application Complete, Varying Scoping Time Frame, and Referring the Matter to the Office of Administrative Hearings at 2 (Dec. 5, 2017) (eDocket No. [201712-137952-01](#)); Application at 7.

¹⁹ Notification of Pending Route Permit Application (June 15, 2017) (eDocket No. [20176-132807-01](#)).

with the requirement of Minn. R. 7850.2800, Subp. 2, to notify the Commission of this election at least 10 days prior to submitting an application for a Route Permit.

10. On September 20, 2017, Freeborn Wind filed its Application with the Commission for the Project under the Alternative Permitting Process under Minn. Stat. § 216E.04, subd. 2(3) and Minn. R. 7850.2800 to 7850.3900.²⁰
11. On September 22, 2017, the Commission issued a Notice of Comment Period on Completeness of Route Permit Application requesting initial comments by October 10, 2017 and reply comments by October 17, 2017.²¹ On October 4, 2017, the Commission issued a Revised Notice, extending the comment period due to technical difficulties with the comment system. The Revised Notice requested initial comments by October 24, 2017 and reply comments by October 31, 2017. The Notice requested comments on whether Freeborn Wind's Application was complete within the meaning of the Commission's rules; whether there were contested issues of fact with respect to the representations made in the Application; and whether the Commission should appoint an advisory task force.²²
12. On October 4, 2017, the Minnesota Pollution Control Agency ("MPCA") filed comments on completeness of the Application. The MPCA stated that the Shell Rock River in the Project area is listed as impaired, and is therefore subject to increased stormwater treatment requirements, both during and after construction, as per the MPCA's Construction Stormwater Program. Additionally, MPCA stated the Application should include the Clean Water Act Section 401 permit requirement in Section 7.4.²³
13. On October 16, 2017, Freeborn Wind filed documentation confirming that it completed the notice requirements of Minn. R. parts 7850.2100 and provided notice of the Application to local government officials, landowners, and the general service list on September 27, 2017, and that newspaper notice was also completed on October 4, 2017.²⁴
14. On October 24, 2017, DOC-EERA filed comments and recommendations on the completeness of the Application. DOC-EERA recommended that the Commission accept the Application as complete, but require Freeborn Wind to provide additional information on the procedures and practices proposed to acquire Project right-of-way ("ROW") and any additional state permits that may be required. DOC-EERA also recommended that the Commission take no action on an advisory task force.²⁵

²⁰ See Application at 7.

²¹ Notice of Comment Period on Completeness of Route Permit Application (Sept. 22, 2017) (eDocket No. [20179-135743-01](#)).

²² Revised Notice of Comment Period on Completeness of Route Permit Application (Oct. 4, 2017) (eDocket No. [201710-136114-01](#)).

²³ MPCA Comments (Oct. 4, 2017) (eDocket No. [201710-136085-01](#)).

²⁴ Affidavits of Mailing and Publication (Oct. 16, 2017) (eDocket No. [201710-136534-01](#)); see also Freeborn Wind Notice of Freeborn Wind Notice of Filing of Route Permit Application (Sept. 27, 2017) (eDocket No. [20179-135845-01](#)).

²⁵ DOC-EERA Comments and Recommendations on Application Completeness (Oct. 24, 2017) (eDocket No. [201710-136798-01](#)).

15. Fifteen public comments were received during the initial and reply comment periods on the completeness of the Application. The comments were largely related to the potential impacts of the Project and requested the appointment of an advisory task force.²⁶ [The Association of Freeborn County Landowners \(“AFCL”\) requested that “\[b\]ecause this project and the Freeborn Wind project ²⁷ are tied and dependent, these two dockets should be joined in one, ideally the pre-existing 17-410.”²⁸](#)
16. Freeborn Wind filed reply comments on October 31, 2017, providing the additional information requested by DOC-EERA.²⁹
17. On November 2, 2017, DOC-EERA filed a letter stating that Freeborn Wind’s reply comments provided the requested information.³⁰
18. On November 3, 2017, the Commission issued a Notice of Commission Meeting scheduled on November 16, 2017.³¹
19. On November 8, 2017, Commission Staff filed Briefing Papers for the November 16, 2017 Commission meeting. Staff recommended that the Commission refer this matter to an ALJ for a “summary proceeding” which would involve findings of fact, conclusions of law and a recommendation.³² On November 16, 2017, Staff filed amended decision options [to provide an option to “combine this application with Docket IP6946/17-410” as requested by AFCL.](#)³³
20. On November 15, 2017, Freeborn Wind filed a response opposing Staff’s recommendation that the Commission refer this matter to an ALJ for a “summary proceeding.” Freeborn Wind requested instead that the ALJ prepare a summary report, whereby the ALJ would summarize comments received.³⁴
21. On December 5, 2017, the Commission issued an Order finding the Application complete; varying Minn. R. 7850.3700, subp. 3, to extend the 10-day time limit for the DOC-EERA to issue its scoping decision in order to allow for Commission review; requesting that DOC-EERA file comments with draft route alternatives for the Commission’s input before issuing a final scoping decision; and referring this matter to the Office of Administrative Hearings, requesting that the assigned ALJ prepare a report setting forth findings, conclusions, and recommendations on the merits of the proposed Project and alternatives to the proposed Project, applying the criteria set forth in statute and rule, and provide

²⁶ See, e.g., Comment by Allie Olson (Oct. 24, 2017) (eDocket No. [201710-136751-01](#)); Comment by Lisa Hajek (Oct. 24, 2017) (eDocket No. [201710-136801-01](#)).

²⁷ [Commission Docket No. IP-6946/17-410, In the Matter of the Application of Freeborn Wind Energy LLC for a Site Permit for the Freeborn Wind Farm in Freeborn County, Minnesota.](#)

²⁸ [Association of Freeborn County Landowners Application Completeness Comments \(Oct. 24, 2017\) \(eDockets No. 201710-136755-01\).](#)

²⁹ Freeborn Wind Reply Comments on Completeness (Oct. 31, 2017) (eDocket No. [201710-137023-02](#)).

³⁰ DOC-EERA Letter (Nov. 2, 2017) (eDocket No. [201711-137115-01](#)).

³¹ Notice of Commission Meeting (Nov. 3, 2017) (eDocket No. [201711-137152-02](#)).

³² Staff Briefing Papers (Nov. 8, 2017) (eDocket No. [201711-137241-01](#)).

³³ Staff Amended Decision Options (Nov. 16, 2017) (eDocket No. [201711-137448-01](#)).

³⁴ Freeborn Wind Response to Staff Briefing Papers (Nov. 15, 2017) (eDocket No. [201711-137397-01](#)).

comments and recommendations, if any, on the conditions and provisions of the proposed permit.³⁵

22. On December 6, 2017, the Commission and DOC-EERA issued a Notice of Environmental Assessment Scoping and Public Information Meeting, requesting response to four questions regarding the Project: 1) What potential human and environmental impacts should be studied? 2) What are possible methods to minimize, mitigate, or avoid potential impacts that should be studied? 3) Are there any alternative routes or route segments that should be studied to address potential impacts? 4) Are there any unique characteristics within the Project area that should be considered?³⁶
23. On December 14, 2017, Freeborn Wind filed documentation confirming that it had published notice of the EA Scoping and Public Information Meeting in the *Albert Lea Tribune* on December 8, 2017.³⁷
24. On December 19, 2017, Commission Staff and DOC-EERA held the EA Scoping and Public Information Meeting in Albert Lea, Minnesota.³⁸
25. On January 2 and January 3, 2018, three individuals filed public comments.³⁹ On January 3, 2018, ~~the Association of Freeborn County Landowners (“AFCL”)~~ filed comments.⁴⁰
26. Also on January 3, 2018, the Minnesota Department of Transportation (“MnDOT”) filed comments requesting that the EA evaluate the locations of the proposed utility poles in relation to U.S. Highway 65 (“US 65”), and that Freeborn Wind coordinate any route construction work or delivery of materials that may affect MnDOT ROW.⁴¹
27. On January 8, 2018, DOC-EERA filed public comments that it received regarding the EA scoping process.⁴²
28. On January 25, 2018, DOC-EERA filed comments summarizing the EA scoping process and informing the Commission of the route and route segments that DOC-EERA intended to recommend ~~for inclusion are included~~ in the scoping decision for the EA.⁴³ DOC-EERA considered the comments submitted during the scoping process regarding the various alternatives proposed. DOC-EERA identified the “Purple Route” and the “Gold Route” segments as alternative routes that co-locate or parallel the Project with existing

³⁵ Order Finding Application Complete, Varying Scoping Time Frame, and Referring the Matter to the Office of Administrative Hearings (Dec. 5, 2017) (eDocket No. [201712-137952-01](#)).

³⁶ Notice of Environmental Assessment Scoping and Public Information Meeting (Dec. 6, 2017) (eDocket No. [201712-137985-01](#)).

³⁷ Freeborn Wind Affidavit of Publication (Dec. 14, 2017) (eDocket No. [20172-138188-01](#)).

³⁸ See Order Proposing Additional Route Segment for Consideration in EA and Delegating Authority at 1 (March 5, 2018) (eDocket No. [20183-140767-01](#)).

³⁹ Comment by Linda Herman (Jan. 2, 2018) (eDocket No. [20181-138508-01](#)); Comment by Kathy Nelson (Jan. 3, 2018) (eDocket No. [20181-138565-01](#)); Comment by Sue Madson (Jan. 3, 2018) (eDocket No. [20181-138564-01](#)).

⁴⁰ Comment by AFCL (Jan. 3, 2018) (eDocket No. [20181-138611-01](#)).

⁴¹ Comment by MnDOT (Jan. 3, 2018) (eDocket No. [20181-138602-01](#)).

⁴² Meeting Notes (Jan. 8, 2018) (eDocket No. [20181-138726-01](#)).

⁴³ EERA Comments on Scoping Process (Jan. 25, 2018) (eDocket No. [20181-139336-01](#)).

transmission infrastructure.⁴⁴ DOC-EERA recommended that the Deputy Commissioner of Commerce include in the scoping decision the original route proposed by Freeborn Wind (which it calls the “Teal Route”), the Orange Route (which limits the route to participating landowners’ property), and the Purple Route. DOC-EERA did not recommend the Gold Route be included in the scope due to impacts to non-participating landowners and other issues.⁴⁵

29. On January 26, 2018, the Commission issued a Notice of Commission Meeting scheduled for February 8, 2018.⁴⁶
30. On February 7, 2018, DOC-EERA filed a letter indicating that the “EA will study the potential human and environmental impacts of the project. It will discuss ways to minimize, mitigate, or avoid potential impacts. The EA will address the issues raised during the scoping process, including the issues suggested by AFCL’s proposed permit conditions—many of which were specifically called out in EERA staff’s scoping summary.”~~it would consider the issues raised by AFCL’s proposed permit conditions in the EA.~~⁴⁷
31. On February 8, 2018, the Commission met to consider what action it should take regarding route alternatives to be evaluated in the EA.⁴⁸ In its March 5, 2018 Order Proposing an Additional Route Segment for Consideration in the Environmental Assessment and Delegating Authority, the Commission agreed with DOC-EERA that the Teal Route, the Orange Route, and the Purple Route should be included in the scoping decision for the EA, and proposed that the Gold Route also be included in the EA.⁴⁹ The Commission also requested that the EA examine the possibility of (a) paralleling the existing transmission line corridor and (b) using existing transmission line ROW (either by reconstruction of the existing structures or an under/over build) for the Purple Route and the Gold Route. The Commission also delegated authority to administer this Route Permit proceeding to the Executive Secretary.⁵⁰
32. On March 8, 2018, the Deputy Commissioner of the Department of Commerce DOC-EERA filed issued the EA Scoping Decision, ~~Generic Route Permit Template, and Also, DOC EERA filed~~ Notice of EA Scoping Decision.⁵¹

⁴⁴ The “Purple Route” refers to the Orange Route as modified by the Purple Route Segment. The “Gold Route” refers to the Orange Route as modified by the Gold Route Segment.

⁴⁵ EERA Comments on Scoping Process at 10 (Jan. 25, 2018) (eDocket No. [20181-139336-01](#)) (hereinafter “[Scoping Summary](#)”).

⁴⁶ Notice of Commission Meeting – February 8, 2018 (Jan. 26, 2018) (eDocket No. [20181-139386-08](#)).

⁴⁷ EERA Letter (Feb. 7, 2018) (eDocket No. [20182-139858-01](#)).

⁴⁸ Notice of Commission Meeting – February 8, 2018 (Jan. 26, 2018) (eDocket No. [20181-139386-08](#)) and Order Proposing Additional Route Segment for Consideration in EA and Delegating Authority (March 5, 2018) (eDocket No. [20183-140767-01](#)).

⁴⁹ Order Proposing Additional Route Segment for Consideration in EA and Delegating Authority (March 5, 2018) (eDocket No. [20183-140767-01](#)).

⁵⁰ Order Proposing Additional Route Segment for Consideration in EA and Delegating Authority (March 5, 2018) (eDocket No. [20183-140767-01](#)).

⁵¹ Environmental Assessment Scoping Decision (March 8, 2018) (eDocket No. [20183-140868-01](#)); ~~Generic Route Permit Template (March 8, 2018) (eDocket No. 20183-141262-01)~~; Notice of Environmental Assessment Scoping Decision (March 8, 2018) (eDocket No. [20183-140885-01](#)).

~~32.~~[33.](#) [On March 22, 2018, Commission Staff filed the Generic Route Permit Template.](#)⁵²

~~33.~~[34.](#) On April 2, 2018, a prehearing conference was held before ALJ Jim Mortenson, and on April 4, 2018, the ALJ issued the First Prehearing Order, establishing a schedule for the proceedings.⁵³ On May 17, 2018, the ALJ issued an Amended First Prehearing Order.⁵⁴

~~34.~~[35.](#) On April 24, 2018, Freeborn Wind filed a copy of an email received from Lisa Joyal, Endangered Species Review Coordinator, Minnesota Department of Natural Resources (“MDNR”), regarding Freeborn Wind’s Natural Heritage Information System Data Request Form for the Project. The email serves as a concurrence for the rare features assessment in the Commission Route Permit Application and can be used in lieu of a formal Natural Heritage Letter.⁵⁵

~~35.~~[36.](#) On May 11, 2018, DOC-EERA filed documentation confirming that notice of the Project had been provided by mail to [newly affected](#) landowners.⁵⁶

~~36.~~[37.](#) On May 14, 2018, DOC-EERA filed the EA.⁵⁷ On May 23, 2018, DOC-EERA filed documentation confirming that it had provided the EA and notices of availability of the EA to the Albert Lea Public Library, persons on the Project list, and to the *EQB Monitor*.⁵⁸ On May 31, 2018, DOC-EERA filed the Notice of EA Availability for the Project.⁵⁹

~~37.~~[38.](#) On May 17, 2018, the Commission issued a Notice of Public Hearing scheduled for May 31, 2018. The Notice also opened a period for public comment ending on June 12, 2018.⁶⁰ Approximately 25 comments from members of the public were submitted during the comment period. The MDNR also submitted a comment.⁶¹

~~38.~~[39.](#) On May 24, 2018, Freeborn Wind filed the Direct Testimony of Dan Litchfield.⁶²

~~39.~~[40.](#) On May 25, 2018, Freeborn Wind filed an Affidavit of Publication for the Notice of Public Hearing.⁶³

⁵² [Generic Route Permit Template \(March 22, 2018\) \(eDockets No. 20183-141262-01\).](#)

⁵³ First Prehearing Order (April 4, 2018) (eDocket No. [20184-141685-01](#)).

⁵⁴ Amended First Prehearing Order (April 4, 2018) (eDocket No. [20185-143153-01](#)).

⁵⁵ Freeborn Wind Comments – MDNR National Heritage Concurrence (April 24, 2018) (eDocket No. [20184-142258-02](#)).

⁵⁶ EERA Affidavit of Service by Mail (May 11, 2018) (eDocket No. [20185-142965-01](#)).

⁵⁷ Environmental Assessment (May 14, 2018) (eDocket Nos. [20185-142993-01](#); [20185-142993-02](#); [20185-142993-03](#); [20185-142993-04](#)).

⁵⁸ EA and Notice of Availability (May 23, 2018) (eDocket No. [20185-143273-01](#)).

⁵⁹ DOC-EERA Notice of EA Availability (May 25, 2018) (eDocket No. [20185-143469-01](#)).

⁶⁰ Notice of Public Hearing (May 17, 2018) (eDocket No. [20185-143158-01](#)).

⁶¹ Comment by MDNR (June 12, 2018) (eDocket No. [20186-143759-01](#)).

⁶² Direct Testimony of Dan Litchfield (May 24, 2018) (eDocket No. [20185-143327-02](#)) (hereinafter “Litchfield Direct”).

⁶³ Freeborn Wind Compliance Filing – Affidavit of Publication (May 25, 2018) (eDocket No. [20185-143338-01](#)).

~~40.~~41. On May 31, 2018 a public hearing was held in Albert Lea, Minnesota. The transcripts from the public hearing were filed on June 7, 2018.⁶⁴

~~41.~~42. On June 14, 2018, Freeborn Wind filed a request for an extension of the deadline for the filing of the Proposed Findings, Conclusions of Law, and Recommendations, and Freeborn Wind's Reply Comments. Freeborn Wind requested that the deadline be extended to June 18, 2018.⁶⁵ On June 15, 2018, Freeborn Wind filed a letter confirming that DOC-EERA was agreeable to such an extension.⁶⁶ The ALJ issued an order granting Freeborn Wind's request on June 15, 2018.⁶⁷

III. CERTIFICATE OF NEED

~~42.~~43. Minn. Stat. Section 216B.243, subd. 2 states that "no large energy facility" shall be sited or constructed in Minnesota without the issuance of a Certificate of Need by the Commission. The proposed Project is not classified as a "large energy facility" under Minn. Stat. §§ 216B.243 and 216B.2421, subd. 2(3). While the Project is an HVTL with a capacity of 100 kV or more, it is not more than 10 miles long in Minnesota and it does not cross a state line. Therefore, a Certificate of Need is not required for the Project.⁶⁸

IV. DESCRIPTION OF THE PROJECT

~~43.~~44. The proposed Project is an HVTL, as defined by Minn. Stat § 216E.01, subd. 4.⁶⁹

~~44.~~45. The Project includes approximately 7.0 miles of a new single circuit 161 kV HVTL needed to interconnect the proposed up to 200 megawatt ("MW") Freeborn Wind Farm located in Freeborn County, Minnesota and Worth County, Iowa.⁷⁰ The Minnesota portion of the Freeborn Wind Farm will consist of up to 84 MW and is under site permit review in MPUC Docket No. IP6946/WS-17-410.⁷¹

~~45.~~46. The Project will originate at the proposed Freeborn Wind Farm Substation ("Wind Farm Substation") to be located in Freeborn County, Minnesota and run northwest to end at the existing Glenworth Substation located just southeast of Glenville, Minnesota, which is the Point of Interconnection ("POI").⁷² Buried 34.5 kV collector lines from the proposed Freeborn Wind Farm will transmit electricity generated from the wind turbines to the Wind

⁶⁴ Public Hearing Transcript 5-31-2018 (June 7, 2018) (eDocket No. 20186-143636-01).

⁶⁵ Freeborn Wind Extension Request (June 14, 2018) (eDocket No. [20186-143852-01](#)).

⁶⁶ Freeborn Wind Letter Confirming EERA Agreement to Extension (June 15, 2018) (eDocket No. [20186-143889-01](#)).

⁶⁷ Order Granting Applicant's Request for Extension (June 15, 2018) (eDocket No. [20186-143890-01](#)).

⁶⁸ Application at 7.

⁶⁹ Minn. Stat. § 216E.01, subd. 4.

⁷⁰ Application at 1.

⁷¹ A new Freeborn Wind Farm, Wind Farm Substation and collector lines are included as part of the requested approval in the Site Permit Application for the Freeborn Wind Farm project. *In the Matter of the Application of Freeborn Wind Energy LLC for a Large Wind Energy Conversion System Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County*, MPUC Docket No. IP6946/WS-17-410.

⁷² Application at 1, 6.

Farm Substation.⁷³ The voltage will be increased from 34.5 kV to 161 kV at the Wind Farm Substation and power transmitted via the Project's aboveground 161 kV transmission line to the Glenworth Substation.⁷⁴ Freeborn Wind has a 200 MW interconnection queue position for the Freeborn Wind Farm.

~~46.47.~~ The 161 kV voltage was determined by Freeborn Wind, the Midcontinent Independent System Operator, Inc. ("MISO") and ITC Midwest LLC ("ITC") to be the appropriate voltage because it is connecting the Freeborn Wind Farm to the existing 161/69 kV Glenworth Substation. In addition, a 161 kV voltage more efficiently transmits energy than a lower voltage.⁷⁵

~~47.~~ The 161 kV line will be constructed using primarily wood, laminated wood, or steel poles with braced post insulators. The majority of the Project will consist of wood or laminated brace post poles.⁷⁶

~~48.~~ Transmission structures for the Teal, Orange, and Purple Parallel routes will typically range in height from 60 to 80 feet above ground.⁷⁷ The typical span between poles outside of substation locations will be approximately 550 to 900 feet.⁷⁸

~~49.~~ The proposed 161 kV transmission line will be constructed with T2-477 thousand circular mils ("kcmil") ACSR "Hawk" conductor which has a capacity of 265 MW at 161 kV or a conductor with comparable capacity with a phasing space of 11.0 feet.⁷⁹

~~50.~~ Depending upon soil conditions, Freeborn Wind proposes to use direct embedded poles for tangent structures. Rock filled culvert or concrete drilled pier foundations may be required in areas with poor soils. Dead end structures will be installed with concrete drilled pier foundations. Additionally, a cantilever design may be used in some locations with all davit arms and conductors installed on one side of the pole to allow a narrower ROW on the non-conductor side to allow the poles to be closer to the parcel boundary where adjacent landowners are not participating.⁸⁰

~~51.~~ The proposed 161 kV transmission line will be designed to meet or surpass all relevant local and state codes, North American Electric Reliability Corporation standards, the National Electric Safety Code ("NESC"), and Xcel Energy standards. Appropriate standards will be met for construction and installation, and applicable safety procedures will be followed during and after installation.⁸¹

⁷³Application at 8. The Freeborn Wind Farm Substation and associated collector lines are being permitted separately as part of the Freeborn Wind Farm Project, Site Permit Application, MPUC Docket No. IP6946/WS-17-410.

⁷⁴ Application at 8.

⁷⁵ Application at 8.

~~⁷⁶ Application at 16.~~

~~⁷⁷ Application at 19.~~

~~⁷⁸ Application at 16.~~

~~⁷⁹ Application at 16.~~

~~⁸⁰ Application at 16.~~

~~⁸¹ Application at 16.~~

- ~~52. The typical ROW width for the Project will be 80 feet (40 feet on either side of the centerline) and the typical span will be 550-900 feet.⁸² In one location, at the crossing of County Road 108/830th Avenue at one-quarter mile south of 120th Street, a narrowed ROW is proposed to maintain the ROW for the Project within land owned by participating landowners and within public road ROW where Freeborn Wind is seeking a utility permit from Freeborn County.⁸³~~
- ~~53. For the majority of the Project along the Teal Route, Freeborn Wind proposed a route width of 200 feet on each side of the centerline (400 feet total width), with expanded areas at the substations, and narrowed areas near three residential parcels, a communication tower, and along US 65.⁸⁴~~
- ~~54. Route widths along the Orange Route are restricted to the greatest extent possible to avoid non-participating landowners. Route widths vary from 225, 250, and 400 feet with wider route widths near substations.⁸⁵ Route widths vary from 250, 400, and 600 feet for the Purple Route.⁸⁶ Route widths vary from 400 to 600 feet along the Gold Route.⁸⁷~~

V. ROUTES EVALUATED⁸⁸

A. Routes Proposed by Freeborn Wind.

~~55:48.~~ The Project is located entirely within Shell Rock Township in Freeborn County, Minnesota.⁸⁹

~~56:49.~~ *Teal Route.* The route initially proposed by Freeborn Wind in its Application is referred to as the “Teal Route.” The Teal Route begins at the Wind Farm Substation at the southeast corner of the intersection of 110th Street and 840th Avenue in Shell Rock Township, Freeborn County, Minnesota, approximately seven miles southeast of the Glenworth Substation.⁹⁰ From the Wind Farm Substation, the Teal Route travels north and parallel along 840th Avenue, then turns west and crosses through agricultural land to west of 820th Avenue. The line then turns north and west crossing an existing 69 kV transmission line (“ITC Line”) owned by ITC. The Teal Route would follow the west side of the ITC Line north to 130th Street. The line then turns west and parallels 130th Street to the south for a distance then crosses to the north and follows the road until it reaches US 65. From there, it follows the east side of the highway north to the interconnection point at the existing Glenworth Substation owned by ITC.⁹¹ ~~The Teal Route was moved to the east side of US 65 to avoid impacts to the Shell Rock Wildlife Management Area (“WMA”) and sensitive~~

⁸² Application at 16.

⁸³ Application at 16-17.

⁸⁴ Application at 2.

⁸⁵ EA at 14.

⁸⁶ EA at 14.

⁸⁷ EA at 15.

⁸⁸ A map of the routes evaluated in the EA is included as Exhibit A.

⁸⁹ Application at 7.

⁹⁰ Application at 7.

⁹¹ See Application at 9-11; EA at 14.

~~natural features located on the west side of US 65, and avoids multiple crossings of US 65 and the UP railway.~~⁹²

~~57.50.~~ In developing the Teal Route, Freeborn Wind evaluated and rejected two alternate route segments and one alternative route.⁹³

~~58. — Orange Route. In response to comments at the scoping meeting that the route width should be located entirely on land owned by participating landowners, Freeborn Wind proposed a new route with the same alignment as the Teal Route, but with a narrower route width that avoids non-participants' land. That route is identified as the Orange Route. The Orange Route follows the same alignment as the Teal Route with route widths varying from 225, 250 and 400 feet.~~⁹⁴

B. Routes Proposed Through Public Participation.

~~59.51.~~ Several alternative route segments were introduced in the EA Scoping Decision:

1. ~~Orange Route~~Purple Route Segment.⁹⁵

~~52. —~~ In response to public comments at the scoping meeting that the route width should be located entirely on land owned by participating landowners, “EERA staff provided Freeborn Wind with a route alternative that also moves the route width to participating landowners’ property ... In response, Freeborn Wind suggested that an adapted EERA route replace the proposed route and be included in the scoping decision. Freeborn Wind proposed a reduced route width for a more precise route location and a slight expansion in the route width for the half-mile segment south of 130th Street to allow for potential co-location with the existing ITC Line, should the company be able to secure easement agreements to obtain adequate right-of-way.”⁹⁶ This route is identified as the Orange Route. The Orange Route follows the same alignment as the Teal Route with route widths varying from 225, 250, and 400 feet.⁹⁷

2. Purple Route Segment.⁹⁸

~~60.53.~~ The Purple Route Segment was proposed during scoping and follows an existing transmission line corridor.⁹⁹ The EA studied two possibilities for this route segment: running the proposed HVTL parallel to the existing ITC Line (paralleling) (“Purple Parallel”) or overbuilding the proposed HVTL above the ITC Line on new structures within the existing ITC ROW (overbuilding) (“Purple Overbuild”).¹⁰⁰ The Purple Route Segment

~~⁹² Application at 14.~~

~~⁹³ For additional detail on Freeborn Wind’s analysis of these alternatives, see Application at 14-15.~~

~~⁹⁴ Litchfield Direct at 5; see also EA at 14.~~

~~⁹⁵ The “Purple Route” refers to the Orange Route as modified by the Purple Route Segment.~~

~~⁹⁶ Scoping Summary at 6.~~

~~⁹⁷ Litchfield Direct at 5; see also EA at 14.~~

~~⁹⁸ The “Purple Route” refers to the Orange Route as modified by the Purple Route Segment.~~

~~⁹⁹ See EA at 14, 19.~~

~~¹⁰⁰ EA at 14. The “Purple Parallel Route” refers to the Orange Route as modified by the Purple Parallel Route Segment. The “Purple Overbuild Route” refers to the Orange Route as modified by the Purple Overbuild Route Segment. See EA at 100-101.~~

includes a small area of the route width of this route segment, located to the east of 810th Avenue crossing 130th Street, with two non-participating landowners,¹⁰¹ but the Purple Parallel routing option could be constructed entirely on participants' land.¹⁰²

~~61.54.~~ Traveling south to north, the Purple Route Segment breaks from the Teal/Orange route in the NE 1/4 of S28, T101, R20W where it continues west approximately 1,000 feet along field lines to the existing ITC Line. The route segment turns north and travels along the ITC Line for approximately one and one-quarter miles until it reaches 130th Street where it rejoins the Teal and Orange routes. Route widths vary from 250, 400, and 600 feet.¹⁰³ Constructing the Purple Overbuild Route south of 120th Street would cause some of the ROW to be on a non-participant's land. Overbuilding for the first half mile north of 120th could be done all on participating land. The remaining half mile towards 130th Street would require two new transmission easements.—~~For these reasons, Freeborn Wind does not support the Purple Overbuild Route.~~¹⁰⁴

3. Gold Route Segment.¹⁰⁵

~~62.55.~~ The Gold Route Segment was proposed during scoping and follows existing transmission line corridors.¹⁰⁶ The EA studied two possibilities for this route segment: running the proposed HVTL parallel to the existing ITC Line and Dairyland Power Cooperative double circuit 69 kV transmission line (“Dairyland Line”) (paralleling) (“Gold Parallel”) or overbuilding the proposed HVTL above the ITC and Dairyland Lines on new structures within existing ROW (overbuilding) (“Gold Overbuild”).¹⁰⁷

~~63.56.~~ Traveling south to north, the Gold Route Segment breaks from the Teal/Orange routes at 130th Street. It follows the ITC Line north until it reaches the existing Dairyland Line at the boundary of S21 and S16, T101, R20W. At this point it turns west and follows the Dairyland Line along 140th Street and River Road. The route segment crosses the Shell Rock River and rejoins the proposed route in the NW 1/4 of S17, T101, R20W south of the Glenworth Substation. Route widths vary from 400 to 600 feet.¹⁰⁸

VI. TRANSMISSION LINE STRUCTURE TYPES AND SPANS

~~64.57.~~ The proposed structures for the Project are wood, laminated wood, or steel poles with braced post insulators. Wood or laminated braced post poles are proposed to be used for the majority of the Project. Additionally, a cantilever design may be used in some locations with all davit arms and conductors installed on one side of the pole to allow a narrower

¹⁰¹ See EA, Map 6 (Landowner Participation – Map 2 of 3).

¹⁰² Pub. Hrg. Tr. at 13 (Litchfield).

¹⁰³ EA at 14.

¹⁰⁴ Freeborn Wind Reply Comments at 2 (June 18, 2018) (hereinafter “Freeborn Wind Reply Comments”).

¹⁰⁵ The “Gold Route” refers to the Orange Route as modified by the Gold Route Segment.

¹⁰⁶ See EA at 15.

¹⁰⁷ EA at 15. The “Gold Parallel Route” refers to the Orange Route as modified by the Gold Parallel Route Segment. The “Gold Overbuild Route” refers to the Orange Route as modified by the Gold Overbuild Route Segment. See EA at 100-101.

¹⁰⁸ EA at 15.

ROW on the non-conductor side to allow the poles to be closer to the parcel boundary where adjacent landowners are not participating.¹⁰⁹

~~65.~~58. Depending upon soil conditions, Freeborn Wind proposes to use direct embedded poles for tangent structures. Rock filled culvert or concrete drilled pier foundations may be required in areas with poor soils. Dead-end structures will be installed with concrete drilled pier foundations.¹¹⁰

~~66.~~59. The proposed 161 kV transmission line will be designed to meet or surpass all relevant local and state codes, North American Electric Reliability Corporation standards, the NESC, and Xcel Energy standards. Appropriate standards will be met for construction and installation, and applicable safety procedures will be followed during and after installation.¹¹¹

~~67.~~60. The standard alignment will be with delta-designed poles centered in the ROW, with 40 feet of ROW on each side of the centerline.¹¹² For the single-circuit 161 kV delta-designed poles, there will be two conductors on one side and one conductor on the other side, and a braced post structure TSP-161 structure type will be used.¹¹³

~~68.~~61. For certain segments, Freeborn Wind proposes to use a vertical configuration, with all conductors located on one side of the pole.¹¹⁴ This design is needed to create the correct approach angle for the segment of turn 2 to turn 3 that uses the 22-foot wide ROW across County Road 108/830th Avenue.¹¹⁵ For the single-circuit 161 kV vertical-designed poles, a braced post structure TSP-161 structure type will be used.¹¹⁶

~~69.~~62. Transmission structures for the Teal, Orange, Purple Parallel, and Gold Parallel routes will typically range from 60 to 80 feet above ground.¹¹⁷ Overbuild structures will be 85 to 90 feet tall along the Purple Route and, along the Gold Route, be 90 to 95 feet over ground and 120 to 125 feet over water.¹¹⁸ The typical span between poles outside of substation locations will be approximately 550 to 900 feet.¹¹⁹

VII. TRANSMISSION LINE CONDUCTORS

~~70.~~63. The proposed 161 kV transmission line will be constructed with T2 477 kcmil aluminum conductor steel-supported (“ACSR”) “Hawk” conductor which has a capacity of 265 MW at 161 kV or a conductor with comparable capacity with a phasing space of 11.0 feet.¹²⁰

¹⁰⁹ Application at 16.

¹¹⁰ Application at 16.

¹¹¹ Application at 16.

¹¹² Application at 16.

¹¹³ Application at 19.

¹¹⁴ Application at 16.

¹¹⁵ Application at 16-17.

¹¹⁶ Application at 19.

¹¹⁷ [Application at 16.](#)

¹¹⁸ [EA at 20.](#)

¹¹⁹ Application at 16.

¹²⁰ Application at 16.

VIII. TRANSMISSION LINE ROUTE WIDTHS

~~71.64.~~ Along the Teal Route, the area of the Project route width is approximately 344.8 acres and the area of the ROW is approximately 64.1 acres.¹²¹

~~72.65.~~ For the majority of the Teal Route, Freeborn Wind requested a route width of 200 feet on each side of the proposed transmission line route centerline (400 feet total width) with expanded areas at the substations, and narrowed areas near three residential parcels, a communication tower, and along US 65.¹²² ~~The proposed ROW for the Project (generally 80 feet), would be located entirely on land owned by participants in the Project.~~ The route width for the Teal Route would include non-participant parcels.¹²³

~~73.66.~~ Route widths along the Orange Route would avoid non-participating landowners.¹²⁴ Route widths along the Orange Route vary from 225, 250, and 400 feet with wider route widths near substations.¹²⁵

~~74.67.~~ Route widths vary from 250, 400, and 600 feet for the Purple Route.¹²⁶ The Purple Route includes a small area with two non-participating landowners,¹²⁷ but the Purple Parallel routing option could be constructed entirely on participants' land.¹²⁸

~~75.68.~~ Route widths along the Gold Route vary from 400 to 600 feet.¹²⁹

~~76.69.~~ Freeborn Wind is requesting approval of different route widths depending on the existing land uses of the adjacent properties. Freeborn Wind requested an expanded route width at the substations and narrowed route width near three residential parcels, a communication tower, and along US 65. Freeborn Wind requests a varying route width extending up to 292 feet from the Glenworth Substation parcel boundary, and a route width of 200 feet off of the Wind Farm Substation site boundary.¹³⁰

IX. TRANSMISSION LINE RIGHT-OF-WAY

~~77.70.~~ The entire length of the proposed Project will require new ROW.¹³¹

~~78.71.~~ The typical ROW width for the Project will be 80 feet (40 feet on either side of the transmission line centerline) and the typical span will be 550- 900 feet.¹³²

¹²¹ Application at 16.

¹²² Litchfield Direct at 4; Application at 12.

~~¹²³ Litchfield Direct at 4.~~

¹²⁴ Litchfield Direct at 5.

¹²⁵ EA at 14.

¹²⁶ EA at 14.

¹²⁷ See EA, Map 6 (Landowner Participation – Map 2 of 3).

¹²⁸ Pub. Hrg. Tr. at 13 (Litchfield).

¹²⁹ EA at 15.

¹³⁰ Application at 12.

¹³¹ Application at 16.

¹³² Application at 16.

~~79.~~72. ROW will be centered over the anticipated alignment when conductors are on both sides of a structure (40 feet on either side). The ROW will be staggered over the anticipated alignment when conductors are on one side of the structure only (30 feet on the non-conductor side and 50 feet on the conductor side). Freeborn Wind anticipates the ROW along the Teal and Orange routes would abut existing ITC Line or Dairyland Line ROW but not overlap.¹³³

~~80.~~73. In one location, at the crossing of County Road 108/830th Avenue at one-quarter mile south of 120th Street, a narrowed ROW is proposed to maintain the ROW for the Project within land owned by participating landowners and within public road ROW where Freeborn Wind is seeking a utility permit from Freeborn County. A vertical design with a 22-foot ROW will be used on this single, short span.¹³⁴ Freeborn Wind engineers developed a design in this limited area that can be operated in a 22-foot ROW, which is within the 66-foot wide County Road 108 ROW. To ensure adequate clearances, Freeborn Wind proposes a special design using two dead-end structures. The two poles will be located 123 feet apart and the 22-foot ROW would apply only to the area between the two poles. The area needed for construction will be contained on the participating landowners' parcels. The existing distribution line will be buried in this location. Freeborn Wind continues to talk with adjacent landowners and Freeborn County and may propose to change the design and alignment if a voluntary easement is obtained or to meet Freeborn County requirements.¹³⁵ When the proposed line is parallel to a roadway Freeborn Wind does not intend to locate structures within road ROW, poles will ~~generally~~ be placed within the private ROW adjacent to the roadway ROW.¹³⁶

X. PROJECT SCHEDULE

~~81.~~74. In the Application, the anticipated construction start date was May 2020 with commercial operations of the Freeborn Wind Farm and transmission line commencing in December 2020.¹³⁷

~~82.~~75. Xcel Energy has advised that it intends to advance the construction timetable and commence civil construction of the transmission line in the early fall of 2019 with construction completion in late 2019, and commercial operations of the Freeborn Wind Farm still commencing in the fourth quarter of 2020. The commercial operations date will be dependent on several factors including weather, permitting, and other development activities. This construction schedule applies to the Orange Route or the Purple Parallel Route. A different schedule would apply to other route alternatives.¹³⁸

¹³³ EA at 15.

¹³⁴ Application at 17.

¹³⁵ Application at 17.

¹³⁶ ~~EA at 53~~ Application at 17.

¹³⁷ Application at 9.

¹³⁸ Litchfield Direct at 4.

XI. PROJECT COSTS

[83.76.](#) Total Project costs are estimated to be approximately \$3.8-8.05 million, depending on which route option is approved and a variety of other factors, including timing of construction, cost of materials, and labor.¹³⁹ Total costs are summarized below in Table 1:¹⁴⁰

Table 1 – Estimated Project Costs

Item(s)	Teal	Orange	Purple Overbuild Option*	Purple Parallel Option*	Gold Overbuild Option*	Gold Parallel Option*
Land acquisition and permitting	\$400,000	\$400,000	\$450,000	\$450,000	\$550,000	\$550,000
Design, procurement, and construction	\$3,000,000	\$3,000,000	\$3,500,000	\$3,000,000	\$7,100,000	\$3,200,000
Post-construction close-out and permit compliance	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Total	\$3,800,000	\$3,800,000	\$4,350,000	\$3,850,000	\$8,050,000	\$4,150,000

* Total includes the cost to construct the entire HVTL; not simply the route segment.

[84.77.](#) Operating and maintenance costs after construction of the transmission line will be nominal for several years because the line will be new and minimal initial vegetation management is required. The anticipated annual operating and maintenance costs for the 161 kV transmission line is approximately \$1,500 per mile. The principal operating and maintenance costs include inspections which are typically ground-based and occasionally done by aerial inspections, generally on a yearly basis.¹⁴¹

XII. PERMITTEE

[85.78.](#) The permittee for the Project is Freeborn Wind Energy LLC.¹⁴² [Freeborn Wind is currently owned by Invenergy, LLC. Should the Commission issue a route permit for the project Freeborn Wind will be transferred from Invenergy to Xcel Energy.](#)¹⁴³

¹³⁹ EA at 22 and Application at 9.

¹⁴⁰ EA at 22.

¹⁴¹ Application at 9.

¹⁴² Application at 1; Litchfield Direct at 3.

¹⁴³ [Application at 5, 6.](#)

XIII. SUMMARY OF PUBLIC COMMENTS ~~AND FREEBORN WIND RESPONSES~~

A. Public Comments ~~and Freeborn Wind Reponses.~~

~~86:79.~~ Approximately 60 members of the public attended the public hearing held in Albert Lea, Minnesota. Approximately 20 people spoke at the public hearing.¹⁴⁴ Approximately 25 comments were received during the public comment period.

~~87:80.~~ Members of the public, including some participating landowners, voiced their support for the Project at the public hearing or through written comments. They described the benefits the Project would bring to the community, such as tax revenue from the Freeborn Wind Farm that would be enabled by the Project, jobs, economic development, stable, reliable income for landowners, and the growth of clean, sustainable energy sources.¹⁴⁵ ~~Freeborn Wind agrees with these comments.~~

~~88:81.~~ Multiple commenters requested that a determination on the Route Permit be delayed until the Commission makes a final determination on the Freeborn Wind Farm Site Permit (MPUC Docket No. IP-6946/WS-17-410).¹⁴⁶ ~~Freeborn Wind argues that such a delay is neither warranted nor necessary because the Site Permit docket is a separate proceeding on which the Commission has not rendered a decision; such a request is outside the scope of this proceeding; the Route Permit can be determined independently of the Site Permit; and the Commission can determine the timing of its decisions.~~¹⁴⁷

~~89:82.~~ Concerns about impacts to non-participating landowners were expressed at the public hearing and through public comment. For example, several commenters objected to the Gold Route due to its impact on non-participants.¹⁴⁸

~~Freeborn Wind has stated that it does not support the Gold Route because impacts along the Gold routing options are unavoidable and will be long term and significant, and the Gold Route has the most impacts relating to noise, recreation, and land use and zoning. Freeborn Wind also states that the Gold Route would affect non-participants such as those who spoke in opposition to the Gold Route at the public hearing.~~¹⁴⁹ ~~Similarly, Freeborn Wind states that it does not support the Purple Overbuild Route because it would require constructing the Project on non-participants' land.~~¹⁵⁰

¹⁴⁴ See Pub. Hrg. Tr.

¹⁴⁵ See, e.g., Pub. Hrg. Tr. at 13-15 (Hammersly); Pub. Hrg. Tr. at 36-41 (Rauenhorst); Pub. Hrg. Tr. at 18-19 (Kramer); Comment by Lioba Forman (June 12, 2018) (eDocket No. [20186-143755-01](#)); Comment by O'Connor (June 4, 2018) (eDocket No. [20186-143559-01](#)); Comment by Valerie Wolff Cipra and Clark Cipra (May 23, 2018) (eDocket No. [20185-143283-01](#)); Public Comment Batch 1 (June 13, 2018) (eDocket No. [20186-143782-01](#)) (Don Burns, John Forman, Devonlee Haugebak, Mark Haugebak, Glen Mathiason, Winnebago-Worth Counties Betterment Council, Jennifer Vogt-Erickson); Public Comment (June 13, 2018) (eDocket No. [20186-143803-01](#)).

¹⁴⁶ See, e.g., Comment by Clark Ericksen (June 1, 2018) (eDocket No. [20186-143500-01](#)); Comment by Dorene Hansen (June 1, 2018) (eDocket No. [20186-143501-01](#)); Public Hrg. Tr. at 15 (Olson).

¹⁴⁷ ~~See Freeborn Wind Reply Comments at 5-6. The ALJ agrees that no delay is warranted.~~

¹⁴⁸ See, e.g., Pub. Hrg. Tr. at 31-32 (Sherry Adams); 42 (Brad Nelson); 49-50 (Clark Ericksen); 64 (Travis Jacobsen).

¹⁴⁹ ~~See Freeborn Wind Reply Comments at 2, 7-8.~~

¹⁵⁰ ~~See Freeborn Wind Reply Comments at 2.~~

~~90.83.~~ Concerns about land rights were expressed at the public hearing and through public comment. For example, one commenter argued that Freeborn Wind has not acquired sufficient property rights to construct the Project.¹⁵¹

~~91.~~ ~~Freeborn Wind stated in testimony and at the public hearing, as well as in its Reply Comments, that it has, through voluntary agreements and engineering design, obtained the private real estate rights necessary to construct the Project within the Orange Route and the Purple Parallel Route.¹⁵² Freeborn Wind states that prior to construction it will coordinate with the applicable local and state road jurisdictional authorities to obtain the necessary permits for road access and public road ROW use. For example, Freeborn Wind states that it is seeking a utility permit from Freeborn County for the crossing of County Road 108/830th Avenue at one quarter mile south of 120th Street, where Freeborn Wind has proposed a narrowed ROW to maintain the ROW for the Project within land owned by participating landowners and within public road ROW.¹⁵³ Freeborn Wind states that it has had multiple constructive discussions with Freeborn County Staff and Shell Rock Township officials, and is confident a thorough Three Part Agreement will be reached that will address issues related to utility permits for use of public ROW as well as repair and maintenance of public road and drainage infrastructure.¹⁵⁴~~

~~Freeborn Wind also noted in its Reply Comments that a small portion of the Purple Route, illustrated on Map 6 of the EA (Landowner Participation—Map 2 of 3), shows that a small corner of the Purple Route crosses non-participating land. Freeborn Wind has stated that it would construct the line on ROW belonging to participating landowners.¹⁵⁵ Freeborn Wind has stated that if the Commission approves the Purple Parallel Route, Freeborn Wind would be agreeable to a revision to the route to “clip” the corner to match the Orange Route at the corner of 130th Street between 810th Avenue and 820th Avenue, so that the entire route is contained on participating land.¹⁵⁶~~

~~92.84.~~ A related concern was raised regarding private versus public interests relative to eminent domain and the construction of infrastructure servicing a private entity.¹⁵⁷ ~~Issues of eminent domain are outside the scope of a Route Permit proceeding.¹⁵⁸~~

~~93.85.~~ Comments were submitted expressing concern about potential environmental and wildlife impacts.¹⁵⁹ Some public comments expressed concern that eagles will be adversely

¹⁵¹ Comment by Dorenne Hansen (June 1, 2018) (eDocket No. [20186-143501-03](#)).

¹⁵² ~~See Freeborn Wind Reply Comments at 6-7; Litchfield Direct at 5; Pub. Hrg. Tr. at 13 (Litchfield).~~

¹⁵³ ~~See Freeborn Wind Reply Comments at 8; Application at 17.~~

¹⁵⁴ ~~See Freeborn Wind Reply Comments at 8.~~

¹⁵⁵ ~~See Freeborn Wind Reply Comments at 7.~~

¹⁵⁶ ~~See Freeborn Wind Reply Comments at 7. On that same map, Freeborn Wind also notes that the parcel immediately south of that corner of the Purple Route is shown as a participating landowner. That landowner has signed a Good Neighbor Agreement but has not granted rights for any transmission line facilities to be located on the property. See Freeborn Wind Reply Comments at 7.~~

¹⁵⁷ *See, e.g.*, Comment by Tim Westrum (June 12, 2018) (eDocket No. [20186-143754-01](#)).

¹⁵⁸ ~~EA at 12.~~

¹⁵⁹ *See, e.g.*, Pub. Hrg. Tr. at 33 (Hansen); Pub. Hrg. Tr. at 43-44 (Richter); Comment by Linda Herman (June 12, 2018) (eDocket No. [20186-143740-01](#)).

impacted by the Freeborn Wind Farm and Transmission Line.¹⁶⁰ Public comments asserted that there were additional eagle nests in the Project area.¹⁶¹ Additionally, some commenters referenced reports of confirmed eagle deaths in Decorah, Iowa due to electrocution from transmission lines.¹⁶²

~~94. Freeborn Wind states that it has conducted thorough avian use studies and raptor nest surveys and designed the Project to minimize impacts to eagle and other avian species.¹⁶³ Freeborn Wind performed two additional reviews of the site to investigate the alleged eagle nests asserted in public comments and none were identified.¹⁶⁴ Freeborn Wind states that it already investigated and addressed all of the eagle nest locations asserted in public comments and that there are no raptor nests or bald eagle nests within the transmission line route; the closest bald eagle nest is located approximately 0.3 miles west of the Orange Route centerline along the Shell Rock River, approximately 130 feet from an existing 161 kV transmission line.¹⁶⁵~~

~~95. Freeborn Wind also states that the Transmission Line will be constructed in accordance with Avian Power Line Interaction Committee (“APLIC”) standards, which are designed to minimize the impacts to avian species and prevent avian electrocutions.¹⁶⁶ Freeborn Wind states that a transmission line designed to APLIC standards, such as the Project, will have substantially less risk to avian species.¹⁶⁷~~

~~96.86. In response to concerns expressed in public comments about electrocution risk, Freeborn Wind submitted its transmission line specifications to Western EcoSystems Technology’s (“WEST”) power line Program Manager to evaluate the design of the Project. As an attachment to its Reply Comments, Freeborn Wind provided the results of WEST’s assessment, confirming that the Project is designed in accordance with APLIC standards.¹⁶⁸ The WEST Report concluded that based on the design and size of the 161 kV transmission structures proposed to support the Project, no bald eagle electrocution risk would apply since at risk structures for eagle perching typically involve distribution or sub-transmission lines with voltages of 69 kV or less, such as the line voltage involved in the 2014 electrocution of one of the Decorah, Iowa bald eagle fledglings.¹⁶⁹ In addition, Freeborn~~

¹⁶⁰ See, e.g., Pub. Hrg. Tr. at 33 (Hansen); Pub. Hrg. Tr. at 43-44 (Richter); Comment by Linda Herman (June 12, 2018) (eDocket No. [20186-143740-01](#)).

¹⁶¹ See Comments by Dorene Hansen (June 1, 2018) (eDocket Nos. [20186-143501-01](#); [20186-143501-02](#); [20186-143501-03](#)).

¹⁶² See, e.g., Comment by Dorene Hansen (June 1, 2018) (eDocket No. [20186-143501-01](#)).

¹⁶³ Freeborn Wind Reply Comments at 12.

¹⁶⁴ See Freeborn Wind Reply Comments at 9-10; see also Freeborn Wind Reply Comments, Attachment C (Giampoli Direct Testimony and Schedules 6, 7, 8).

¹⁶⁵ Freeborn Wind Reply Comments at 12. As an example, Freeborn Wind references the nest Ms. Hansen claims is located between a proposed Freeborn Wind Farm turbine and the Project (to the west of 840th Avenue and north of 110th Street in Glenville, Minnesota), which Freeborn Wind investigated and found to be a small, inactive raptor nest, not an eagle nest. *Id.* at 12.

¹⁶⁶ See Freeborn Wind Reply Comments at 10-11 and Attachment B (WEST Electroecution Risk Review).

¹⁶⁷ See Freeborn Wind Reply Comments at 10 and Attachment B (WEST Electroecution Risk Review).

¹⁶⁸ See Freeborn Wind Reply Comments, Attachment B (WEST Electroecution Risk Review).

¹⁶⁹ See Freeborn Wind Reply Comments, Attachment B at 4 (WEST Electroecution Risk Review).

~~Wind states that adverse avian impacts such as occurred in Decorah, Iowa are the result of lines that have not been constructed to APLIC standards.¹⁷⁰~~

~~97.87. Public comments raised concerns about the potential impacts to bats, including assertions about the risk of collision and electrocution.¹⁷¹ Commenters referenced risks from wind turbines as a basis for concern regarding bat collisions and electrocution. Freeborn Wind states that it fully addressed this concern in the Site Permit docket and that these commenters presented no credible support for their assertions relating to bat electrocution and collisions.¹⁷² Further, Freeborn Wind states that it has taken numerous measures, as outlined in the Application, EA, and Draft Avian and Bat Protection Plan, to minimize the risk of fatalities to birds and bats.¹⁷³~~

~~98.88. Some public commenters expressed concern about impacts on habitat, aesthetics, and recreation along the Shell Rock River.¹⁷⁴~~

~~99. Freeborn Wind states that the Project will not have a significant impact on habitat along the Shell Rock River crossing because the HVTL would be located adjacent to an existing ROW near the Shell Rock River meaning these effects would largely be limited to one side of the ROW and would not create newly fragmented areas.¹⁷⁵ Additionally, as requested by the MDNR, Freeborn Wind states that it will install bird diverters on the span of its transmission line that will cross the Shell Rock River, which will minimize risk to swans and other waterfowl.¹⁷⁶~~

~~100. Freeborn Wind states that although the river crossing is unavoidable, the Orange Route best minimizes impacts to recreation at the river crossing, while the Gold Route has the most impacts relating to recreation and its impacts cannot be minimized as well as other routing options.¹⁷⁷ Freeborn Wind also notes that crossing the Shell Rock River along the Gold Route would require additional clearances achieved through either increasing the ROW width or decreasing the span length, and larger overbuild structures.¹⁷⁸~~

~~101.89. Some commenters expressed concern about impacts to wildlife habitat, including the potential disruption of interior forest dwellers.¹⁷⁹~~

~~102. Freeborn Wind states that because a majority of the Project area is classified as developed or cultivated cropland, no impacts to interior forest dwellers are anticipated and any impacts to wildlife habitat will be limited to areas near the Shell Rock River, and quality~~

~~¹⁷⁰ See Freeborn Wind Reply Comments at 10.~~

~~¹⁷¹ See, e.g., Comment by Linda Herman (June 12, 2018) (eDocket No. [20186-143740-01](#)).~~

~~¹⁷² See Freeborn Wind Reply Comments at 21.~~

~~¹⁷³ See Freeborn Wind Reply Comments at 21; Application at 51-52 and Appendix F (Draft ABPP).~~

~~¹⁷⁴ Comment by Stephanie Richter (June 1, 2018) (eDocket No. [20186-143507-01](#)).~~

~~¹⁷⁵ See Freeborn Wind Reply Comments at 11.~~

~~¹⁷⁶ See Freeborn Wind Reply Comments at 11.~~

~~¹⁷⁷ See Freeborn Wind Reply Comments at 12.~~

~~¹⁷⁸ See Freeborn Wind Reply Comments at 12; see EA at 20-21.~~

~~¹⁷⁹ See Comment by Dorene Hansen (June 1, 2018) (eDocket No. [20186-143501-01](#)); Comment by AFCL (June 12, 2018) (eDocket No. 20186-143756-01).~~

~~habitat conversion will be minimal given the proximity to US 65.¹⁸⁰ Freeborn Wind also states that it will implement the minimization measures recommended by MDNR along the Shell Rock River crossing. Additionally, Freeborn Wind has stated that construction impacts to trees and woodlands will be minimized because the Project area is primarily agricultural, and any tree-clearing activity will be minimized.¹⁸¹~~

~~103.90.~~A concern was raised in public comment about wetland and water quality impacts.¹⁸²

~~104.—Freeborn Wind states that it does not propose to build any wind turbines in wetlands and believes that the transmission line poles can be sited outside of wetlands.¹⁸³ Freeborn Wind states that it is conducting a detailed in-field wetland delineation study and report and will propose final pole placement after incorporating this information and getting an approved route from the Commission. Freeborn Wind also states that the Project will comply with its Stormwater Pollution Prevention Plan and that if it is impossible to avoid wetlands, Freeborn Wind will work with applicable regulatory authorities to obtain any necessary permits that govern the construction techniques in these areas.¹⁸⁴~~

~~105.91.~~One commenter at the public hearing requested a property value guarantee.¹⁸⁵ ~~Freeborn Wind states that the record does not support this request and references the EA's thorough discussion of peer-reviewed literature and conclusion that any impacts to property values are anticipated to be minimal.¹⁸⁶~~

~~106.92.~~Public comments raised concerns about karst in the Project area.¹⁸⁷

~~107.—Freeborn Wind states that, in addition to DOC EERA's determination that no karst features or areas were identified within the route width of any routing option, Freeborn Wind conducted a geotechnical evaluation to evaluate the likelihood of karst in the proposed turbine locations in the Freeborn Wind Farm docket.¹⁸⁸ Freeborn Wind provided the results of this evaluation as Attachment E to its Reply Comments. Freeborn Wind states that this evaluation confirms there is no karst bedrock within 50 feet of the soil surface and that the proposed turbine locations would not impact any karst areas, and that while the evaluation focused on the proposed turbine locations, based on the data presented by the geotechnical evaluation and MDNR information, it can be concluded that the Transmission Line is not likely to impact karst.¹⁸⁹ Additionally, Freeborn Wind has stated that it will conduct a~~

¹⁸⁰ ~~See Freeborn Wind Reply Comments at 13, 21.~~

¹⁸¹ ~~See Freeborn Wind Reply Comments at 13.~~

¹⁸² Comment by Dorene Hansen (June 1, 2018) (eDocket No. [20186-143501-01](#)).

¹⁸³ ~~See Freeborn Wind Reply Comments at 13.~~

¹⁸⁴ ~~See Freeborn Wind Reply Comments at 13-14; Application at 48.~~

¹⁸⁵ Pub. Hrg. Tr. at 60 (Van Pelt).

¹⁸⁶ ~~See Freeborn Wind Reply Comments at 18.~~

¹⁸⁷ *See, e.g.*, Comment by Kathy Nelson (June 12, 2018) (eDocket No. [20186-143734-01](#)); Comment by Allie Olson (June 12, 2018) (eDocket No. [20186-143739-01](#)).

¹⁸⁸ ~~See Freeborn Wind Reply Comments at 19.~~

¹⁸⁹ ~~See Freeborn Wind Reply Comments at 19-20.~~

~~geotechnical investigation for the transmission line structure locations when a route is determined.¹⁹⁰~~

~~108.93. Public comments raised concerns that “leaching” from concrete used for structure foundations may cause surface and groundwater impacts.¹⁹¹~~

~~109.—Freeborn Wind states that cured (hardened) concrete does not leach chemicals and leaching of concrete would only be a concern (if at all) prior to setting and hardening of the concrete, meaning that cured (hardened) concrete does not leach chemicals.¹⁹² Freeborn Wind states that dewatering would only be necessary if bentonite slurry cannot be utilized to create a seal against groundwater.¹⁹³ If dewatering is required, Freeborn Wind states that it will implement dewatering strategies to prevent potential contamination from the portion of uncured concrete that comes into contact with the soil. Freeborn Wind also notes that the concrete mix used for the Project follows the building code requirements for concrete exposure and thus is very similar to any exterior concrete in constant contact with the ground, such as foundations for houses, barns, offices, and sidewalks. Additionally, the chemical properties of the groundwater are investigated during the subsurface investigation, and if the groundwater is determined to be acidic or potentially corrosive to concrete (which could potentially cause leaching) the concrete would be designed with a chemically resistant mix design to increase the concrete durability and resistance to chemical attack. Freeborn Wind has committed to working with the MPCA if dewatering is required.¹⁹⁴~~

~~110.94. AFCL raised concerns about the Allied Radio Matrix for Emergency Response (“ARMER”) System.¹⁹⁵ Freeborn Wind refers to the conclusion of the Statewide Maintenance and Operations Manager with MnDOT’s Office of Statewide Radio Communications that “MnDOT has no concerns with the new transmission line affecting the ARMER system.”¹⁹⁶ Freeborn Wind states that there is no evidence supporting AFCL’s assertion that MnDOT’s determination is insufficient by itself.¹⁹⁷~~

~~111.95. Carol Overland, attorney for the AFCL, asked about the Project’s interconnection queue positions at the Public Hearing and raised the issue in a public comment.¹⁹⁸ Ms. Overland has pointed to the one reference in Xcel Energy’s filings that mention a Project size of 150 MW, which Freeborn Wind explains was in error.¹⁹⁹ These concerns are related to the Freeborn Wind Farm, not the transmission line.~~

~~¹⁹⁰ See Freeborn Wind Reply Comments at 20.~~

~~¹⁹¹ See, e.g., Comment by Kathy Nelson (June 12, 2018) (eDocket No. [20186-143734-01](#)).~~

~~¹⁹² See Freeborn Wind Reply Comments at 20.~~

~~¹⁹³ See Freeborn Wind Reply Comments at 20; EA at Appendix C, Information Inquiry #3.~~

~~¹⁹⁴ See Freeborn Wind Reply Comments at 20.~~

~~¹⁹⁵ Comment by AFCL at 11 (June 12, 2018) (eDocket No. 20186-143756-01).~~

~~¹⁹⁶ See Freeborn Wind Reply Comments at 22; EA at 34.~~

~~¹⁹⁷ See Freeborn Wind Reply Comments at 22.~~

~~¹⁹⁸ See, e.g., Pub. Hrg. Tr. at 22 (Overland).~~

~~¹⁹⁹ See Freeborn Wind Reply Comments at 16.~~

~~112. Freeborn Wind states in its Reply Comments that Freeborn Wind owns two interconnection queue positions associated with the Project: J407 for 200 MW and J885 for 64 MW.²⁰⁰ Freeborn Wind explained that the first queue position, J407, was filed for study by MISO on November 14, 2014. Freeborn Wind states the desired point of interconnection was initially the Hayward Substation but was moved to the Glenworth Substation due to increased wildlife activity observed near the Hayward substation, which is much closer to Albert Lea Lake. This queue position has completed its study and Freeborn Wind has executed a Large Generator Interconnection Agreement with MISO and the transmission owner, ITC Midwest. Freeborn Wind states that it filed a new queue position, J885, that would allow for a potential 64 MW expansion of the Project solely in Worth County and that would connect to the grid via the Wind Farm's Project substation.²⁰¹~~

B. Local Government and State Agency Participation.

~~113.96. During scoping, MnDOT submitted a comment requesting that the EA assess the placement of the proposed utility poles in relation to US 65. MnDOT noted that Freeborn Wind would need to submit a Utility Accommodation on Trunk Highway Right-of-Way (Form 2525) if the Commission approved a route permit that would place the HVTL in an area that occupies a portion of MnDOT ROW. Additionally, MnDOT requested that Freeborn Wind coordinate any route construction work or delivery of materials that may affect MnDOT ROW.²⁰² Freeborn Wind has stated that it will submit the required form and coordinate with MnDOT as requested.²⁰³~~

~~114.97. On April 24, 2018, Freeborn Wind filed a copy of an email received from Lisa Joyal, Endangered Species Review Coordinator at the MDNR, regarding Freeborn Wind's Natural Heritage Information System Data Request Form for the Project. The email states that it serves as a concurrence for the rare features assessment in the Commission Route Permit Application and can be used in lieu of a formal Natural Heritage Letter.²⁰⁴~~

~~115.98. On June 12, 2018, MDNR submitted comments. MDNR recommended that Freeborn Wind install bird diverters on the span of its transmission line that will cross the Shell Rock River in order to minimize risk to swans and other waterfowl.²⁰⁵ Pursuant to the Route Permit, Freeborn Wind will comply with this recommendation.²⁰⁶~~

~~116.99. MDNR also recommended that the "wire/border zone method" be applied at the crossing of Shell Rock River and its associated floodplain/wetlands.²⁰⁷ The wire/border zone method allows for different types and heights of vegetation based on whether the vegetation~~

²⁰⁰ See Freeborn Wind Reply Comments at 15-16.

²⁰¹ See Freeborn Wind Reply Comments at 16.

²⁰² Comment by MnDOT (Jan. 3, 2018) (eDocket No. [20181-138602-01](#)).

²⁰³ Litchfield Direct at 8.

²⁰⁴ Freeborn Wind Comments – MDNR National Heritage Concurrence (April 24, 2018) (eDocket No. [20184-142258-02](#)).

²⁰⁵ See Comment by MDNR (June 12, 2018) (eDocket No. [20186-143759-01](#)).

²⁰⁶ Generic Route Permit Template at Condition 5.3.15; See Freeborn Wind Reply Comments at 11.

²⁰⁷ Comment by MDNR (June 12, 2018) (eDocket No. [20186-143759-01](#)).

is directly underneath the conductor (wire zone) or elsewhere in the ROW (border zone).²⁰⁸
~~Freeborn Wind will comply with this recommendation.~~²⁰⁹

FACTORS FOR A ROUTE PERMIT

~~117.~~100. The PPSA, Minnesota Statutes Chapter 216E, requires that route permit determinations “be guided by the state’s goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state’s electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.”²¹⁰

~~118.~~101. Under the PPSA, the Commission and the ALJ 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;²¹¹
- (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;

²⁰⁸ EA at 86.

~~²⁰⁹ See Freeborn Wind Reply Comments at 11.~~

²¹⁰ Minn. Stat. § 216E.03, Subd. 7.

²¹¹ Factor 4 is not applicable because Freeborn Wind is not proposing to site a large electric generating plant in this docket.

- (6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;
- (7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivision 1 and 2;
- (8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;
- (9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- (10) evaluation of future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;
- (11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and
- (12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.²¹²

~~119.~~102. 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 [C]ommission must state the reasons.”

~~120.~~103. 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;

²¹² Minn. Stat. § 216E.03, Subd. 7.

- D. effects on archaeological and historic resources;
- E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- F. effects on rare and unique natural resources;
- G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;²¹³
- 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.²¹⁴

~~121.104.~~ There is sufficient evidence on the record for the ALJ to assess the Orange Route and Purple Parallel Route (Freeborn Wind’s Proposed Routes) using the criteria and factors set forth above.

APPLICATION OF STATUTORY AND RULE FACTORS

I. APPLICATION OF ROUTING FACTORS TO THE DIFFERENT ROUTING OPTIONS ~~ORANGE AND PURPLE PARALLEL ROUTES AND ROUTE ALTERNATIVES~~

A. Effects on Human Settlement.

~~122.105.~~ Minnesota law requires consideration of the Project’s effects on human settlement, including displacement of residences and businesses; noise created during construction and

²¹³ This factor is not applicable because it applies only to power plant siting.

²¹⁴ Minn. R. 7850.4100.

by operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.²¹⁵

1. Displacement.

~~123.106.~~ No displacement of homes or buildings along any routing option will occur as a result of the Project. No residences are within the ROW of any routing option.²¹⁶

~~124.~~ The Teal Route has 0 residences within the route width; 2 residences within 400 feet of the alignment; 6 residences within 800 feet of the alignment; and 13 residences within the local vicinity of the route.²¹⁷

~~125.~~ The Orange Route has 0 residences within the route width; 2 residences within 400 feet of the alignment; 6 residences within 800 feet of the alignment; and 13 residences within the local vicinity of the route.²¹⁸

~~126.~~ The Purple Route has 0 residences within the route width; 0 residences within 400 feet of the alignment, 3 residences within 800 feet of the alignment, and 4 residences within the local vicinity of the route.²¹⁹

~~127.~~ The Gold Overbuild Route has 3 residences within the route width; 5 residences within 400 feet of the alignment, 7 residences within 800 feet of the alignment, and 10 residences within the local vicinity of the route.²²⁰

~~128.~~ The Gold Parallel Route has 3 residences within the route width; 4 residences within 400 feet of the alignment, 7 residences within 800 feet of the alignment, and 10 residences within the local vicinity of the route.²²¹

~~129.~~ The record evidence demonstrates that the Orange and Purple Parallel routes will not result in displacement, and that the Gold routing options are the only routes with residences located within the route width. In addition, the Gold routing options have the greatest number of residences within 800 feet of the alignment.²²²

2. Land Use and Zoning.

~~130.107.~~ Under Minn. Stat. § 216E.10, subd. 1, a route permit from the Commission preempts all zoning, building and land use rules, regulations, and ordinances promulgated by regional, county, and local governments.²²³

²¹⁵ See Minn. Stat. § 216E.03, Subd. 7(b); Minn. R. 7850.4100(A).

²¹⁶ EA at 27, 102.

~~²¹⁷ EA at 29. The EA defines “local vicinity” as 1,600 feet. EA at 24.~~

~~²¹⁸ EA at 29.~~

~~²¹⁹ EA at 29.~~

~~²²⁰ EA at 29.~~

~~²²¹ EA at 29.~~

~~²²² EA at 29.~~

²²³ Minn. Stat. § 216E.10, subd. 1; EA at 34.

~~131.108.~~ All routing options are located within Freeborn County’s Agricultural District.²²⁴ The Teal, Orange, and Gold routing options intersect the Floodway and Flood Fringe Districts.²²⁵ HVTs are not precluded in any of these districts.²²⁶

~~132.109.~~ The Gold Route would have the most impact on non-participating landowners because it would require placing the Project on non-participants’ land. Impacts to non-participating landowners along the Gold routing options are unavoidable, and will be long-term and significant.²²⁷

~~133.110.~~ The Purple Overbuild Route would also require constructing the Project on non-participants’ land.²²⁸

~~134.111.~~ ~~In contrast, the~~ The Teal, Orange Route, and Purple Parallel Route routes have the least impact on non-participating landowners. ~~because~~ Freeborn Wind has, through voluntary agreements, obtained the rights necessary to construct the Project along the Teal, Orange, Route and the Purple Parallel Routeroutes entirely on participants’ land except for a road crossing associated with 830 Avenue.²²⁹ Freeborn Wind is seeking a utility permit from Freeborn County for this road crossing to keep the transmission line entirely within participating landowner property or public ROW.²³⁰

3. Noise.

~~135.112.~~ The MPCA has established standards for the regulation of noise levels.²³¹ The most restrictive Noise Area Classification (“NAC”) is for residences at 60 A-weighted decibels (“dBA”) L_{50-one hour} and 65 dBA L_{10-one hour} during the daytime and 50 dBA L_{50-one hour} and 55 dBA L_{10-one hour} during the nighttime.²³²

~~136.113.~~ The Project is in a rural area. Ambient noise levels in these locations are generally between 30 and 40 dBA during daytime hours.²³³ ~~The maximum calculated noise level during operation of the Project is anticipated not to exceed these noise levels.~~²³⁴

~~137.~~ Freeborn Wind predicted operational noise levels along the edges of the transmission line ROW, as well as at the residences located near the ROW. All measurements along all routing options were compliant with the Minnesota Noise Standards.²³⁵

²²⁴ EA at 34.

²²⁵ EA at 35.

²²⁶ EA at 35.

²²⁷ See EA at 34, 36.

²²⁸ Freeborn Wind Reply Comments at 2.

²²⁹ See Litchfield Direct at 5 and Pub. Hrg. Tr. at 13 (Litchfield).

²³⁰ See Freeborn Wind Reply Comments at 8 ~~Litchfield Direct at 5 and Pub. Hrg. Tr. at 13 (Litchfield).~~

²³¹ See Minn. R. Ch. 7030.

²³² Minn. R. 7030.0040, subp. 2.

²³³ EA at 37.

~~²³⁴ EA at 38; Application at 36; Freeborn Wind Reply Comments, Attachment D (May 2, 2018 Hankard Environmental Letter).~~

²³⁵ Application at 36; Freeborn Wind Reply Comments, Attachment D (May 2, 2018 Hankard Environmental Letter).

~~137.114.~~ During construction of the Project, intermittent ~~and infrequent~~ noise from construction vehicles and equipment will occur in the Project area specific to the particular construction activity.²³⁶ Construction activities for the Project will generate noise similar to agriculture land use activities such as farm equipment and vehicles.²³⁷

~~138.115.~~ At the public hearing, ~~DOC-EERA staff Mr. Andrew Levi from the Minnesota Department of Commerce~~ provided a technical correction to the EA which stated that construction noise might exceed state noise standards.²³⁸ Should any such exceedance of noise standards occur, it would be short-term and confined to daytime hours, ~~but did not produce any evidence supporting this statement.~~²³⁹ Due to the proximity with residences, the likelihood of an exceedance is greatest along the Gold routing options.²⁴⁰ ~~However, the evidence in the record demonstrates that noise levels during construction will comply with all applicable Minnesota Noise Standards.~~²⁴¹

~~139.116.~~ ~~The record demonstrates that~~ Freeborn Wind has committed to take ~~taken~~ steps to ~~avoid and minimize impacts from Project-related noise~~ comply with all applicable Minnesota noise standards.²⁴² For example, noise from intermittent and infrequent construction activities will be mitigated by the distance of the activity from a receptor (e.g., construction activities will not be near residences, farmsteads, etc.), using sound control devices on vehicles and equipment, conducting construction activities during day light hours as much as possible during normal business hours, and not running vehicles and equipment when not needed.²⁴³

4. Aesthetics.

~~140.117.~~ The existing environment is rural open space. Agricultural row crop fields and wooded farmsteads dominate the project area. The Shell Rock River in the northwest provides a contrasting riparian landscape. Built features within one mile of the different routing alternatives include numerous residences and outbuildings, agricultural buildings, an auto salvage yard, a drainage ditch, U.S. Highway 65, other paved and gravel roads, electric transmission and distribution lines, the Glenworth Substation, and a communications tower (according to aeronautical charts the tower is 234 feet tall). ~~The~~

²³⁶ ~~Application at 36~~ EA at 37.

²³⁷ Application at 36.

²³⁸ EA at 37; *see also* Pub. Hrg. Tr. at 12 (Levi: So right above Table 6 there in that paragraph titled Construction, it says that: Potential impacts are anticipated to be short-term and not exceed state noise standards. What it should say is what it says in the last paragraph of that page that says: Construction noise might exceed state noise standards.).

²³⁹ ~~Pub. Hrg. Tr. at 12 (Levi). The EA states that any such exceedance of noise standards would be short term and confined to daytime hours.~~ EA at 37.

²⁴⁰ *See* EA at 29 (outlining the number of residences within certain distances of the different routing options); EA at 37 (stating a 90 dBA at 50 feet is perceived as a 72 dBA sound at 400 feet); EA at 37 (a L₁₀ noise standard of 65 dBA exists at NAC 1 receptors).

²⁴¹ ~~See Application at 34-36; Freeborn Wind Reply Comments, Attachment D (May 2, 2018 Hankard Environmental Letter).~~

²⁴² Freeborn Reply Comments at 17.

²⁴³ Application at 36.

landscape in the Project area is primarily agricultural cropland with associated farmsteads and rural residences.²⁴⁴

~~141.118.~~ The Project is consistent with the existing utility infrastructure in the area. There are electric transmission/distribution lines and the Glenworth Substation located in the Project area, as well as a tall communication towers ~~and grain legs on grain storage bins.~~²⁴⁵ ~~A~~The 234-foot communications tower dominates the viewshed.²⁴⁶ All routing options follow existing infrastructure for a portion of their length.²⁴⁷ Therefore, while the Project will introduce new built features—structures and conductors—on the landscape, the Project is generally consistent with ~~the~~ existing utilities on the landscape.²⁴⁸

~~142.119.~~ Aesthetic impacts along the Teal, Orange, and Gold ~~Overbuild~~ routes are anticipated to be moderate.²⁴⁹ Impacts along the Purple routing options and ~~the Gold Parallel Route~~ are anticipated to be minimal~~moderate.~~²⁵⁰

120. Aesthetic impacts are associated with residents viewing the HVTL from their homes, residents traveling in the project area, recreationalists along the Shell Rock River, and nonresidents traveling through the project area. Residents and recreationalists generally have a higher sensitivity to potential aesthetic impacts than temporary observers.²⁵¹

~~143.121.~~ As illustrated on Table 1 below, the record evidence demonstrates that the Gold Route will have the greatest impact on aesthetics at residences. The Gold routing options are the only options with residences located within the route width. In addition, the Gold routing options impact the greatest number of residences located within 400 and 800 feet of the alignment. In contrast, no residences are located within the route width of the Teal, Orange, or Purple routes.²⁵²

Table 1 – Distance of Residences from Anticipated Alignment

Route or Route Segment	Route Width	400 Feet	800 feet	Local Vicinity (1,600 feet)
Teal	0	2	6	13
Orange	0	2	6	13
Gold Overbuild	3	5	7	10
Gold Parallel	3	4	7	10
Purple (both)	0	0	3	4

²⁴⁴ ~~Application at 37~~EA at 26.

²⁴⁵ ~~Application at 37~~EA at 26.

²⁴⁶ EA at 28.

²⁴⁷ EA at 28.

²⁴⁸ See EA at 28; Application at 37.

²⁴⁹ EA at 28.

²⁵⁰ Pub. Hrg. Tr. at 11 (Levi).

²⁵¹ EA at 28.

²⁵² See EA at 29 (Table 5). The EA defines “local vicinity” as 1,600 feet. EA at 24.

~~144. The record demonstrates that the overbuild options would have greater aesthetic impacts than the other options. While overbuilding the HVTL with existing transmission lines will reduce the number of structures on the landscape, once constructed the structures will be taller and more obtrusive visually. Construction necessitates use of a shoo-fly line if overbuilding, which would create similar visual impacts to the other routing options during construction.²⁵³ Overbuild structures along the ITC Line would be about 85 to 90 feet tall, and structures along the Dairyland Line would be about 90 to 95 feet tall over ground and 120 to 125 feet tall at the Shell Rock River crossing.²⁵⁴ These overbuild structures are larger and more visually disruptive than the approximately 60 to 80-foot tall structures required for the other routing options.²⁵⁵~~

~~145. The Gold Overbuild Route would involve greater aesthetic impacts than any other route option. The Gold Overbuild structures along the ITC Line would be approximately 85 to 90 feet tall, and structures along the Dairyland Line would be approximately 90 to 95 feet tall over ground and 120 to 125 feet tall at the Shell Rock River crossing.²⁵⁶ These structures are larger than those required for the other options.²⁵⁷~~

~~146. The record demonstrates that the Orange Route and Purple Parallel Route would involve less aesthetic impacts than the Purple Overbuild Route. The Orange and Purple Parallel routes would involve smaller structures and therefore lesser aesthetic impacts.²⁵⁸ Structures for the Orange and Purple Parallel routes would be approximately 60 to 80 feet tall,²⁵⁹ while Purple Overbuild structures would be approximately 85 to 90 feet tall.²⁶⁰~~

~~122. There are no unmitigated aesthetic impacts to t~~The four residences located along the Orange Route that are within 1,600 feet of the proposed Freeborn Wind Farm and the Transmission Line ~~as discussed in the cumulative impacts section.~~ ~~All four of these residences~~ are participants in the Project.²⁶¹ ~~These landowners will be y signed up for the Project and its aesthetic impacts and are~~ compensated under their ~~respective~~ easement agreements.²⁶² ~~Additionally, all of t~~These homes have some form of shelter belt of trees around their properties that will minimize or eliminate the view of turbines and/or the Project.²⁶³

~~147.123. An existing distribution line follows the north side of 130th Street. The proposed centerline of the Teal and Orange routes follows the south side of 130th at this location.²⁶⁴ “Routing power lines on both sides of 130th Street ... is avoidable with prudent routing.~~

²⁵³ EA at 29.

²⁵⁴ See EA at 20.

²⁵⁵ See EA at 20; Application at 37.

²⁵⁶ See EA at 20.

²⁵⁷ See EA at 2, 20, 29; Application at 37.

²⁵⁸ See Application at 37.

²⁵⁹ See Application at 37.

²⁶⁰ See EA at 20.

²⁶¹ See Freeborn Wind Reply Comments at 18-19; EA at 89.

²⁶² Litchfield Direct at 7; Freeborn Wind Reply Comments at 18-19.

²⁶³ See Freeborn Wind Reply Comments at 18-19.

²⁶⁴ EA at 30.

Crossing 130th Avenue [sic] near the communications tower and following the north side of 130th Street would require burying or underbuilding the existing distribution line, but would eliminate power lines on both sides of the road and the long, extended crossing currently proposed.”²⁶⁵

~~148.~~124. Crossing the Shell Rock River is unavoidable. The Orange and Teal routes best minimize impacts at that crossing. The Teal and Orange routes cross the Shell Rock River adjacent to US 65, at a location previously impacted by highway and railway bridges and another transmission line crossing. Structures will only be slightly taller than the existing ITC Line.²⁶⁶ In contrast, the Gold Parallel Route option crosses adjacent to the existing Dairyland Line, which extends the existing transmission line crossing horizontally and may draw more attention to the crossing. While the Gold Overbuild option would not introduce a new feature once constructed, the new structure would be larger and taller vertically than the existing Dairyland Line. Additionally, crossing the Shell Rock River along the Gold Route would require additional clearances achieved through either increasing the ROW width or decreasing the span length, and larger overbuild structures.²⁶⁷

5. Cultural Values.

~~149.~~ Construction of the Project is not anticipated to conflict with the cultural values along any of the routing options, as the community’s cultural values remain intact despite the presence of other previously constructed transmission lines and infrastructure facilities in the Project area.²⁶⁸

~~150.~~125. The Project is not anticipated to impact or alter the work and leisure pursuits of residents in the Project area or land use in such a way as to impact the underlying culture of the area.²⁶⁹ ~~Additionally, the presence of the Project will not significantly impact the agricultural land use or general character or cultural values of the area. As demonstrated by other transmission projects in the Midwest, agricultural practices continue throughout construction and operations.~~²⁷⁰

6. Recreation.

~~151.~~126. The Project is located in a relatively rural area. The main land use within the Project area is agriculture (field crops and pastures) and tourist attractions are not associated with the predominant agricultural use of the land.²⁷¹ Outdoor recreational opportunities in the Project area include hiking, biking, boating, fishing, camping, swimming, cross country skiing, snowmobiling, hunting, and nature viewing.²⁷²

²⁶⁵ EA at 30.

²⁶⁶ EA at 28, 29.

²⁶⁷ See EA at 20, 28, 29-30.

~~²⁶⁸ Application at 39.~~

²⁶⁹ EA at 32.

~~²⁷⁰ See Application at 39.~~

²⁷¹ Application at 44.

²⁷² EA at 41.

~~152.~~127. There are no WMAs, Aquatic Management Areas (“AMA”), Sites of Biodiversity Significance, or Scientific and Natural Areas (“SNA”); or United States Fish & Wildlife Service (“USFWS”) Waterfowl Production Areas (“WPA”) within the route width of any routing option.²⁷³

~~153.~~128. The Cedar River State Water Trail is located approximately 9.3 miles east of the Project.²⁷⁴ Due to this distance, no impacts to the Cedar River State Water Trail are anticipated.²⁷⁵

~~154.~~129. There are two WMAs located within five miles of the Project. The Project is within 1,600 feet of the Shell Rock WMA; however, it is located on the opposite side of US 65 from the Project.²⁷⁶ The Panicum WMA is located approximately 2.1 miles southwest of the Project.²⁷⁷

~~155.~~130. The Project intersects the Shell Rock River State Water Trail.²⁷⁸ ~~However, the Project will not impact the trail once constructed.~~ Temporary construction impacts would be limited to short-term closure of the water trail in this section while stringing between the two structures spanning the Shell Rock River occurs as a safety measure. Freeborn Wind has committed to coordinating with the MDNR to schedule this work.²⁷⁹ New built features (structures) will be introduced near, but not within, the Shell Rock River Water Trail; however, conductors will span the water trail.²⁸⁰

~~156.~~131. A designated snowmobile trail travels north-south between 830th and 840th Avenues. The trail intersects the ROW of the Teal and Orange routes prior to reaching the Purple or Gold route segments. A second snowmobile trail crosses US 65 at the existing Glenworth Substation, and skirts the extreme northwest portion of the common route width. Both snowmobile trails would be impacted equally regardless of which routing option is selected.²⁸¹ Poles will not be located within the snowmobile trail and therefore no impacts are anticipated.²⁸² Additionally, snowmobile trails cross or follow existing built features; therefore, the proposed HVTL is consistent with visitor expectations in this area.²⁸³

~~157.~~132. There are no other MDNR classified lands, such as State forests, State parks, State trails, AMAs, or SNAs; federal parks, forests, or refuges; or county parks within the local vicinity of the Project.²⁸⁴

²⁷³ EA at 83.

²⁷⁴ Application at 40.

²⁷⁵ Application at 41.

²⁷⁶ EA at 41.

²⁷⁷ Application at 39.

²⁷⁸ EA at 41.

²⁷⁹ Application at 40.

²⁸⁰ EA at 41.

²⁸¹ EA at 42.

²⁸² See EA at 41; Application at 40.

²⁸³ EA at 42.

²⁸⁴ EA at 41.

~~158.~~133. The record demonstrates that impacts to recreational resources will be minimal. New built features (structures) will be introduced near, but not within, the Shell Rock River Water Trail, the Shell Rock River WMA, and existing snowmobile trails. Conductors will span the water and snowmobile trail, but not the WMA, se resources. ~~And while some~~ ~~Visual~~ and noise impacts may occur during construction, the Project would not impede recreational activities, such as snowmobiling, canoeing, kayaking, or fishing once the transmission line is in service.²⁸⁵

134. The Teal and Orange routes would cross the Shell Rock River adjacent to US 65. The presence of the highway and railway bridges adjacent to the Teal and Orange routes would likely focus recreationalist's attention on passing traffic or trains as opposed to the HVTL. The river crossing is unavoidable, but the overall impact intensity level is anticipated to be minimal.²⁸⁶

~~159.~~135. The Gold routing options would cross the Shell Rock River adjacent to the existing Dairyland Line. The river crossing is unavoidable and cannot be minimized as well as the Teal and Orange routing options. The overall impact intensity level is anticipated to be moderate.²⁸⁷

~~160.~~136. As discussed above, Shell Rock River crossing is unavoidable. However, the crossing along the Orange and Teal routes best minimize impacts, ~~and impacts from crossing along the Gold Route cannot be minimized as well as other routing options.~~²⁸⁸

7. Socioeconomics.

~~161.~~137. Impacts to socioeconomics are anticipated to be minimal and positive for all routing options.²⁸⁹ The Project will not disrupt local communities or businesses and does not disproportionately impact low-income or minority populations. Adverse impacts are not anticipated.²⁹⁰

~~162.~~138. The Project will result in both short- and long-term positive socioeconomic impacts to the local community. There will be short-term positive impacts to communities near the Project area as a result of construction activity and an influx of contractor employees during construction of the various projects. Positive economic impacts include increased expenditures; for example, the use of the hotels, restaurants, and other services by the various workers at local businesses during construction.²⁹¹ Construction of the Project will generate up to 30 temporary jobs at any given time over an approximately six-month period.²⁹² It is unknown if these will be local jobs.²⁹³ Utility personnel or contractors will

²⁸⁵ EA at 41.

²⁸⁶ EA at 42.

²⁸⁷ EA at 42.

²⁸⁸ See, e.g., EA at 29, 41, 42;

²⁸⁹ EA at 43.

²⁹⁰ EA at 43, 44.

²⁹¹ EA at 43; Application at 38-39.

²⁹² EA at 43; Application at 38.

²⁹³ EA at page 43.

be used for all construction activities.²⁹⁴ Additionally, materials such as utility poles and concrete may be purchased from local vendors depending on availability, and terms and conditions.²⁹⁵ Long-term beneficial impacts from the Project include increased tax revenue from the Wind Farm that would be enabled by the Project.²⁹⁶

8. Property Values.

~~163.~~139. While the research indicates that property value impacts vary, the majority conclude that HVTLs have “no significant impact or a slight negative impact on residential properties.”²⁹⁷

~~164.~~140. The EA provides a thorough discussion of peer-reviewed literature that demonstrates that any impacts to property values are anticipated to be minimal.²⁹⁸ The use of multiple regression statistical analysis is generally accepted as the current professional and academic standard for evaluating potential property value impacts, as it reflects the actual behavior of property buyers and sellers in terms of recorded sales prices, while controlling for other factors. This type of analysis allows researchers to identify “revealed preferences” or what people actually did, in contrast to survey research, which identifies what people say they would do. This type of research requires large data sets; therefore, it is less subjective and more reliable than paired sales studies. The results are often reported as an average change over a number of properties; however, the effect to individual properties can vary widely.²⁹⁹

~~165.~~141. The results of these studies can be summarized, generally, as follows:

- Over time, there is a consistent pattern with about half of the studies finding negative property value effects and half finding none.
- When effects have been found, they tend to be small; almost always less than 10 percent and usually in the range of three percent to six percent.
- Where effects are found, they decay rapidly as distance to the lines increases and usually disappear at about 200 feet to 300 feet.
- Two studies investigating the behavior of the effect over time find that, where there are effects, they tended to dissipate over time.³⁰⁰

142. Potential impacts to property values within the local vicinity could occur; however, specific changes to a property’s value are difficult to determine. On whole, impacts are anticipated

²⁹⁴ Application at 38.

²⁹⁵ EA at 43 and Application at 38.

²⁹⁶ Application at 38-39.

²⁹⁷ EA at 38.

²⁹⁸ See EA at 38-40.

²⁹⁹ EA at 39-40.

³⁰⁰ EA at 40.

to be negative but minimal. However, impacts to specific properties within the route width could be moderate.³⁰¹

~~166.~~143. There is no evidence in the record that shows a property value guarantee is warranted for the Project.

B. Effects on Public Health and Safety.

~~167.~~144. Minnesota routing factors require consideration of the Project's potential effect on health and safety.³⁰²

~~168.~~145. There is no indication that any significant impact on human health and safety will arise from the Project.³⁰³

1. Construction and Operation of Facilities.

~~169.~~146. The Project will be designed in compliance with local, state, NESC, and Xcel Energy standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, and ROW widths.³⁰⁴

~~170.~~147. Construction crews and/or contract crews will comply with local, state, NESC, and Xcel Energy standards regarding installation of facilities and standard construction practices. Established Xcel Energy and industry safety procedures will be followed during and after installation of the transmission lines. This will include clear signage during all construction activities.³⁰⁵

~~171.~~148. The proposed transmission lines will be equipped with protective devices to safeguard the public from the transmission lines if an accident occurs, such as a structure or conductor falling to the ground. The protective devices include breakers and relays located where the line connects to the substation(s). The substations are fenced and contain a locking gate for access. The protective equipment will de-energize the line should such an event occur. Proper signage will be posted warning the public of the risk of coming into contact with energized equipment.³⁰⁶

~~172.~~149. The record demonstrates that construction and operation of the Project along any of the routing options will not impact public safety.

³⁰¹ EA at 38.

³⁰² Minn. Stat. § 216E.03, Subd. 7(b)(1); Minn. R. 7850.4100(B).

³⁰³ See, e.g., EA at 44-49.

³⁰⁴ Application at 32.

³⁰⁵ Application at 32-33.

³⁰⁶ Application at 33.

2. Electric and Magnetic Fields (“EMFs”).

~~173.~~150. EMFs are invisible forces that result from the presence of electricity. EMF occurs naturally and is caused by weather or the geomagnetic field. EMFs are also caused by all electrical devices and are found wherever people use electricity.³⁰⁷

~~174.~~151. Electric field strength is measured in kilovolts per meter (“kV/m”). Magnetic field strength is measured in milliGauss (“mG”). The strength of electric and magnetic fields decrease rapidly as the distance from the source increases.³⁰⁸

~~175.~~152. There are no federal standards for transmission line electric fields.³⁰⁹ 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. It has not adopted a standard for magnetic fields.³¹⁰

~~176.~~153. The calculated maximum electric field for the Project directly underneath the transmission line is less than the maximum limit of 8 kV/m prescribed by the Commission.³¹¹

~~177.~~154. The calculated maximum electric field strength directly underneath the proposed transmission line is 3.32 kV/m. This field strength is below the 5.0 kV/m interaction level for modern, bipolar pacemakers, and although it has the potential to impact older, unipolar pacemakers directly underneath the HVTL, moving away from the HVTL centerline would return the pacemaker to normal operation and the regular presence of implantable medical devices is not expected. Additionally, there are no sensitive receptors such as hospitals or nursing homes located within the route width of any routing option; however, three residences are within the route width of the Gold routing options. Therefore, impacts to implantable medical devices and persons using these devices are not expected to occur.³¹²

~~178.~~155. Magnetic fields may interfere with implantable electromechanical medical devices, such as pacemakers, defibrillators, neurostimulators, and insulin pumps.³¹³ However, interference from magnetic fields in pacemakers is not observed until 2,000 mG—a field strength greater than that associated with transmission lines.³¹⁴

~~179.~~156. The record evidence demonstrates that no cause and effect relationship has been shown between EMF and adverse health effects.³¹⁵ No adverse impacts due to EMF are anticipated as a result of the Project.³¹⁶

³⁰⁷ EA at 44.

³⁰⁸ EA at 44.

³⁰⁹ EA at 46.

³¹⁰ EA at 47.

³¹¹ See EA at 47-48.

³¹² EA at 49.

³¹³ EA at 48.

³¹⁴ EA at 48-49.

³¹⁵ EA at 45-46.

³¹⁶ See EA at 45-46, 47.

3. Stray Voltage.

~~180.~~157. Stray voltage is “voltage caused by an electric current in the earth, or in groundwater, resulting from the grounding of electrical equipment or an electrical distribution system.”³¹⁷ Stray voltage encompasses two phenomena: neutral-to-earth voltage (“NEV”) and induced voltage. NEV is a type of stray voltage that can occur where distribution lines enter structures.³¹⁸

~~181.~~158. The record demonstrates that no NEV voltage impacts are anticipated as a result of the Project. Transmission lines do not create NEV stray voltage as they do not directly connect to businesses, residences, or farms. Additionally, the proposed HVTL does not interconnect to businesses or residences within any routing option, and does not change local electrical service.³¹⁹

~~182.~~159. Impacts due to induced voltage are not anticipated to occur, and any potential impacts from stray voltage are avoided or minimized by Commission permit requirements.³²⁰ The Commission requires that transmission lines be constructed and operated to meet the standards established by the NESC as well as the Commission’s electric field limit of 8 kV/m.³²¹

C. Public Service and Infrastructure.

~~183.~~160. Public services supporting rural residences and farmsteads within the Project area include transportation/roadways, electric, and telephone/telecommunications. The largest city proximal to the Project area is the City of Albert Lea located approximately five miles west of the northwestern corner of the Project. The city has its own police and fire departments. Three additional cities are located near the Project area. Other cities with similar services provided by Freeborn County within five miles of the Project area include Glenville, Hayward, and Myrtle.³²²

~~184.~~161. The Project is expected to have minimal effect on existing services and infrastructure of the area. Construction and operation of the Project will be in accordance with associated federal, state, and local permits and laws, as well as industry construction and operation standards and best practices. The Project is designed to have manageable temporary effects on the existing infrastructure during Project construction and operation. Only minor impacts are anticipated.³²³

³¹⁷ EA at 50.

³¹⁸ EA at 50.

³¹⁹ EA at 50.

³²⁰ EA at 51; *see, e.g.*, Generic Route Permit Template at §§ 5.4.1, 5.4.2, 5.5.1

³²¹ EA at 51.

³²² Application at 41.

³²³ *See* EA at 52-55; Application at 41.

1. Emergency Services.

~~185.~~162. Emergency services in the Project area are provided by multiple entities—fire service by Glenville and Myrtle Fire Departments; ambulance service by Gold Cross Ambulance; and law enforcement by Freeborn County Sheriff.³²⁴

~~186.~~163. The overall impact to emergency services for all routing options will be negligible. Impacts to emergency communications are not anticipated and impacts to emergency response, if they occur, are anticipated to be minimal.³²⁵ For example, any required temporary lane closures would be coordinated and closure protocols established with the local jurisdictions, and would provide for safe access of police, fire, and other rescue vehicles through alternate routes.³²⁶

~~187.~~164. Impacts to the ARMER System are not anticipated. The Statewide Maintenance and Operations Manager with MnDOT’s Office of Statewide Radio Communications reviewed the scoping summary and concluded that “MnDOT has no concerns with the new transmission line affecting the ARMER system.”³²⁷

2. Utilities.

~~188.~~165. Impacts to utilities for all routing options will be minimal. Impacts are anticipated to be limited to electrical and telephone outages.³²⁸

~~189.~~166. The Project area is not serviced by city water supply or sanitary sewer; these services are provided by individual wells and septic systems. The record evidence demonstrates that impacts to wells and septic systems will not occur.³²⁹

~~190.~~167. Freeborn-Mower Cooperative Services provides electrical service in the Project area and distribution lines are located throughout. Several planned outages on local distribution lines would be necessary to construct the HVTL regardless of the routing option selected. Outages on existing ~~power~~ transmission lines would be necessary to construct the Gold and Purple overbuild options.³³⁰ However, outages will not be necessary at perpendicular crossings because Freeborn Wind will use temporary protective guards or clearance structures. Clearances associated with existing power lines will be code compliant. No long-term impacts are anticipated.³³¹

~~191.~~168. No natural gas pipelines are located in the Project area. Therefore, impacts will not occur.³³²

³²⁴ EA at 52.

³²⁵ EA at 52.

³²⁶ Application at 41.

³²⁷ EA at 34.

³²⁸ EA at 54.

³²⁹ EA at 53, 54.

³³⁰ EA at 54-55.

³³¹ EA at 55.

³³² EA at 55.

~~192.169.~~ Fiber optic and telephone cables exist in the Project area. ~~However, f~~Fiber optic cables are outside the anticipated ROW of all routing options. Telephone outages, if they occur, would be localized and long-term impacts are not anticipated.³³³

3. Transportation.

~~193.170.~~ Impacts to roads and highways are expected to be minimal along all routing options.³³⁴

~~194.171.~~ Freeborn Wind has committed to develop structure placement and construction procedures in consultation with state, county, and local roadway authorities to meet requirements for clear zones and roadside obstructions.³³⁵

~~195.172.~~ During construction short-term localized traffic delays and re-routes might occur. Delays will likely be associated with material delivery and worker transportation. Road crossings might also necessitate short-term impacts to traffic when stringing conductors. Freeborn Wind does not intend to locate structures within road ROW, though HVTL ROW might overlap with road ROW. Should this occur, it is unlikely to affect the safety of the traveling public or road/highway operations.³³⁶

~~196.173.~~ Prior to construction, Freeborn Wind will coordinate with the applicable local and state road jurisdictional authorities to obtain the necessary permits for road access and public road ROW use.³³⁷ For example, Freeborn Wind is seeking a utility permit from Freeborn County for the crossing of County Road 108/830th Avenue at one-quarter mile south of 120th Street, where Freeborn Wind has proposed a narrowed ROW in order to maintain the ROW for the Project within land owned by participating landowners and within public road ROW.³³⁸ Freeborn Wind has had multiple constructive discussions with Freeborn County Staff and Shell Rock Township officials, and is confident a thorough Three Part Agreement will be reached that will address all of these issues.³³⁹

~~197.174.~~ The Federal Aviation Administration (“FAA”) and MnDOT have each established development guidelines on the proximity of tall structures to public use airports. The FAA has also developed guidelines for the proximity of structures to Very-High-Frequency Omni-Directional Range navigation systems. A structure is considered to pose an adverse effect upon visual flight rules air navigation if its height is greater than 500 feet tall and within two miles of any regularly used visual flight rules route.³⁴⁰

³³³ See EA at 54-55.

³³⁴ EA at 52.

³³⁵ EA at 53.

³³⁶ EA at 53.

³³⁷ See EA at 52-53; Comment by MnDOT (Jan. 3, 2018) (eDocket No. 20181-138602-01); Litchfield Direct at 8; Application at 62.

³³⁸ Application at 17.

³³⁹ See Freeborn Wind Reply Comments at 8.

³⁴⁰ Application at 42. Freeborn Wind notes that it has received determinations of no hazard from the FAA for turbine locations in the Freeborn Wind Farm. Freeborn Wind Reply Comments at 6 and Attachment A (Exemplar FAA Determination of No Hazard for the Freeborn Wind Farm turbines).

~~198.~~175. The Project's transmission structures will be less than 100 feet tall. Additionally, the closest airports to the Project are the Albert Lea Municipal Airport and the Austin Municipal Airport in Minnesota, and the Northwood Municipal Airport (5D2) in Iowa. These airports are approximately 9, 15.5, and 4 miles from the Project.³⁴¹ Accordingly, construction and operation of the Project will not impact safe operation and use of the airport and impacts to airports or airport operations are not expected to occur.³⁴²

4. Electronic Interference.

~~199.~~176. Power lines have potential to interfere with the normal operation of electronic devices such as radio and television. Impacts from electronic interference are anticipated to be minimal for all routing options.³⁴³

~~200.~~177. Potential impacts to radio frequencies might occur in the AM frequency range directly underneath the conductors or in close proximity to them within the ROW. Interference is not expected in the FM frequency range.³⁴⁴ Additionally, impacts to radio frequencies can be avoided by increasing the distance between the receiver and the HVTL or by increasing signal strength through antenna modifications.³⁴⁵ Additionally, if interference does occur, Freeborn Wind will resolve the interference as it committed to do in the Application and as it will be required to do in accordance with the Route Permit.³⁴⁶

~~201.~~178. No residences are within the route width of the Teal, Orange, or Purple routing options; therefore, impacts to television signals along these route options are not anticipated. In contrast, three residences are within the route width of the Gold Route, although impacts are not anticipated. Use of different antennas or satellite dishes, or adjusting the locations of antennas will typically resolve any impacts to television signals.³⁴⁷ If interference does occur, Freeborn Wind will resolve the interference as it committed to do in the Application and as it will be required to do in accordance with the Route Permit.³⁴⁸

~~202.~~179. Impacts to wireless internet and cellular phone signals are not anticipated to occur for any routing option.³⁴⁹

~~203.~~180. Impacts are anticipated to be limited to temporary electrical and telephone outages. Electrical outages along the Teal and Orange routes will be short term and localized; outages necessary for the Gold and Purple overbuild options might extend beyond the Project area. Telephone outages, if they occur, would be localized. Potential impacts can be minimized.³⁵⁰ In situations where an HVTL does cause electronic interference,

³⁴¹ EA at 26.

³⁴² See EA at 26.

³⁴³ EA at 32.

³⁴⁴ EA at 33.

³⁴⁵ EA at 34.

³⁴⁶ Application at 37; Generic Route Permit Template at Condition 5.4.3; EA at 34.

³⁴⁷ EA at 34.

³⁴⁸ Application at 37; Generic Route Permit Template at Condition 5.4.3; EA at 34.

³⁴⁹ EA at 34.

³⁵⁰ EA at 54.

Commission route permits require permittees to take actions which are feasible to restore or provide reception equivalent to reception levels before construction of the HVTL.³⁵¹

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

~~204.~~181. Minnesota's HVTL routing factors require consideration of the Project's impacts to land-based economies, specifically agriculture, forestry, tourism, and mining.³⁵²

1. Agriculture.

~~205.~~182. Land use within the Project area is primarily agricultural. Cultivated cropland constitutes the majority of land within each of the route widths of the different routing options.³⁵³

~~206.~~183. The permanent impacts to agricultural lands will be limited to the structure foundations and is estimated to be approximately 0.25 acres.³⁵⁴

~~207.~~184. The record demonstrates that the Project will not significantly impact agricultural operations. Agricultural land within a transmission line ROW is generally available for agricultural production and use for pasture land.³⁵⁵ Further, participants are compensated for the placement of the Project on an ongoing basis, and Freeborn Wind will compensate landowners for any damage to crops, soil compaction, fences, and drain tiles due to construction of the Project pursuant to the terms of the easement agreements.³⁵⁶ Freeborn Wind has stated that it will place structures along field edges so as to minimize impacts to farming operations.³⁵⁷ Additionally, to minimize loss of farmland and to ensure reasonable access to the land near the poles, Freeborn Wind stated that it intends to place the poles outside of the public roadway ROWs and as close as practicable to them.³⁵⁸ Freeborn Wind also stated that, if possible, it will attempt to construct the transmission line before crops are planted or following harvest.³⁵⁹ Additionally, the Commission requires permittees to compensate landowners for crop losses and damaged drain tile.³⁶⁰

~~208.~~185. Impacts to aerial spraying are anticipated to be minimal; the majority of all routing options follow existing ROW or field lines.³⁶¹ The Teal and Orange routes follow the existing ITC Line at a distance for a portion of their length. This would result in an approximately 257-foot gap between the HVTL and the existing ITC Line, which may impact aerial spraying in this small section of the transmission line.³⁶²

³⁵¹ EA at 34 and Generic Route Permit Template at § 5.4.3.

³⁵² Minn. Stat. § 216E.03, Subd. 7(b)(5); Minn. R. 7850.4100(C).

³⁵³ EA at 56.

³⁵⁴ Application at 44.

³⁵⁵ EA at 36.

³⁵⁶ EA at 58; Litchfield Direct at 7.

³⁵⁷ Application at 44.

³⁵⁸ Application at 44.

³⁵⁹ Application at 44.

³⁶⁰ Generic Route Permit Template at § 5.3.19.

³⁶¹ EA at 57.

³⁶² EA at 57-58

~~209.186.~~ Construction-related impacts along the Purple and Gold overbuild options would be similar given the use of a shoo-fly line, and the height and size of the shoo-fly structures could impact aerial spraying.³⁶³

~~210.187.~~ Overall impacts to agriculture are anticipated to be minimal along all routing options. While the Purple and Gold overbuild options would reduce long-term impacts to farmland and aerial spraying due to co-location within existing transmission line ROW, the incremental minimal benefit to agriculture is outweighed by the burden placed on non-participants' land.³⁶⁴ ~~Freeborn Wind has acquired the necessary land rights along the Orange and Purple Parallel routes to construct the Project on participants' land.~~³⁶⁵ Further, participating landowners will be well-compensated for the placement of the line on an ongoing basis, and the easement agreements also provide for compensation for crop losses during construction.³⁶⁶

~~211.188.~~ The presence of the Project will not significantly impact ~~the~~ agricultural land use,³⁶⁷ or general character of the area. ~~As demonstrated by other transmission and wind energy projects in the Midwest, agricultural practices continue during construction and operations.~~

2. Forestry.

~~212.189.~~ There are no active forestry operations, including commercial timber harvest or woodlots, within the route width of any routing option.³⁶⁸ There are no commercially harvested forested areas or woodlots within 20 miles of the Project.³⁶⁹ Therefore, impacts to known forestry operations and resources will not occur.

3. Mining.

~~213.190.~~ Mining operations do not occur within the route width of any routing option.³⁷⁰ Therefore, no impacts to mining will occur.

4. Tourism.

~~214.191.~~ The main land use within the Project area is agriculture (field crops and pastures) and tourist attractions are not associated with the predominant agricultural use of the land.³⁷¹ Tourist activities within Project area are primarily associated with the Shell Rock River State Water Trail and local snowmobile trails.³⁷²

³⁶³ EA at 58.

³⁶⁴ See EA at 57-58; Litchfield Direct at 5; EA at 36.

~~³⁶⁵ Pub. Hrg. Tr. at 13 (Litchfield) and Litchfield Direct at 5.~~

~~³⁶⁶ EA at 58-59; Litchfield Direct at 7.~~

³⁶⁷ EA at 56-59.

³⁶⁸ EA at 27.

³⁶⁹ Application at 44.

³⁷⁰ EA at 27.

³⁷¹ Application at 44.

³⁷² EA at 59.

~~215.~~192. Any potential effect on tourism due to construction of the Project is anticipated to be minor and temporary in nature. The Project will not preclude future tourist activities.³⁷³

~~216.~~193. Power lines can impact tourism if they affect visitor experiences at tourism sites, through aesthetic or noise impacts, or degrade the natural or manmade resources that provide tourist-type activities.³⁷⁴

~~217.~~194. As discussed above in the sections on recreation and aesthetics, the Orange Route best minimizes impacts to aesthetics and recreation, particularly along the Shell Rock River, while the Gold Route involves more significant impacts which cannot be minimized as well as along the Orange/Teal Route.³⁷⁵ Further, as discussed in the noise section above, the Project will comply with the Minnesota Noise Standards.³⁷⁶

E. Effects on Archeological and Historic Resources.

~~218.~~195. Minnesota Rule 7850.4100(D) requires consideration of the effects on historic and archaeological resources.

~~219.~~196. To identify potential impacts to archaeological or historic resources, Freeborn Wind conducted a cultural resource literature review of the Teal Route's route width and a surrounding 1-mile buffer. Cultural resource data from the Minnesota State Historic Preservation Office ("SHPO") site files regarding documented archaeological sites, standing historic structures, and previously executed cultural resource surveys was used to identify site types that may be encountered and landforms or areas that have a higher potential for containing significant cultural resources. Collected data includes archaeological site files, architecture inventory files, and previous cultural resources studies and reports.³⁷⁷

~~220.~~197. The literature review revealed that no previously documented archaeological sites or inventoried architectural resources are located within the route width of the Teal Route, which encompasses the Orange Route as well. The literature review identified two previously reported architectural resources within the 1-mile study area. The first property is the Glenville Creamery. The second property is the Glenville Methodist Episcopal Church. Both of these structures are located within the City of Glenville, which is approximately 0.9 mile northwest of the northern terminus of the Project.³⁷⁸

~~221.~~198. Freeborn Wind contacted the SHPO and the Office of the State Archaeologist ("OSA") in March 2017 to initiate Project coordination. Freeborn Wind sent the SHPO and OSA a Project notice letter and request for comment on April 27, 2017.³⁷⁹

³⁷³ EA at 59.

³⁷⁴ EA at 59.

³⁷⁵ See *supra* pages 28-32.

³⁷⁶ EA at 38; Freeborn Wind Reply Comments, Attachment D (May 2, 2018 Hankard Environmental Letter).

³⁷⁷ Application at 45.

³⁷⁸ EA at 60; Application at 45.

³⁷⁹ Application at 45.

222.199. SHPO reviewed the Project and 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.³⁸⁰

223.200. Prior to construction, Freeborn Wind will conduct a Phase I archaeological resources inventory in cooperation with the SHPO to determine if archaeological sites exist and, if so, their boundaries.³⁸¹

224.201. The record demonstrates that no impacts to archeological and historic resources are anticipated for any routing option.³⁸²

F. Effects on Natural Environment.

225.202. Minnesota’s HVTL routing factors require consideration of the effect on the natural environment, including effects on air and water quality resources and flora and fauna.³⁸³

1. Air Quality.

226.203. No significant impacts to air quality are anticipated from the Project. The overall impact intensity level during construction and operation is anticipated to be minimal for all routing options.³⁸⁴

227.204. Minnesota has an ozone standard of 70 parts per billion (“ppb”) measured over a daily eight-hour average of the three-year average of the annual fourth-highest daily maximum. The national ozone standard is 0.070 ppm over a 3-year average of the annual fourth-highest daily maximum eight-hour average concentration. Ozone and nitrous oxide emissions from the Project are anticipated to be well below these limits.³⁸⁵

228.205. Impacts due to construction dust and equipment exhaust are anticipated to be temporary and can be minimized.³⁸⁶ Freeborn Wind will use Best Management Practices (“BMPs”) to minimize fugitive dust emissions during construction, including controlling soil tracking into roadways and wetting road surfaces. Additionally, Freeborn Wind will not run vehicles and equipment unnecessarily, reducing carbon emissions. Additional mitigation might include planting a seasonal cover crop in agricultural row crop fields to stabilize soils, thereby reducing potential wind erosion.³⁸⁷

³⁸⁰ EA at 60; Application at Appendix D.

³⁸¹ Application at 45; EA at 60.

³⁸² EA at 60-61.

³⁸³ Minn. Stat. §§ 216E.03, Subd. 7(b)(1)-(2); Minn. R. 7850.4100(E).

³⁸⁴ EA at 61.

³⁸⁵ EA at 62.

³⁸⁶ EA at 61.

³⁸⁷ EA at 62.

2. Water Quality and Resources.

~~229.206.~~ The Project is within the Shell Rock River watershed, which is part of the Cedar River Basin.³⁸⁸

~~230.207.~~ The Shell Rock River, from Albert Lea Lake to Goose Creek, is listed on the MPCA Impaired Waters List.³⁸⁹

~~231.208.~~ Impacts to surface waters are similar for all routing options, except that the Purple Route does not cross surface waters and the Gold Route crosses more public waters than any other route: the Shell Rock River and an unnamed stream.³⁹⁰ More acres of open water are located within the Gold Route's route width than any other route option.³⁹¹ In contrast, the Teal and Orange routes cross only one public water: the Shell Rock River.³⁹² ~~Additionally, as discussed above in the sections on aesthetics and recreations, the Orange Route best minimizes impacts at the Shell Rock River crossing, while the Gold Route would involve additional impacts that cannot be minimized as well as the Orange Route.~~³⁹³

~~232.209.~~ The Project will not affect the area's water quality.³⁹⁴ The record demonstrates that Freeborn Wind has minimized impacts to water resources. The Project design will incorporate spacing of structures to span the Shell Rock River. Temporary construction impacts would occur from installing a temporary access road to the structure locations and workspace around the foundation location for installation of the structures placed on either side of the Shell Rock River.³⁹⁵ Temporary impacts will be minimized by using construction matting to access the structure locations.³⁹⁶

~~233.210.~~ Standard mitigation measures regarding water resources are included as Commission permit conditions.³⁹⁷ Freeborn Wind would be required to obtain all necessary "downstream" permits for construction of the Project. This will include a License to Cross Public Lands and Waters from MDNR, which will require the company to demonstrate that the water crossings are consistent with best practices.³⁹⁸ Further, as noted in the EA, Freeborn Wind has committed to obtain a National Pollution Discharge Elimination System stormwater permit, which is necessary for the Project.³⁹⁹

³⁸⁸ EA at 73.

³⁸⁹ EA at 74.

³⁹⁰ EA at 73, 74.

³⁹¹ EA at 75.

³⁹² EA at 73.

~~³⁹³ See EA at 42.~~

³⁹⁴ See Comment by MPCA (Oct. 4, 2017) (eDocket No. [201710-136085-01](#)) and Freeborn Wind Reply Comments on Completeness at 2 and Attachment A (Oct. 31, 2017) (eDocket No. [201710-137023-02](#)); see also Application at 49 and EA at 74-75.

³⁹⁵ Application at 48; [see also EA at 74.](#)

³⁹⁶ Application at 48.

³⁹⁷ See EA at 74; Generic Route Permit Template at § 5.3.8.

³⁹⁸ EA at 74.

³⁹⁹ EA at 74.

~~234.~~211. The Project will not affect the area’s water quality. The Project will comply with its Stormwater Pollution Prevention Plan.⁴⁰⁰ During construction, Freeborn Wind will follow standard erosion control measures identified in the applicable Stormwater BMP Manual, such as using silt fences to minimize the potential for erosion and sedimentation into water bodies within the Project area. Freeborn Wind will maintain sound water and soil conservation practices during construction and operation of the transmission line to protect topsoil and adjacent water resources and minimize soil erosion. Practices include using traditional and low-impact development stormwater management approaches, such as managing stormwater on-site, controlling rate and volume of stormwater reaching receiving waters to predevelopment levels, installing vegetated buffers, containing excavated material, protecting exposed soil, stabilizing restored soil, and revegetation. Specific BMPs and practices will be developed once a route has been approved, and as engineering and design of the Project are being finalized and incorporated into the Project-specific Stormwater Pollution Prevention Plan.⁴⁰¹ No impacts are anticipated once the Project is constructed.⁴⁰²

212. Impacts to groundwater are anticipated to be minimal for all routing options.⁴⁰³ If Freeborn Wind uses wood structures, the structures will be treated using industry-standard substances that comply with applicable regulations. For example, pentachlorophenol (“penta”) may be used as a preservative for wood protection. Penta is used on wood structures to repel water, improve dimensional stability, and reduce checking and splitting, and is consistent with American Wood Protection Association Standard U1-17.⁴⁰⁴ ~~As the EA notes, t~~

~~235.~~213. The U.S. Environmental Protection Agency has concluded that in “considering the total amount of penta available for leaching from utility poles per area while in use, the relatively moderate mobility through the soil profile ... and the moderate degradation under aerobic and [anaerobic] conditions..., contamination of water by penta and its metabolites should not be a concern.”⁴⁰⁵ Penta is not mobile and has a low persistency in the environment. Because of its affinity for soil particles, penta will not move downward into the groundwater. Penta moves into surface waters absorbed to the soil particles through runoff.⁴⁰⁶ Penta that reaches water “is metabolized rapidly under aerobic aquatic conditions and has a half-life of less than five days. Under anaerobic conditions, it metabolizes a little more slowly with half-life of about 34 days. It is, therefore, not a persistent substance in natural waters.”⁴⁰⁷ Therefore, effects of penta on ground and drinking water will be minimal.⁴⁰⁸

⁴⁰⁰ See Comment by MPCA (Oct. 4, 2017) (eDocket No. [201710-136085-01](#)) and Freeborn Wind Reply Comments on Completeness at 2 and Attachment A (Oct. 31, 2017) (eDocket No. [201710-137023-02](#)); see also Application at 49 and EA at 74-75.

⁴⁰¹ EA at 75; see also Application at 49.

⁴⁰² EA at 74.

⁴⁰³ EA at 63.

⁴⁰⁴ EA at 64-65.

⁴⁰⁵ EA at 65.

⁴⁰⁶ [EA at 66.](#)

⁴⁰⁷ [EA at 66.](#)

⁴⁰⁸ EA at 66.

~~214. Public comments raised concerns about impacts to groundwater from “leaching” of concrete foundations. However, leaching of concrete would only be a concern (if at all) can occur prior to setting and hardening of the concrete; cured (hardened) concrete does not leach chemicals.~~⁴⁰⁹ Dewatering is not anticipated to be necessary, and would only be necessary where a bentonite slurry cannot be utilized to create a seal against groundwater.⁴¹⁰ If dewatering is required, Freeborn Wind will work with the MPCA to ensure to the extent practicable that Minnesota Administrative Rule 7050.0210 and other applicable rules are followed to minimize the potential for runoff to surface and groundwater.⁴¹¹ If dewatering is necessary, Freeborn Wind will implement dewatering strategies to prevent potential contamination from the portion of uncured concrete that comes into contact with the soil.⁴¹²

215. Groundwater chemistry is affected when brought into contact with or close proximity to concrete structures since the hydration products of cement can be dissolved and leached into the groundwater. The pH of liquid leaching from concrete can be as high as 13.5; therefore, an increased groundwater pH at the surface of the concrete can be expected. This will not penetrate far into the groundwater. Potential impacts to groundwater from concrete will be minimal.⁴¹³

~~236.~~216. The concrete mix used for the Project follows the building code requirements for concrete exposure and thus is very similar to any exterior concrete in constant contact with the ground, such as foundations for houses, barns, offices, and sidewalks. Additionally, the chemical properties of the groundwater are investigated during the subsurface investigation, and if the groundwater is determined to be acidic or potentially corrosive to concrete (which could potentially cause leaching) the concrete would be designed with a chemically resistant mix to increase the concrete durability and resistance to chemical attack.⁴¹⁴

~~237.~~217. Portions of the Teal, Orange, and Gold routing options are within areas mapped as “Zone AE” by the Federal Emergency Management Agency (“FEMA”). Structures, should they be placed in the floodplain, are not anticipated to affect flooding. Impacts to the 100-year floodplain are not anticipated.⁴¹⁵ Therefore, the record demonstrates that impacts to floodplains as a result of the Project are not anticipated.

~~238.~~218. Wetlands are present throughout the Project area.⁴¹⁶ Freeborn Wind anticipates that a limited number of structures will be placed within a delineated wetland.⁴¹⁷

~~239.~~219. Impacts to wetlands are anticipated to be minimal for all routing options and can be minimized, but the record evidence demonstrates that the Orange Route and Purple

⁴⁰⁹ EA at 67-68.

⁴¹⁰ EA at Appendix C, Information Inquiry #3.

⁴¹¹ EA at 68 and Appendix C, Information Inquiry #3.

⁴¹² See Freeborn Wind Reply Comments at 20.

⁴¹³ EA at 66-67.

⁴¹⁴ See Freeborn Wind Reply Comments at 20.

⁴¹⁵ EA at 27.

⁴¹⁶ EA at 79.

⁴¹⁷ EA at 80.

Parallel Route have the least impacts to wetlands.⁴¹⁸ Impacts to wetlands along the Purple Route will not occur,⁴¹⁹ and the Teal and Orange routes will have minimal impacts.⁴²⁰ In contrast, the Gold Route [also is anticipated to have minimal impacts but](#) will impact more acres of National Wetland Inventory (“NWI”) wetlands than any other route option.⁴²¹ For example, ~~the Gold Route is the only route option with wooded wetlands located within its route width, and~~ the Gold Route impacts more herbaceous wetlands than any other route option [but intersects similar amounts of wooded wetlands.](#)⁴²²

3. *Geology and Topography.*

~~240.~~[220.](#) The overall impact on geology and topography is anticipated to be negligible for all routing options. Potential impacts are not anticipated. Should impacts occur they can be mitigated.⁴²³

~~241.~~[221.](#) The record demonstrates that karst features are not anticipated in the Project area. No karst features or areas have been identified within the route width of any routing option.⁴²⁴ MDNR maintains several GIS layers about karst topography. The first is an inventory of features such as sinkholes, springs, and stream sinks extracted from the karst feature database of Southeastern Minnesota. MDNR also maintains a GIS layer that outlines areas where karst features can form on the land surface and where karst conditions are present in the subsurface. DOC-EERA staff reviewed these layers, no karst features or areas were identified within the route width of any routing option.⁴²⁵

~~242.~~[222.](#) According to MDNR information, there is one site that the MDNR indicates as an area prone to surface karst features located approximately two miles southwest of the Project. Given this distance and the lack of other documented karst features in the Project area, karst features are not anticipated in the Project area.⁴²⁶

[223.](#) In recognition that the Minnesota Regions Prone to Surface Karst data set indicates that the Project area is located near a region prone to karst, Freeborn Wind undertook a geotechnical evaluation to evaluate the likelihood of karst in the proposed turbine locations in the Freeborn Wind Farm docket.⁴²⁷ The geotechnical evaluation explored for voids and examined soil borings. This investigation confirmed there is no karst bedrock within 50 feet of the soil surface and that the proposed turbine locations would not impact any karst areas.⁴²⁸ While this evaluation focused on the proposed turbine locations, based on the data presented by the geotechnical evaluation and MDNR information, ~~it can be~~

⁴¹⁸ See EA at 79-80.

⁴¹⁹ EA at 81.

⁴²⁰ See EA at 79-80.

⁴²¹ See EA at 79-80.

⁴²² ~~EA at 75.~~ [EA at 80.](#)

⁴²³ EA at 62-63.

⁴²⁴ EA at 63.

⁴²⁵ EA at 63.

⁴²⁶ Application at 30; *see also* EA at 63.

⁴²⁷ See EA at 63; Freeborn Wind Reply Comments, Attachment E (Geotechnical Report).

⁴²⁸ Freeborn Wind Reply Comments, Attachment E (Geotechnical Report).

~~confidently concluded that~~ the Transmission Line is not likely to impact karst.⁴²⁹
~~Additionally,~~

~~243.224.~~ Freeborn Wind has committed to geotechnical testing HVTL structure locations prior to construction. Structure design and location will be determined based upon the results of this testing, and will be sited to avoid karst features.⁴³⁰

~~244.225.~~ Structures will be installed at existing grade; therefore, impacts to topography are not expected. Freeborn Wind does not anticipate any grading will be necessary. Should grading occur it would be restricted to only that necessary to establish a flat, safe workspace—major topographical changes to the landscape would not occur.⁴³¹

4. Vegetation.

~~245.226.~~ The majority of the Project area is made up of cultivated cropland or developed areas.⁴³² The Project area does not contain significant areas of forest.⁴³³

~~246.227.~~ The record demonstrates that the Gold Route will impact more forested land than other routes. The Gold Route has more forested land located within its route width than any other routing option.⁴³⁴ Tree clearing would occur along the Gold Parallel option. Some removal might occur along the Gold Overbuild option.⁴³⁵

~~247.228.~~ Tree clearing along the Orange and Teal routes is anticipated to be minimal.⁴³⁶
~~Construction impacts to trees and woodlands will be minimized because the Project area is primarily agricultural. The Teal and Orange routes avoid and minimize these impacts. For example, they follow existing ROWs and construction will occur along existing roadways for some portions of the route.~~ Areas where transmission line construction is planned are primarily agricultural and will require minimal tree removal.⁴³⁷

~~248.229.~~ There are no mapped native prairies within any routing option. However, because not all native prairies have been identified and mapped, Freeborn Wind conducted in-field native prairie evaluations in September 2015 and November 2016 and found that there are 19.3 acres of potential prairie near the Glenworth Substation and north of the Shell Rock River.⁴³⁸

⁴²⁹ See EA at 63; Freeborn Wind Reply Comments, Attachment E (Geotechnical Report).

⁴³⁰ EA at 63; Freeborn Wind Reply Comments at 19-20.

⁴³¹ EA at 63.

⁴³² See Application at 49 and EA at 86.

⁴³³ See EA at 68, 75.

⁴³⁴ See EA at 75.

⁴³⁵ EA at 77.

⁴³⁶ See Application at 50.

⁴³⁷ Application at 50.

⁴³⁸ EA at 76.

~~249.230.~~ ~~The Project will not cross mapped native prairie. And while t~~The Teal, Orange, and Gold routing options will cross potential prairie, this resource will be spanned, minimizing impacts.⁴³⁹

~~250.231.~~ The overbuild options would result in increased direct impacts to vegetation. The Purple and Gold overbuild options will require construction of a temporary shoo-fly line while the existing transmission line is removed.⁴⁴⁰ ~~Additionally, w~~While the Purple and Gold overbuild options will not result in additional structures on the landscape, use of a shoo-fly line increases direct and indirect impacts to soils because the shoo-fly line itself must be installed and removed and the existing transmission line must be removed.⁴⁴¹

~~251.232.~~ Maintenance and emergency repair is expected to be infrequent throughout the life of the Project, and potential impacts to vegetation would be short term and more localized than construction-related impacts.⁴⁴²

~~252.233.~~ Potential impacts to soils are expected to be minimal for all routing options and can be minimized.⁴⁴³ Soils will be minimally disturbed in the location where each pole will be installed in the ground, grading is required for construction purposes, or temporary access roads are required. Soil removed for pole installation in wetland areas will be managed in accordance with applicable BMPs and permit requirements.⁴⁴⁴ Freeborn Wind will minimize soil erosion and assist in reestablishing vegetation through the use of commonly used methods, including soil de-compaction; erosion control blankets with embedded seeds; silt fences; ~~straw~~hay bales; hydro seeding; planting individual seeds or seedlings of non-invasive, native species; and monitoring to insure invasive species do not take hold and the vegetation establishes.⁴⁴⁵

~~253.234.~~ Freeborn Wind has committed to minimizing the introduction and spread of invasive species ~~by. As stated in the EA, Freeborn Wind has committed to~~ reseeding areas disturbed by construction activities with vegetation similar to that which was removed with a seed mixture certified as free of noxious or invasive weeds.⁴⁴⁶ Mitigation measures to reduce the spread of invasive and non-native plant species during construction ~~also~~ include: regular cleaning of construction equipment and vehicles; minimizing ground disturbance to the greatest degree practicable and rapid revegetation of disturbed areas with native or appropriately certified weed-free seed mixes; conducting field surveys of the ROW prior to construction to identify areas containing noxious weed (weed surveys during construction would identify infestations of the ROW and staging sites); eradicating new infestations as soon as practicable in conjunction with property owners' input.⁴⁴⁷

⁴³⁹ EA at 77.

⁴⁴⁰ EA at 77.

⁴⁴¹ EA at 72.

⁴⁴² EA at 77.

⁴⁴³ EA at 71.

⁴⁴⁴ Application at 32.

⁴⁴⁵ Application at 23; *see also* EA at 78.

⁴⁴⁶ EA at 78.

⁴⁴⁷ EA at 78.

5. Wildlife.

~~254.~~235. Wildlife species utilizing the local vicinity of the Project are adapted to agriculture and developed landscapes. Terrestrial wildlife species in the Project area are common species associated with disturbed habitats, and are accustomed to human activities occurring in the area, for example, agricultural activities and road traffic. Common mammals that are likely to occur include opossum, eastern cottontail, white-tailed deer, raccoon, and prairie mole; common reptiles and amphibians include gopher snake, American toad, northern leopard frog, and snapping turtle.⁴⁴⁸

~~255.~~236. Freeborn Wind has conducted multiple wildlife studies for the Freeborn Wind Farm docket documenting avian and bat use of the Freeborn Wind Farm project area, including much of the route options. These include: raptor nest study, eagle nest monitoring, follow-up eagle nest study, large bird use study, small-bird use study, wetland bird use study, and bat acoustic study. Based on these studies, the most commonly observed passerine species include the European starling, common grackle, red-winged blackbird, house sparrow, American robin, horned lark, and song sparrow. Common large birds in the Project area include the American crow, Canada goose, greater white-fronted goose, mallard, and blue-winged teal.⁴⁴⁹

~~256.~~237. The Project is not anticipated to have a significant impact on bats. Impacts to the northern long-eared bat are anticipated to be negligible. Further, the record demonstrates that Freeborn Wind has taken adequate measures, as outlined in the Application, EA, and Draft ABPP, to minimize the risk of fatalities to ~~birds and~~ bats.⁴⁵⁰

~~257.~~238. There are no raptor nests or bald eagle nests within the studied transmission line routes. The closest bald eagle nest is located approximately 0.3 miles west of the Orange Route centerline along the Shell Rock River and is also located approximately 130 feet from an existing 161 kV transmission line.⁴⁵¹

~~258.~~239. Some public commenters asserted the existence of additional eagle nests not identified in the Application.⁴⁵² However, Freeborn Wind conducted additional surveys but did not find any omitted eagle nests in or near the Project area.⁴⁵³ Freeborn Wind already investigated and addressed all of these locations in the Freeborn Wind Farm Site Permit docket.⁴⁵⁴ ~~For example, the record demonstrates that the nest claimed in public comment to be an eagle nest located between a proposed Freeborn Wind Farm turbine and~~

⁴⁴⁸ EA at 82.

⁴⁴⁹ EA at 82; Application at 51.

⁴⁵⁰ See EA at 70, 95; Application at 51-52 and Appendix F (Draft ABPP).

⁴⁵¹ Application at 51.

⁴⁵² See Comments by Dorenne Hansen (June 1, 2018) (eDocket Nos. [20186-143501-01](#); [20186-143501-02](#); [20186-143501-03](#)).

⁴⁵³ Freeborn Wind Reply Comments, Attachment C at 10 and Schedule 6 (Giampoli Direct and Schedules 6, 7, and 8).

⁴⁵⁴ See, e.g., Freeborn Wind Reply Comments, Attachment C at 11-12 and Schedule 6-8 (Giampoli Direct and Schedules 6, 7, and 8).

~~the Project (to the west of 840th Avenue and north of 110th Street in Glenville, Minnesota) is a small, inactive raptor nest, not an eagle nest.~~⁴⁵⁵

~~259.240.~~ The Project was designed to minimize impacts to avian species. Specifically, the Transmission Line will be constructed in accordance with APLIC standards designed to minimize the impacts to eagle and other avian species.⁴⁵⁶

~~260.241.~~ APLIC is a committee of wildlife preservationists and utilities who developed guidance documents identifying causes and minimization methods for avian electrocutions and collisions, and, in conjunction with the USFWS, released Avian Protection Plan (“APP”) Guidelines. The APLIC Standards provide guidance for developing APPs, as well as designs and other measures aimed at preventing avian electrocutions. The APLIC Standards also include BMPs for conductor spacing and shielding to mitigate impacts to avian species caused by electrocution. A transmission line designed to APLIC standards will have substantially less risk to avian species than one not designed to APLIC standards.⁴⁵⁷

~~261.242.~~ The Project will adhere to APLIC design standards that will minimize impacts to avian species.⁴⁵⁸ Experts at WEST conducted an assessment of the Project’s 161-kV transmission line structure design relative to potential avian electrocution risk. The goal of this assessment was to compare proposed transmission line design and operation to potential electrocution risks to resident and migratory bald eagles, based on the Avian Power Line Interaction Committee’s (APLIC) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) and WEST’s expertise in this area.⁴⁵⁹ WEST concluded that:

In summary, no bald eagle electrocution risk would apply to the 161-kV transmission structures proposed to support the Freeborn Wind Energy Facility, based on the structures’ design and size. This determination is based on both the guidelines outlined in APLIC’s *Suggested Practices* (2006) and WEST’s expertise and experience in assessing risk to birds from power line design and operation. At-risk structures for eagle perching typically involve distribution or sub-transmission lines with voltages ≤ 69 kV. The line voltage of the 2014 electrocution of one of the Decorah, Iowa bald eagle fledglings was identified as 69 kV.⁴⁶⁰

~~262.243.~~ Given the Project design’s compliance with APLIC standards, the risk of ~~collision~~ and electrocution of avian species is extremely low. The EA did note that, comparatively, the Purple and Gold overbuild options would have a greater potential for bird collisions due to the height of the poles and number of conductors.⁴⁶¹

~~⁴⁵⁵ Freeborn Wind Reply Comments, Attachment C at 12 (Giampoli Direct and Schedules 6, 7, and 8).~~

⁴⁵⁶ See EA at 85; Litchfield Direct at 8-9; and Application at 51; Freeborn Wind Reply Comments, Attachment B (WEST Electrocutation Risk Review).

⁴⁵⁷ See Litchfield Direct at 9; Freeborn Wind Reply Comments, Attachment B (WEST Electrocutation Risk Review).

⁴⁵⁸ See Litchfield Direct at 9; Freeborn Wind Reply Comments, Attachment B (WEST Electrocutation Risk Review).

⁴⁵⁹ Freeborn Wind Reply Comments, Attachment B (WEST Electrocutation Risk Review).

⁴⁶⁰ Freeborn Wind Reply Comments, Attachment B at 4 (WEST Electrocutation Risk Review); see also *id.* at 2.

⁴⁶¹ EA at 82, 84.

~~263.~~244. Additionally, as requested by the MDNR, Freeborn Wind will install bird diverters on the span of its transmission line that will cross the Shell Rock River and its associated habitat, which will minimize risk to swans and other waterfowl.⁴⁶²

~~264.~~245. The majority of the Project area is classified as developed or cultivated cropland; therefore, any impacts to wildlife habitat will be limited to areas near the Shell Rock River. While forested wetlands by the Shell Rock River will be converted to low stature wetlands, quality habitat conversion will be minimal given the proximity to US 65. The HVTL would be located adjacent to existing ROW near the Shell Rock River meaning these effects would largely be limited to one side of the ROW and would not create newly fragmented areas.⁴⁶³

~~265.~~246. In its comment, MDNR recommended that the “wire/border zone method” be applied at the crossing of Shell Rock River and its associated floodplain/wetlands.⁴⁶⁴ The wire/border zone 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).⁴⁶⁵ Freeborn Wind will comply with this recommendation.⁴⁶⁶

~~266.~~247. Potential impacts to wildlife habitat are anticipated to be similar for all routing options. Impacts will be short- and long-term, of a relatively small size, and localized. The overall impact intensity level is expected to be minimal.⁴⁶⁷

~~267.~~248. As described above, the Orange and Purple Parallel routes best minimize potential impacts to wildlife.

G. Effects on Rare and Unique Natural Resources.

~~268.~~249. Minnesota’s high voltage transmission line routing factors require consideration of the proposed route’s effect on rare and unique natural resources.⁴⁶⁸

~~269.~~250. On April 24, 2018, Freeborn Wind filed a copy of an email received from Lisa Joyal, Endangered Species Review Coordinator, MDNR, regarding Freeborn Wind’s Natural Heritage Information System Data Request Form for the Project. The email serves as a concurrence for the rare features assessment in the Commission Route Permit Application and can be used in lieu of a formal Natural Heritage Letter.⁴⁶⁹

~~270.~~251. The Application indicated, and MDNR concurred, that the following rare features are present within the Project area: one record of a state-threatened vascular plant and one record of a vertebrate animal species of special concern. The Application also discussed

⁴⁶² See EA at 85; Freeborn Wind Reply Comments at 11.

⁴⁶³ EA at 86.

⁴⁶⁴ Comment by MDNR (June 12, 2018) (eDocket No. [20186-143759-01](#)).

⁴⁶⁵ EA at 86.

⁴⁶⁶ See EA at 85 and Freeborn Wind Reply Comments at 11.

⁴⁶⁷ EA at 82.

⁴⁶⁸ Minn. Stat. § 216E.03, Subd. 7(b); Minn. R. 7850.4100(F).

⁴⁶⁹ Freeborn Wind Comments – MDNR National Heritage Concurrence (April 24, 2018) (eDocket No. [20184-142258-02](#)).

the northern long-eared bat. DOC-EERA review of the NHIS database found two additional species present within the Project area: one record of a vascular plant of special concern and one record of a vascular plant on the watch list.⁴⁷⁰ [The EA stated that none of these species were documented within the route width of any routing option.](#)⁴⁷¹ While the Minnesota Statewide Mussel Survey returned records within the Project area, none indicated the presence of state or federally listed species.⁴⁷² Results of a USFWS Information for Planning and Consultation (“IPaC”) review indicate the northern long-eared bat might be potentially affected by activities in the Project area. There are no federal critical habitats in the Project area.⁴⁷³

~~271.252.~~ There are no WMAs, AMAs, Sites of Biodiversity Significance, or SNAs; or USFWS Waterfowl Production Areas within the route width of any routing option. One WMA exists to the west of the Project ~~just~~ across US 65 along with a Minnesota Biological Survey (“MBS”) Site of Biodiversity Significance.⁴⁷⁴

~~272.253.~~ The record demonstrates that impacts on rare and unique natural resources are anticipated to be negligible for all routing options.⁴⁷⁵

H. Application of Various Design Considerations.

~~273.254.~~ Minnesota’s HVTL factors require consideration of the Project’s applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.⁴⁷⁶

~~274.255.~~ The [Teal, Orange, ~~Route~~](#) and Purple Parallel Route best satisfy this factor. These routes best minimize impacts to the environment ~~and human settlement, such as by avoiding non-participants’ land and~~ complying with APLIC standards ~~to~~ all but eliminates risks of avian ~~collision or~~ electrocution with the transmission lines.⁴⁷⁷ In contrast, the Gold Route involves greater impacts to wetlands [and](#); wildlife, ~~and human settlement.~~⁴⁷⁸ Further, the overbuild [routing](#) options involve the greatest potential impact to avian species from collisions ~~and electrocution.~~⁴⁷⁹

⁴⁷⁰ EA at 69.

⁴⁷¹ [EA at 69.](#)

⁴⁷² EA at 69.

⁴⁷³ EA at 69.

⁴⁷⁴ EA at 83.

⁴⁷⁵ See EA at 70.

⁴⁷⁶ See Minn. Stat. § 216E.03, Subd. 7; Minn. R. 7850.4100.

⁴⁷⁷ See, e.g., Litchfield Direct at 5, 8-9 and Pub. Hrg. Tr. at 13 (Litchfield); EA at 84-85.

⁴⁷⁸ See, e.g., EA at 29, 42, 80-81.

⁴⁷⁹ See, e.g., EA at 84.

I. Use or Paralleling of Existing ROW, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries.

~~275.256.~~ Minnesota's high voltage transmission line routing factors require consideration of the use or paralleling of existing ROW, survey lines, natural division lines, and agricultural field boundaries.⁴⁸⁰

~~276.257.~~ The Orange Route and Purple Parallel Route best satisfy this factor. The majority of the Orange and Purple Parallel routes follow existing roadways, transmission lines, or field lines.⁴⁸¹ The Purple Parallel Route is co-located with existing transmission lines for its entire length.⁴⁸² While the Orange Route does not share ROW with an existing transmission line, approximately 1.5 miles of the Orange Route (21%) will be parallel to existing roadways and approximately 49 percent of the route will parallel agricultural field boundaries.⁴⁸³ ~~Freeborn Wind has acquired sufficient property rights to construct the Project entirely on participants' land along the Orange and Purple Parallel routes.~~⁴⁸⁴

~~277.258.~~ ~~While t~~The Gold Route and Purple Route co-locate the Project with existing transmission lines,⁴⁸⁵ ~~the Purple Parallel option best utilizes existing transmission ROW and co-location opportunities along existing transmission lines while best minimizing impacts to human settlement and the natural environment.~~⁴⁸⁶ ~~In contrast, the Gold Route and Purple Overbuild option involve greater impacts to human settlement and the environment.~~⁴⁸⁷

~~278.259.~~ ~~While t~~The Orange Route ~~does not share ROW with an existing transmission line route, it~~parallels agricultural field boundaries for approximately 49 percent of the route and maximizes use of agricultural field boundaries, ~~minimizes impacts to the environment, and best minimizes impacts to human settlement by avoiding non-participants' land.~~⁴⁸⁸

~~279.260.~~ The evidence on the record demonstrates that ~~the Purple Parallel Route and Orange Route are most~~all routing options are consistent with this factor.⁴⁸⁹

⁴⁸⁰ Minn. Stat. § 216E.03, Subd. 7(b)(9); Minn. R. 7850.4100(H).

⁴⁸¹ See, e.g., EA at 40.

⁴⁸² EA at 40.

⁴⁸³ Application at 17, 56.

⁴⁸⁴ ~~Litchfield Direct at 5; Pub. Hrg. Tr. at 13 (Litchfield).~~

⁴⁸⁵ EA at 19, 20.

⁴⁸⁶ ~~See, e.g., EA at 40, 100-101.~~

⁴⁸⁷ ~~See, e.g., EA at 29, 42, 84.~~

⁴⁸⁸ See Application at 56; EA at 40, 100-101.

⁴⁸⁹ EA at 101.

J. Use or Paralleling of Existing Transportation, Pipeline, and Electrical Transmission System ROW.

~~280.~~261. Minnesota's high voltage transmission line routing factors require consideration of the proposed route's use of existing transportation, pipeline and electrical transmission system ROW.⁴⁹⁰

~~281.~~262. None of the routes share pipeline ROW.

~~282.~~263. ~~While the Gold Route and Purple Route co-locate the Project with existing transmission lines for their entire length, the Purple Parallel option best minimizes impacts to human settlement and the natural environment.~~⁴⁹¹ ~~Additionally, while the Teal and Orange Routes does not share ROW with an existing transmission line route; however, a significant the majority portion of these routes Orange Route follows existing roadways, transmission lines, or field lines.~~⁴⁹²

~~283.~~ ~~The evidence on the record demonstrates that the Purple Parallel Route and Orange Route make the greatest use of existing high voltage transmission line ROW while minimizing impacts.~~

K. Electrical System Reliability.

~~284.~~264. Minnesota's high voltage transmission line routing factors require consideration of the Project's impact on electrical system reliability.⁴⁹³

~~285.~~265. The Project will be constructed to meet reliability requirements; therefore, all routing options are consistent with this factor.⁴⁹⁴

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

~~286.~~266. Minnesota's high voltage transmission line routing factors require consideration of the proposed route's cost of construction, operation, and maintenance.⁴⁹⁵

~~287.~~267. The evidence on the record demonstrates that it will be most cost-effective to construct the Project along the Teal, Orange, Route or ~~the Purple Parallel Route.~~⁴⁹⁶

~~288.~~268. The estimated cost of the Project along the Teal and Orange Route is approximately \$3.8 million and \$3.85 million along the Purple Parallel Route. As shown on Table 2, the Purple Overbuild Route and Gold Route are anticipated to have higher costs than the Orange Route and Purple Parallel Route. Notably, the Gold Overbuild Route ~~using the co-~~

⁴⁹⁰ Minn. Stat. § 216E.03, Subd. 7(b)(8); Minn. R. 7850.4100(J).

⁴⁹¹ See, e.g., EA at 40, 100-101.

⁴⁹² See, e.g., EA at 40. Approximately 1.5 miles of the Orange Route (21 percent) will be parallel to existing roadways and approximately 49 percent of the route will parallel agricultural field boundaries. Application at 17, 56.

⁴⁹³ Minn. Stat. § 216E.03, Subd. 7(b)(10); Minn. R. 7850.4100(K).

⁴⁹⁴ See, e.g., EA at 104.

⁴⁹⁵ Minn. R. 7850.4100(L).

⁴⁹⁶ EA at 22.

~~location design~~ is more than twice as costly as the Orange Route (\$8,050,000 vs. \$3,800,000). Total costs are summarized below in Table 2:⁴⁹⁷

Table 2 – Total Estimated Costs

Route	Estimated Cost
Teal Route	\$3,800,000
Orange Route	\$3,800,000
Purple Overbuild Option	\$4,350,000
Purple Parallel Option	\$3,850,000
Gold Overbuild Option	\$8,050,000
Gold Parallel Option	\$4,150,000

~~289.269.~~ Operating and maintenance costs after construction of the transmission line will be nominal for several years because the line will be new and minimal initial vegetation management is required. The anticipated annual operating and maintenance costs for the 161 kV transmission line is approximately \$1,500 per mile. The principal operating and maintenance costs include inspections which are typically ground-based and occasionally done by aerial inspections, generally on a yearly basis.⁴⁹⁸

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

~~290.270.~~ 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.⁴⁹⁹

271. Unavoidable adverse impact will result from construction and operation of the Project.⁵⁰⁰

272. Unavoidable impacts related to construction of the project include visual and noise disturbance to nearby residents and recreationalists; soil compaction and erosion; vegetative clearing; disturbance and temporary displacement of wildlife; minor amounts of habitat loss. Additionally traffic delays and fugitive dust on roadways; crop losses; and direct impacts to wildlife might occur.⁵⁰¹

273. Unavoidable impacts related to operation of the project include visual impact of structures and conductors; loss of land use for other purposes where structures are placed; injury or death of avian species that collide with, or are electrocuted by, conductors; and continued cutting of tall growing vegetation. Additionally interference with AM radio signals and

⁴⁹⁷ EA at 22.

⁴⁹⁸ Application at 9.

⁴⁹⁹ Minn. Stat. § 216E.03, Subd. 7(b)(5)-(6); Minn. R. 7850.4100(M).

⁵⁰⁰ EA at 97, 98.

⁵⁰¹ EA at 97, 98.

negative impacts to property values; and impacts to agricultural operations, for example, aerial spraying, might occur.⁵⁰²

~~The evidence on the record demonstrates that the Orange Route and the Purple Parallel Route will have fewer unavoidable adverse human and natural environment impacts than the other route options.~~

N. Irreversible and Irretrievable Commitments of Resources.

~~291.~~274. 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.⁵⁰³

~~292.~~275. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources have on future generations. Irreversible commitments of resources are those that result from the use or destruction of a specific resource that cannot be replaced within a reasonable timeframe. Irretrievable resource commitments are those that result from the loss in value of a resource that cannot be restored after the action.⁵⁰⁴

~~293.~~276. The Project will require only minimal commitments of resources that are irreversible and irretrievable. Only construction resources, such as concrete, steel, and hydrocarbon fuels, will be irreversibly and irretrievably committed to this Project. During construction, vehicles necessary for these activities would be deployed on site and would need to travel to and from the construction area, consuming hydrocarbon fuels. Other resources would be used in pole construction, pole placement, and other construction activities.⁵⁰⁵

O. Summary of Factors Analysis.

277. All routing options meet Minnesota's route selection criteria equally in terms of Factor B Public Services, Factor C Public Safety, Factor D Archaeological and Historic Resources, Factor F Rare and Unique Resources, and Factor H Paralleling.

278. With regards to Factor A Human Settlement ~~the Teal, Orange, and Purple Parallel~~ routes have lesser impacts than the Gold ~~routing options~~ Route on land use and zoning, noise, and recreation, and wildlife. Notably the Gold routing options would result in significant impacts to land use and zoning. The Purple routes have lesser aesthetic impacts than the Teal, Orange, and Gold routes. ~~The Orange Route and Purple Parallel Route also compare more favorably in terms of cost. The Orange Route and Purple Parallel Route meet~~

⁵⁰² EA at 98.

⁵⁰³ Minn. Stat. § 216E.03, Subd. 7(b)(11); Minn. R. 7850.4100(N).

⁵⁰⁴ Application at 53.

⁵⁰⁵ Application at 53.

~~Minnesota's route selection criteria as well as or better than the Gold, Teal, and Purple Overbuild Route alternatives in terms of impacts to aesthetics, public services,~~

279. With regards to Factor C Land-Based Economies the Teal and Orange routes have greater impacts to agricultural operations because the Purple routing options better minimize impacts in this location.

280. With regards to Factor E Natural Resources the Purple and Gold Overbuild routes have greater impacts to wildlife.

281. With regards to Factor J Use of Existing Infrastructure the Purple and Gold Overbuild routing options best meet this factor.

~~294.~~282. In terms of Factor L Cost the Gold Overbuild route costs significantly more than the other routing options.

~~295.~~ Additionally, the Purple Parallel Route meets Minnesota's route selection criteria as well as or better than the Teal, Gold, and Purple Overbuild Route alternatives in terms of impacts to agriculture.

~~296.~~283. As set forth above, because the Teal, Orange, and Purple Parallel routes make use of existing ROW, ~~impact the fewest forested acres,~~ and generally compare equally or more favorably in regards to all routing factors ~~terms of cost to the route alternatives,~~ the record demonstrates that the Teal, Orange, and Purple Parallel routes best meet Minnesota's route selection criteria. Based on consideration of all routing factors and the Applicant's preference, the Orange Route ~~and~~ combined with the Purple Parallel Route are the best routes for the Project.

II. NOTICE

~~297.~~284. Minnesota statutes and rules require Applicants to provide certain notice to the public and local governments before and during the Application for a Route Permit process.⁵⁰⁶

~~298.~~285. Freeborn Wind provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.

~~299.~~286. Minnesota statutes and rules also require DOC-EERA and the Commission to provide certain notice to the public throughout the Route Permit process.⁵⁰⁷ DOC-EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.

III. COMPLETENESS OF EA

~~300.~~287. The EA process is the alternative environmental review approved for high voltage transmission lines.⁵⁰⁸ The Commission is required to determine the completeness of the

⁵⁰⁶ Minn. Stat. § 216E.03, Subds. 3a, 4; Minn. R. 7850.2100, Subps. 2, 4.

⁵⁰⁷ Minn. Stat. § 216E.03, Subd. 6; Minn. R. 7850.2300, Subp. 2; Minn. R. 7850.3700, Subps. 2, 3, 6.

⁵⁰⁸ Minn. R. 4410.4400, Subp. 6.

EA.⁵⁰⁹ An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.

~~301.288.~~ The evidence on the record demonstrates that the EA is adequate because the EA and the record created at the public hearing and during the subsequent comment period address the issues and alternatives raised in the Scoping Decision.

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

CONCLUSIONS

1. The Commission has jurisdiction to consider the Application.
2. The EA process is the alternative environmental review approved for high voltage transmission lines.⁵¹⁰ Accordingly, the EA process satisfies the requirements of the Minnesota Environmental Policy Act, which does not require that an EIS be completed for the Project.⁵¹¹ DOC-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.
3. Freeborn Wind complied with the procedural and notice requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850.
4. A public hearing was conducted near the proposed route. Proper notice of the public hearing was provided, and the public was given the opportunity to speak at the hearing and to submit written comments. All applicable procedural requirements for the Route Permit were met.
5. The evidence on the record demonstrates that the [Teal, Orange, and Purple Parallel routing options best](#) ~~Route and Purple Parallel Route~~ satisfy 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.
6. The Project is consistent with and reasonably required for the promotion of public health and welfare in light of the state's concern for the protection of its air, water, land, and other natural resources as expressed in the Minnesota Environmental Rights Act.⁵¹²
7. The evidence on the record demonstrates that the Orange Route ~~and combined with~~ [the Purple Parallel Route](#) both satisfy the routing criteria and minimize human and environmental impacts.

⁵⁰⁹ Minn. R. 7850.3900, Subp. 2.

⁵¹⁰ See Minn. R. 4410.4400 Subp. 6.

⁵¹¹ See Minn. Stat. § 116D.04 Subd. 4a.

⁵¹² See Minn. Stat. § 116B.01.

8. A Special Route Permit Condition requiring Freeborn Wind to provide documentation when it files its plan and profile outlining how it will comply with Section 5.3.5 of the Generic Route Permit Template is warranted for the project.

9. A Special Route Permit Condition requiring Freeborn Wind to work with the local electric service provider to ensure that overhead power lines do not follow both sides of 130th Street is warranted for the project. Freeborn Wind shall incur all costs associated with meeting this requirement.

10. A Special Route Permit Condition requiring Freeborn Wind to conduct Karst Geology Investigations is warranted for the project. Freeborn Wind shall provide geotechnical testing results at all proposed pole locations when it files its plan and profile. Freeborn Wind must also file with the Commission a report for all geotechnical investigations completed, which must include methodology, results, and conclusions drawn from the investigation. Structures shall not be located over karst bedrock.

11. A Special Route Permit Condition requiring Freeborn Wind to utilize the “wire/border zone” method of right-of-way clearing and maintenance is warranted for the project.

~~7.~~

8.12. The evidence on the record demonstrates that in addition to the special route permit conditions referenced above the general Route Permit conditions are appropriate for the Project.

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

Based upon these Conclusions, the ALJ makes the following:

RECOMMENDATIONS

The Commission should issue the permit to Freeborn Wind Energy LLC for the Project:

The Commission should grant Aa Route Permit with the general and special route permit conditions for a 161 kV HVTL along the Orange Route combined with the Purple Parallel Route based on Applicant’s preference and with Applicant’s proposed modification to ~~maintain the entire route on participating landowners’ property. That modification would~~ narrow the route by 130th Street to match the Orange Route in this area.

In the alternative, the Commission should grant a Route Permit for the Orange Route with the general and special route permit conditions based on the Applicant’s preference.

THIS REPORT IS NOT AN ORDER AND NO AUTHORITY IS GRANTED HEREIN. THE MINNESOTA PUBLIC UTILITIES COMMISSION WILL ISSUE THE ORDER THAT MAY ADOPT OR DIFFER FROM THE PRECEDING RECOMMENDATION.

Dated on _____

James R. Mortenson
Administrative Law Judge

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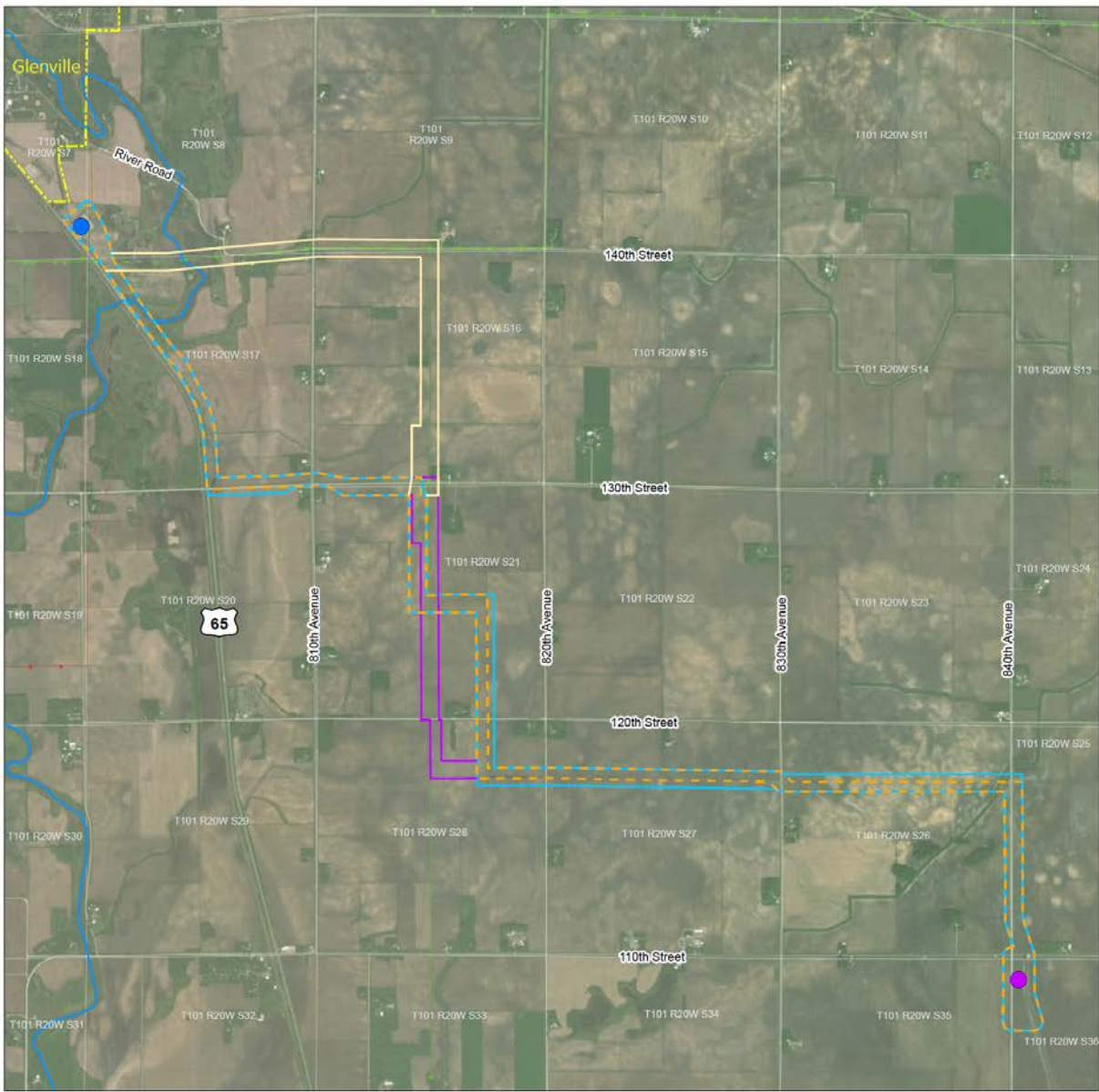
Exhibit A – Routes Evaluated in the Environmental Assessment⁵¹³



**COMMERCE
DEPARTMENT**

Freeborn Wind Transmission Line Project

Alternative Overview Map



<ul style="list-style-type: none"> — TEAL Route — ORANGE Route — GOLD Route Segment — PURPLE Route Segment 	<ul style="list-style-type: none"> ● Proposed Wind Farm Substation ● Glenworth Substation - - - Existing 161 kV Transmission Line - - - Existing 69 kV Transmission Line ~ Shell Rock River State Water Trail 	<div style="text-align: center;"> <p>1 inch = 3,333 feet</p> <p>MILES</p>  <p>0 0.25 0.5 1</p> </div> <p style="font-size: small; text-align: center;">Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community</p>
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⁵¹³ EA at 16.